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Bliood bank initormation systems

## Once a shot in the dark, blood bank systems now hitting the mark

Suzanne Butch, CLDir(NCA), Hal Weiner, Raymond Aller, MD

n with the new and out with a few may be a good way to describe today's blood bank software market. Some vendors have introduced new or modified software during the past year or so, among them SCC Soft Computer's new donor system, SoftDonor, and Psyche Systems' Systematic Blood Bank-Hosted Transfusion System. And a few vendors have sunsetted legacy systems and introduced replacement products, including Mediware, which is no longer marketing Hemocare and its LifeLine Blood Bank Data Management System but is now offering HCLL along with its established LifeTrak product.

The blood bank information systems survey on pages 59–70 provides an overview of blood bank software available in the United States. The information presented was generated from vendors' answers to a questionnaire. This year CAP TODAY has expanded its product profiles to include additional donor system functionality. With the recent emphasis on homeland security, the ability to rapidly react to a major catastrophe, find appropriate blood supplies in a community, and recruit and schedule donors efficiently has become paramount. Several vendors' systems now incorporate Web-based recruitment and self scheduling, as well as centralized transfusion services.

While the following product profiles provide information about general functionality, each facility should write its own detailed specifications for evaluating blood bank systems. Consultants can also help to generate such a checklist based on their knowledge of the marketplace and various vendors' capabilities. These specifications should be used primarily by facility staff as they review product characteristics. Loading such a list into a thick request for proposal usually yields a measure of which salesperson is willing to give unsubstantiated "yes" answers rather than a true picture of system functionality.

Of importance to many donor centers and some hospital transfusion services are their options for semi-automated and fully automated pretransfusion testing. Many blood banks initially had negative experiences with interfacing fully automated instruments with their information systems. Blood bankers considering automation should talk to their counterparts who have instruments that operate with an interface. Among the most common problem areas are the differences in medical nomenclature between the instruments and the LIS-that is, the definition of reactions, such as a dash versus 0 for negative, 4+ versus 4 for a strong reaction, and transmission of individual test results, such as Anti-A4+ instead of sending a conclusion such as A POS. Having hard-coded definitions in the instrument and the information system could compromise the usability and visual appearance of the test reports.

Blood bankers should also be cognizant of the latest developments in the bedside identification of patients and specimens coupled with the use of bar-coded specimen labels. Both have been available since the late 1980s but have not been used to their fullest capacity.

The Joint Commission on Accreditation of Healthcare Organizations has focused extensively on patient identification. This, in part, spurred vendors' interest in developing software that is integrated with the blood bank information system and used at the patient bedside to verify specimen collection as well as to verify patient and blood component compatibility at the time of transfusion. Some vendors have developed their own, unique applications, while others have partnered with a third party to develop such applications. Many of these are worthwhile products.

Positive identification obviously is also an issue for facilities that modify blood components for transfusion. The blood bankers at such facilities should ask vendors if their systems can produce labels that comply with the FDA's Feb. 26, 2004 final rule, "Bar Code Label Requirements for Human Drug Products and Biological Products," and if their systems can print Codabar and ISBT 128 blood component labels.

The FDA regulation, which applies to all hospitals, requires machine-readable information on blood and blood component container labels to help prevent transfusion errors and accidents. The labels must contain such bar-coded information as unique facility identifier, lot number relating to the donor, product code, and donor's blood group and type. Hospitals and other suppliers of blood and blood components conducting business before April 26, which was the effective date of the rule, have until April 26, 2006 to implement the regulation.

If you consider automation, bedside identification, and bar-code labeling to be a frill or an extra, keep in mind that you are likely to use the system you purchase today for five to seven years. Don't discount the importance of these features and compromise your ability to detect and prevent errors.

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October 2004		CAP TODA	<u>W/59</u>
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B10001	Dainik IInitorhnaitii	oh systems	SEA
Part 1 of 6	Blood Bank Computer Systems Craig Smith csmith@bbcsinc.com 1002 15th St. SW, Ste. 120 Auburn, WA 98001	Cerner Corp. Angela Betts abetts@cerner.com 2800 Rockcreek Parkway Kansas City, MO 64117	Cerner Corp. Angela Betts abetts@cerner.com 2800 Rockcreek Parkway Kansas City, M0 64117
See accompanying article on page 58	253-333-0046 www.bbcsinc.com	816-201-2771 www.cerner.com	816-201-2771 www.cerner.com
Name of blood bank system	Blood Bank Control System	PathNet Blood Bank Donor	PathNet Blood Bank Transfusion
First ever blood bank system installation First/most recent installation of <i>current</i> blood bank system Total number of contracts for operational sites •U.S. hospitals—donor and transfusion service	1987 1997/Aug. 2004 26 0	1985 	1985 1997/2004 400+ 50+ 250-
•U.S. regional blood centers—donor service only     •U.S. regional blood centers—donor and transfusion service     •Centralized transfusion services in the U.S.     •Eorein bosnitals/foreing regional blood centers	21 5 0		0 4 0 40+
Total number of sites operational Installations underway that are not yet live	23 3 (0/3)	_	400+ 81+ (81/0)
(hospitals/regional blood centers) Percentage of installations that are stand-alone systems	100%	available stand-alone or integrated	<10%
Staff to develop/install/support/other*			
In entire company/in blood bank systems	14-2-3-3	800+-1,900+-800+-1,300+/15-24-10-15	800+-1,900+-800+-1,300+/15-24-10-15
•Versions of product covered by FDA 510(k) clearance     •Versions of product that did not require FDA 510(k) clearance	4.4 0	— Classic, Millennium n/a	— Classic, Millennium n/a
Range in No. of terminals/workstations in live sites (ave.)	10–150 (ave. 40)	-	5–500+ (ave. 10–20)
<ul> <li>Central hardware/computer platform or services</li> <li>Terminals/workstations</li> <li>Central hardware redundant/fault-tolerant?</li> </ul>	IBM iSeries IBM 5250-compatible workstations and PCs yes	HP, IBM RS/6000 Intel Pentium PCs yes	HP, IBM RS/6000 Intel Pentium PCs yes
Software •Programming language(s) •Onerating system(s)	RPG/400, Java 0\$/400	Visual Basic, C++, Cobol (Classic) Open VMS, AlX	Visual Basic, C++, Cobol (Classic) Open VMS, AlX
•Database platform     •Full transaction logging?	IBM DB2 yes	Oracle (Millennium), Cerner proprietary (Classic) yes	Oracle (Millennium), Cerner proprietary (Classic) yes
Features (listed as percentage of live installs or based on availability)			
•Unit inventory     •Autologous and directed unit tracking	100% 100%	expected in 2005 expected in 2005	100% 100%
•Crossmatch results	20%	expected in 2005	100%
Print donor unit labels—bar coded     Full support of ISBT 128 unit labeling	available third quarter 2004 available third quarter 2004	expected in 2005 expected in 2005	available in 2004 available in 2004
•Donor recruitment	100%	expected in 2005	
Donor questionnaire     Mobile schoduling	available third quarter 2004	expected in 2005	_
<ul> <li>Interface with automated type and screen instruments</li> </ul>	80%	expected in 2005	 5%
Source/recovered plasma management	100%	expected in 2005	_
Bar-code reading of donor and unit information     Ad here report writer	100%	expected in 2005	100%
•Accounts receivable	100%	expected in 2005	15%
Management reports	100%	expected in 2005	100%
•Direct entry of test results     •Electronic crossmatch decisionmaking	100% 5%	expected in 2005	100% 30%
•Laptop-based mobile donor registration module	90%	future development	
Track all steps in production of product     Articen twice	100%	expected in 2005	100%
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> </ul>	available third quarter 2004	not available	not available
Centralized transfusion services     Hand held devices for positive potient ID	5% ovoilable third quarter 2004		installed
System provides standard ASTM/HI 7 interface?			
Connectivity Tools to help clients validate their systems	Telnet, local client, remote client, Web client department dedicated to development of valida- tion protocols, flow charts, management guides, validation guide documents, 24/7 client support	Telnet, local client, remote client solution validation guidelines, support guide, application consultants, others	
Complete blood bank ASP solution? Method of charging for ASP service Client software required	yes transaction based requires software be installed on client PC,	yes fixed fee requires software be installed on client PC	yes fixed fee requires software be installed on client PC
ASP information conduit Client contracts supported from data center not operated by client	requires use of private, dedicated circuit 2	requires use of private, dedicated circuit	requires use of private, dedicated circuit
How data center is operated	by a third party (blood bank)	by vendor	by vendor
System provides indexed field in each test definition for LOINC code Provide LOINC dictionary for each new installation?	97 NO NO	yes yes	yes yes
HIS interfaces LIS interfaces	none Cerner, Wyndgate, Mediware, IDM	multiple vendors multiple vendors	multiple vendors multiple vendors
User group? Source code?	yes (meets online as well) escrow	plan to form user group escrow	yes escrow
Can user modify screens? User-defined report writer?/custom programming?	no yes/yes	yes yes/yes	yes yes/yes
Cost (hardware/software/monthly maintenance) •Smallest •Largest	_		_
Distinguishing features (supplied by vendor)	<ul> <li>leading the way in risk management</li> <li>system is highly configurable</li> </ul>	<ul> <li>comprehensive, totally integrated single system</li> <li>more than 24 years in the LIS industry</li> </ul>	<ul> <li>comprehensive, totally integrated single system</li> <li>more than 24 years in the LIS industry</li> </ul>
*other=sales, marketing, administration, other company functions	user group interaction and direction in product development	continued innovations     t product going into alpha testing with first client	continued innovations

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

Survey editor: Raymond D. Aller, MD

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(in Bl	lood bank intor		
		mation systems	
		e e e e e e e e e e e e e e e e e e e	
Part 2 of 6	Information Data Management Inc. Susan L. McBride slm@idm.com 9701 W. Higgins Rd., Ste. 500	Mak-System Corp. Stephane Sajot sales.us@mak-system.net 2720 River Rd., Ste. 225	Meditech Paul Berthiaume pberthiaume@ Meditech Circle
See accompanying article on page 58	Rosemont, IL 60018 800-249-4276/847-825-2300 www.idm.com	Des Plaines, IL 60018 847-803-4863 www.mak-system.net	Westwood, MA 02090 781-821-3000 www.meditech.
Name of blood bank system	IDM Select Series for Blood Centers	Progesa	LIS Blood Bank Application (cli
First over blood bank system installation	1001	1095	1091
First/most recent installation of <i>current</i> blood bank system	1991 1999/July 2002	1900 1985/2004	
Total number of contracts for operational sites	8		135
•ILS, hospitals—donor and transfusion service	0	_	_
•II S hospitals—transfusion service only	0	_	_
all S ragional blood conters_donor service only	7	5	
•0.5. regional blood centers—donor and transfusion cervice	1	5	_
•0.5. regional blood centers—donor and transfusion service	0	—	—
Centralized transfusion services in the U.S.     Foreign boostale (foreign regional blood contere)	U 1 (llang Kang)		—
Foreign hospitals/foreign regional blood centers	1 (Hong Kong)	515	
Total number of sites operational Installations underway that are not yet live	8 0	 20 (10/10)	124 11 (11/0)
(hospitals/regional blood centers) Percentage of installations that are stand-alone systems	100%	100%	2%
Staff to dovelon/install/support/other*			
<ul> <li>In entire company/in blood bank systems</li> </ul>	32-8-12-15	102-45-48-55	2,093 total
No. of different versions of software installed	6	_	1
<ul> <li>Versions of product covered by FDA 510(k) clearance</li> </ul>	-	4.4	client/server
•Versions of product that did not require FDA 510(k) clearance	DMIS 1.2.2, DMIS 2.0, CDIS 1.1.2, CDIS 2.0, InTouch 1.5, InTouch 2.0	-	_
Range in No. of terminals/workstations in live sites (ave.)	4–80 (ave. 30)	10–1,000 (ave. 100)	_
•Central hardware/computer platform or services	HP NetServers, HP 9000 business servers	no restrictions (any hardware with Unix)	HP, Dell, EMC, IBM
•Terminals/workstations	Unix terminals/X-terminals, PCs, workstations	Wyse, HP, IBM, DEC, PCs	HP, Dell, EMC, IBM
•Central hardware redundant/fault-tolerant?	yes	yes	yes
Softwara			
•Programming language(s)	C++ C	C C++ Pro/5 Java	Windows NT
•Anerating system(s)	Univ	Unix Web technology client servers	Windows NT
•Detabase platform	Oracle	Oracle C-ISAM	SOL sorver
• Full transaction logging?	Ves	Ves	SQL Server
· · · · · · · · · · · · · · · · · · ·	,	,	,
eatures (listed as percentage of live installs or based on availability     elinit inventory	) 100%	100%	installed
•Autologous and directed unit tracking	100%	100%	installed
Autologous and uncolou unit indoking     Acrocematoh regulte	not available	100%	installed
Print donor unit labole_bar coded	100%	100%	installed
• Full current of ICBT 100 unit lobeling	not queilable	installed	
•Full support of 1561 126 unit labeling			
•Donor recruitment	100%	100%	Installed
•Donor questionnaire	not available	100%	available
Mobile scheduling	100%	100%	available
<ul> <li>Interface with automated type and screen instruments</li> </ul>	available through IDM Surround	installed	available
<ul> <li>Source/recovered plasma management</li> </ul>	100%	100%	installed
<ul> <li>Bar-code reading of donor and unit information</li> </ul>	100%	100%	installed
•Ad hoc report writer	100%	100%	installed
•Accounts receivable	not available	100%	installed
•Monogoment reporte	1000/	100%	installed
	100%		
• Direct entry of test results	100%	installed	installed
•Electronic crossmatch decisionmaking	not available	installed	installed
<ul> <li>Laptop-based mobile donor registration module</li> </ul>	not available	100%	available
<ul> <li>Track all steps in production of product</li> </ul>	100%	installed	installed
	100%	installed	installed
•Antigen typing	net eveileble	installed	not available
Antigen typing     Altarface with blood irradiator/contrifuger		Installeu	installed
Antigen typing     Interface with blood irradiator/centrifuges	not available		Installed
•Antigen typing •Interface with blood irradiator/centrifuges •Centralized transfusion services •Hand-held devices for positive patient ID	not available not available not available	 100%	installed
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID  Sustem provides standard ASTM/UL7 interface?	not available not available not available	 100%	installed
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?	not available not available not available no		installed yes
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity	not available not available not available no Telnet, remote client, other	 100% yes Telnet, Web client	installed yes local client, remote client, Web
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems	not available not available not available no Telnet, remote client, other product user manuals, product validation guide,	 100% yes Telnet, Web client user guides, hazard analysis, training	installed yes local client, remote client, Web comprehensive manual to addr
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems	not available not available not available no Telnet, remote client, other product user manuals, product validation guide, configuration workshops, automated testing	Telnet, Web client user guides, hazard analysis, training manuals, data conversion, validation, scenario	installed yes local client, remote client, Web comprehensive manual to addr issues, application consultants
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems	not available not available not available no Telnet, remote client, other product user manuals, product validation guide, configuration workshops, automated testing tools, training classes and materials, others	Telnet, Web client user guides, hazard analysis, training manuals, data conversion, validation, scenario samples	installed yes local client, remote client, Web comprehensive manual to addr issues, application consultants
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems	not available not available not available no Telnet, remote client, other product user manuals, product validation guide, configuration workshops, automated testing tools, training classes and materials, others	Telnet, Web client user guides, hazard analysis, training manuals, data conversion, validation, scenario samples	installed yes local client, remote client, Web comprehensive manual to addr issues, application consultants
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems     Complete blood bank ASP solution?	not available not available not available no Telnet, remote client, other product user manuals, product validation guide, configuration workshops, automated testing tools, training classes and materials, others	Telnet, Web client user guides, hazard analysis, training manuals, data conversion, validation, scenario samples	installed yes local client, remote client, Web comprehensive manual to add issues, application consultants
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems     Complete blood bank ASP solution?     Method of obarging for ASP apprice	not available not available not available no Telnet, remote client, other product user manuals, product validation guide, configuration workshops, automated testing tools, training classes and materials, others yes	Telnet, Web client user guides, hazard analysis, training manuals, data conversion, validation, scenario samples	installed yes local client, remote client, Wel comprehensive manual to add issues, application consultant

Client software required ASP information conduit	uses dumb terminals requires use of private, dedicated circuit and VPN	_	_
Client contracts supported from data center not operated by client How data center is operated	0 by vendor	=	-
System provides indexed field in each test definition for LOINC code Provide LOINC dictionary for each new installation?	? no no	no no	yes no
HIS interfaces LIS interfaces	n/a IDM	no restrictions no restrictions	Cerner, Siemens, McKesson, others Cerner, Misys, others
User group? Source code? Can user modify screens? User-defined report writer?/custom programming?	yes escrow no yes/yes	yes (meets online as well) escrow no —	yes (meets online as well) yes yes yes/no
Cost (hardware/software/monthly maintenance) •Smallest •Largest	_	_	_
Distinguishing features (supplied by vendor) *other=sales, marketing, administration, other company functions	<ul> <li>over two decades of experience in regulated SW</li> <li>24/7 customer support services</li> <li>large customer base and financial stability</li> </ul>	<ul> <li>fully integrated application with abundant functionality</li> <li>highly customizable through parameters</li> </ul>	<ul> <li>fully integrated applications</li> <li>developed in-house by Meditech</li> <li>35 years of LIS experience</li> </ul>

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## Blood bank information systems

	Maditaab	Mediware Information Customs Inc	Madiwaya Information Guatama Inc
Dort 2 of 6	Meditech Davi Barthiauma, sharthiauma@maditaah.aam	Mediware Information Systems Inc.	Mediware information Systems Inc.
Part 3 01 6	Paul Berthiaume poerthiaume@meditech.com	Sam cummings sam.cummings@mediware.com	Sam cummings sam.cummings@mediware.com
	Meditech Circle	1900 Spring Rd.	1900 Spring Rd.
	Westwood, MA 02090	Oak Brook, IL 60523	Oak Brook, IL 60523
See accompanying article on page 58	781-821-3000 www.meditech.com	630-218-2112 www.mediware.com	630-218-2112 www.mediware.com
Name of blood bank system	LIS Blood Bank Application (Magic)	HCLL (Hemocare Lifeline)	LifeTrak
First over blood bank system installation	1021	1078	1078
First ever blood ballk System installation	1301 / h-h- 0004	1970	1000/0002
First/most recent installation of <i>current</i> blood bank system	—/July 2004	2000/2004	1999/2003
Total number of contracts for operational sites	626	448	9
•U.S. hospitals—donor and transfusion service	_	100	0
•U.S. hospitals—transfusion service only	_	348	0
•II S regional blood centers—donor service only	_	0	9
all S regional blood contere denor and transfusion convice		0	0
•0.3. regional blood centers—donor and transitision service	_	0	0
• Centralized transitision services in the U.S.	_	U	0
<ul> <li>Foreign hospitals/foreign regional blood centers</li> </ul>	—	0	0
Total number of sites operational	615	436	5
Installations underway that are not yet live	11 (11/0)	12 (12/0)	4 (0/4)
(hospitals/regional blood centers)		( )	. ,
Percentage of installations that are stand-alone systems	20/	100%	100%
	278	10070	10078
Staff to develop (install / support / athent			
Start to develop/install/support/other*			00 00 44 00 40 0 04 00
•In entire company/in blood bank systems	2,093 total	39-26-41-69/19-8-21-23	39-26-41-69/19-8-21-23
No. of different versions of software installed	1	6	2
•Versions of product covered by FDA 510(k) clearance	Magic	100%	100%
•Versions of product that did not require FDA 510(k) clearance	_	0	0
Range in No. of terminals/workstations in live sites (ave.)	_	1–60 (ave. 16)	12–60 (ave. 30)
Central hardware/computer platform or services	HP Dell FMC IRM	Nell Compage qualified models based on usor	HP 9000 series Intel-based servors
כטוונימו וומרמאמרט/טטווויףמנט וומנוטרווו טו סכו אוטניט	, Boli, Liio, IBiii	configurations	11 JUUU JUUUJ, IIIUI-DAJEU JEIVEIJ
		connyurations	20
• Terminals/workstations	HP, Dell, EMC, IBM	PCs	PCs
•Central hardware redundant/fault-tolerant?	yes	yes	yes
Software			
Programming language(s)	Manie	Visual C++ Visual Basic w/component arch	Oracle Developer 2000 PL/SOL
- 1 logramming language(s)	Magic		
• Operating system(s)	magic	windows 2000 server, 2000 advance server	HP-UX, LINUX
		workstations, 2000 Professional	
Database platform	Magic	SQL Server 2000, Seagate Crystal Reports	Oracle
•Full transaction logging?	ves	ves	ves
Features (listed as percentage of live installs or based on availability)			
ellnit inventory	installed	installed	900/
			80 /8
•Autologous and directed unit tracking	Installed	Installed	80%
Crossmatch results	installed	installed	not available
Print donor unit labels—bar coded	installed	installed	80%
•Full support of ISBT 128 unit labeling	available	installed	_
Donor recruitment	installed	not available	80%
Donor questionnaire	available	not available	
• Mobile scheduling	avallable	not available	60%
Interface with automated type and screen instruments	available	not available	1000/
		not available	100%
•Source/recovered plasma management	installed	not available	80%
Source/recovered plasma management     Bar-code reading of donor and unit information	installed installed	not available installed	80% 80%
•Source/recovered plasma management     •Bar-code reading of donor and unit information     •Ad hoc report writer	installed installed installed	not available installed installed	80% 80% installed
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable	installed installed installed installed	not available installed installed not available	80% 80% installed not available
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable	installed installed installed installed installed	not available not available installed not available	80% 80% installed not available
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports	installed installed installed installed installed	not available installed installed not available installed	80% 80% installed not available 100%
•Source/recovered plasma management •Bar-code reading of donor and unit information •Ad hoc report writer •Accounts receivable •Management reports •Direct entry of test results	installed installed installed installed installed installed	not available installed installed not available installed installed	80% 80% installed not available 100% installed
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking	installed installed installed installed installed installed installed	not available installed installed not available installed installed installed	80% 80% installed not available 100% installed not available
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking     Laptop-based mobile donor registration module	installed installed installed installed installed installed installed available	not available installed installed not available installed installed installed not available	80% 80% installed not available 100% installed not available installed
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking     Laptop-based mobile donor registration module     Track all steps in production of product	installed installed installed installed installed installed installed available installed	not available installed installed not available installed installed installed not available installed	100% 80% installed not available 100% installed not available installed 100%
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking     Laptop-based mobile donor registration module     Track all steps in production of product     Antigen typing	installed installed installed installed installed installed available installed installed	not available installed installed not available installed installed installed not available installed	80% 80% installed not available 100% installed not available installed 100% installed
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking     Laptop-based mobile donor registration module     Track all steps in production of product     Antigen typing	installed installed installed installed installed installed available installed installed pat available	not available installed installed not available installed installed installed not available installed installed	80% 80% installed not available 100% installed not available installed 100% installed
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking     Laptop-based mobile donor registration module     Track all steps in production of product     Antigen typing     Interface with blood irradiator/centrifuges	installed installed installed installed installed installed available installed installed installed installed installed	not available installed installed not available installed installed installed not available installed installed installed	80% 80% installed not available 100% installed not available installed 100% installed
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking     Laptop-based mobile donor registration module     Track all steps in production of product     Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services	installed installed installed installed installed installed installed available installed installed installed not available installed	not available installed installed not available installed installed installed not available installed installed installed installed installed	80% 80% installed not available 100% installed not available installed 100% installed not available not available not available
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking     Laptop-based mobile donor registration module     Track all steps in production of product     Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID	installed installed installed installed installed installed installed available installed installed not available installed installed installed installed	not available installed installed installed installed installed installed installed installed installed installed installed installed installed not available installed not available installed not available	100% 80% installed not available 100% installed not available installed 100% installed not available not available not available
Source/recovered plasma management     Bar-code reading of donor and unit information     Ad hoc report writer     Accounts receivable     Management reports     Direct entry of test results     Electronic crossmatch decisionmaking     Laptop-based mobile donor registration module     Track all steps in production of product     Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID	installed installed installed installed installed installed installed available installed installed not available installed installed installed	not available installed installed not available installed installed installed not available installed not available installed not available installed not available installed	100% 80% installed not available 100% installed not available installed 100% installed not available not available not available
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<ul> <li>Source/recovered plasma management</li> <li>Bar-code reading of donor and unit information</li> <li>Ad hoc report writer</li> <li>Accounts receivable</li> <li>Management reports</li> <li>Direct entry of test results</li> <li>Electronic crossmatch decisionmaking</li> <li>Laptop-based mobile donor registration module</li> <li>Track all steps in production of product</li> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code</li> <li>Provide LOINC dictionary for each new installation?</li> <li>HIS interfaces</li> <li>LIS interfaces</li> <li>User group?</li> <li>Source code?</li> <li>Can user modify screens?</li> <li>User-defined report writer?/custom programming?</li> <li>Cost (hardware/software/monthly maintenance)</li> <li>Smallest</li> <li>Largest</li> <li>Distinguishing features (supplied by vendor)</li> </ul>	installed installed installed installed installed installed installed installed available installed not available installed not available installed yes Telnet, local & remote client, Web client, other comprehensive manual to address validation issues, application consultants no 	not available installed installed installed installed installed installed installed installed installed installed not available installed not available yes Telnet, local client, remote client validation services, validation scripts, consul- tation services NO 	100%         80%         80%         installed         not available         100%         installed         not available         installed         100%         installed         100%         installed         100%         installed         not available         not available         not available            Telnet, local client, remote client         telephone support, contracted services, validation templates         no  yes         escrow         no         yes/no         \$15k/\$50k/\$2.7k         \$250k/\$700k/\$32k         • cGMP/manufacturing and process control to ensure product safety
<ul> <li>Source/recovered plasma management</li> <li>Bar-code reading of donor and unit information</li> <li>Ad hoc report writer</li> <li>Accounts receivable</li> <li>Management reports</li> <li>Direct entry of test results</li> <li>Electronic crossmatch decisionmaking</li> <li>Laptop-based mobile donor registration module</li> <li>Track all steps in production of product</li> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> </ul> Complete blood bank 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 System provides indexed field in each test definition for LOINC code Provide LOINC dictionary for each new installation? HIS interfaces LIS interfaces User group? Source code? Can user modify screens? User-defined report writer?/custom programming? Cost (hardware/software/monthly maintenance) <ul> <li>Smallest</li> <li>Largest</li> </ul> Distinguishing features (supplied by vendor)	installed installed installed installed installed installed installed installed installed installed installed installed installed yes Telnet, local & remote client, Web client, other comprehensive manual to address validation issues, application consultants no 	not available installed installed installed installed installed installed installed not available installed not available installed not available yes Telnet, local client, remote client validation services, validation scripts, consul- tation services no 	100%         80%         80%         installed         not available         100%         installed         not available         installed         100%         installed         100%         installed         100%         installed         not available         not available            Telnet, local client, remote client         telephone support, contracted services,         validation templates         no   yes         escrow         no         yes/no         \$15k/\$50k/\$2.7k
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## - Bllood bamk intormation systems

<u><u> </u></u>		
	Misvs Healthcare	Psyche Systems Corp.
Part 4 of 6	Elizabeth West liddy.west@misyshealthcare.com	Patricia Salem pattys@psychesystems.com
	4801 E. Broadway Blvd., Tucson, AZ 85711	321 Fortune Blvd., Milford, MA 01757
See accompanying article on page 58	520-570-2000 www.misyshealthcare.com	800-345-1514 www.psychesystems.com
Name of blood bank system	Misus Blood Bank and Misus Blood Donort	Systematic Plead Bank-Hostod Transfusion System
	Misys blood ballk alld Misys blood bollor	Systematic blood bank-nosted mansfusion System
First ever blood bank system installation	1985	1987
First/most recent installation of <i>current</i> blood bank system	2004/2004	2001/Dec. 2003
Total number of contracts for operational sites	~486	9
•U.S. hospitals—donor and transfusion service	37	0
•U.S. hospitals—transfusion service only	421	9
•U.S. regional blood centers—donor service only	0	0
•U.S. regional blood centers—donor and transfusion service	0	0
•Centralized transfusion services in the U.S.	unknown	0
<ul> <li>Foreign hospitals/foreign regional blood centers</li> </ul>	28	0
Total number of sites operational	480	5
Installations underway that are not yet live	6 (6/0)	4 (4/0)
(hospitals/regional blood centers)		
Percentage of installations that are stand-alone systems	0	0
Staff to develop/install/support/other*		
•In entire company/in blood bank systems	655-1,233††-550/8-4-6-2	9-15-10-6/4-8-5-3
No. of different versions of software installed	1	1
•Versions of product covered by FDA 510(K) clearance	1	SBB 3.0
Ventions of another that did not require EDA 510(k) alegraphic	A	
	0	0
Pange in No. of terminals/workstations in live sites (ave.)	A_500± (ave 15_20)	2_20 (ava 6)
nallys in No. of terminator workstations in two onces (area)	4-300+ (ave. 13-20)	2-20 (ave. 0)
Central hardware/computer platform or services	HP Alnha. IBM RS/6000	HP Alpha platform
•Terminals/workstations	PCs. terminals	Windows comnatible
Central hardware redundant/fault-tolerant?	on request	Ves
	01104400	,
Software		
Programming language(s)	Open M. Caché. C. C++	Fortran
•Operating system(s)	DEC Unix, Open VMS, AIX	Open VMS
Database platform	Intersystems M, Caché	proprietary
•Full transaction logging?	ves	ves
Features (listed as percentage of live installs or based on availability)		
Unit inventory	100%	100%
Autologous and directed unit tracking	100%	100%
Crossmatch results	100%	100%
Print donor unit labels—bar coded	not available	100%
•Full support of ISBT 128 unit labeling	100%	100%
Donor recruitment	15%	not available
Donor questionnaire	not available	not available
Mobile scheduling	not available	not available
Interface with automated type and screen instruments	available fourth quarter 2004	10%
Source/recovered plasma management	100%	not available
•Bar-code reading of donor and unit information	100%	100%
Ad hoc report writer	100%	100%
Accounts receivable	100% (charge capture)	not available
Management reports	100%	100%
• Direct entry of test results	100%	100%
Electronic crossmatch decisionmaking	available fourth quarter 2004	
Laptop-based mobile donor registration module	not available	not available
Irack all steps in production of product	100%	100%
•Antigen typing	100%	100%
Interrace with blood irradiator/centringes	not available	not available
Gentralized transfusion services	INSTAILED	100%
	2%	
Sustam provides standard ASTM/HL7 interface?	VAC	
System provides standard Astronich michaes:	yes Talpat local client remote client	yes Talnat local client remote client Web client
Tools to help clients validate their systems	Mieve Healthcare Consulting	documentation and training
	Misys nearmoare oblighting	
Complete blood bank ASP solution?	no	ves
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	0	2
How data center is operated	<u> </u>	by vendor
System provides indexed field in each test definition for LOINC code?	no	yes
Provide LOINC dictionary for each new installation?	no	no
HIS interfaces	McKesson, Meditech, Siemens, Epic, Eclipsys, Cerner, Phamis, others	Meditech, Siemens, McKesson, Misys, Cerner, others
LIS interfaces	n/a	Psyche Systems, others
	/	
User group?	yes (meets online as well)	yes
Source code?	escrow	escrow
Can user modify screens?	no	yes _
User-defined report writer?/custom programming?	yes/yes	yes/no
A the strengt of the second by maintenance)		
Cost (hardware/software/monthly maintenance)	ATO, 164 001-164 FL	AO 144 01-160 FL
•Smallest	\$50K/\$100K/\$1.5K	\$U/\$10K/\$U.5K
•Largest	\$100K/\$250K/\$4K+	\$U/\$5UK/\$U.75K
Distinguishing features (supplied by yander)	e integrated with Migua Laboratory _ includes display of regults	• product rups on any operating system
Distinguishing reatures (supplied by vehiclor)	<ul> <li>Integrated with misys Laboratory—includes display of results</li> <li>standard blood bank reports with lab data integrated</li> </ul>	product runs on any operating system     offered as a stand-alone product
	Standard blood bank reports with lab data integrated     proportive utilization reports	• onereu as a stanu-aione product
	• produtive dullization reports	
tother-color marketing administration other company functions	answers are for both systems combined	
ouler=sales, marketing, auministration, other company functions		

N Bla	ood bamk information !	svstems
	SCC Soft Computer	SCC Soft Computer
Part 5 of 6	Ellie Vahman ellie@softcomputer.com	Ellie Vahman ellie@softcomputer.com
	34350 U.S. HWY. 19 NORTH Palm Harbor, FL 34684	34350 U.S. HWY. 19 NOTIN Palm Harbor, Fl. 34684
See accompanying article on page 58	727-789-0100 www.softcomputer.com	727-789-0100 www.softcomputer.com
Name of blood bank system	CoffDook II	SoftDonor
Name of blood bank system		SoftDonor
First ever blood bank system installation	1992	1992
First/most recent installation of <i>current</i> blood bank system	2004/Aug. 2004 107	2004/May 2004 1
•U.S. hospitals—donor and transfusion service	1	1
•U.S. hospitals—transfusion service only	101	0
U.S. regional blood centers—donor service only	0	0
•Centralized transfusion services in the U.S.	0	0
<ul> <li>Foreign hospitals/foreign regional blood centers</li> </ul>	5	0
Total number of sites operational	163	1
Installations underway that are not yet live (hospitals/regional blood centers)	10 (10/0)	3 (3/0)
Percentage of installations that are stand-alone systems	5%	0
Staff to develop/install/support/other* •In entire company/in blood bank systems	317-106-202-346/20-7-13-22	317-106-202-346/20-7-13-22
No. of different versions of software installed	5	3
<ul> <li>Versions of product covered by FDA 510(k) clearance</li> </ul>	SoftBank II 19.1, 21, 22, 23, 23 with SoftScape	SoftDonor 4.1, 4.2, 4.3
Varsians of product that did not require EDA 510/k) clearance	0	0
	<u> </u>	U
Range in No. of terminals/workstations in live sites (ave.)	1–90+ (ave. 8)	1–90+ (ave. 8)
•Contral hardware/computer platform or services	IPM nSorios E620 model 6E1 HD	IPM pSories E620 model 6E1 UD
•Terminals/workstations	PCs or ASCII terminals. Wyse	PCs or ASCII terminals. Wyse
•Central hardware redundant/fault-tolerant?	yes	yes
Software		
Programming language(s)	C	C
•Operating system(s)	Unix AIX	Unix
Database platform     Sult transportion logging?	Centura's Raima-db-Vista	Centura's Raima-db-Vista
	<u>}</u>	
Features (listed as percentage of live installs or based on availability)		
Unit inventory	100%	100%
Autologous and directed unit tracking     Crossmetch results	100%	100%
Crossmatch results     Print donor unit labels—bar coded	100% available in Dec. 2004	not available available in Dec. 2004
•Full support of ISBT 128 unit labeling	70%	installed
Donor recruitment	not available	100%
Donor questionnaire	not available	100%
Mobile scheduling	available in Dec. 2004	available in Dec. 2004
Interface with automated type and screen instruments     Source/recovered plasma management	2% 50%	100%
Bar-code reading of donor and unit information	100%	100%
•Ad hoc report writer	100%	100%
Accounts receivable	95%	100%
Management reports	100%	100%
Direct entry of test results     Electronic proceedate decisionmoking	100%	100% patavailable
Electronic crossmatch decisionmaking     I anton-based mobile donor registration module	70% available in Dec. 2004	not available 100%
•Track all steps in production of product	100%	100%
	100%	100%
Antigen typing	susibility in Dec. 0004	
•Antigen typing •Interface with blood irradiator/centrifuges	available in Dec. 2004	available in Dec. 2004
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand held devices for positive patient ID	available in Dec. 2004 30% evenieble in Dec. 2004	available in Dec. 2004 not available not available
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> </ul>	available in Dec. 2004 30% available in Dec. 2004	available in Dec. 2004 not available not available
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?	available in Dec. 2004 30% available in Dec. 2004 yes	available in Dec. 2004 not available not available yes
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client	available in Dec. 2004 not available not available yes Telnet, local client
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems     Complete blood bank ASP solution?	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems     Complete blood bank ASP solution?     Method of charging for ASP service     Client activate required	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requirements to installed an elient PC	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires asfluers to installed on client BC
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems     Complete blood bank ASP solution?     Method of charging for ASP service     Client software required     ASP information conduit	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems     Complete blood bank ASP solution?     Method of charging for ASP service     Client software required     ASP information conduit	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems     Complete blood bank 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	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by uppder	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet
Antigen typing     Interface with blood irradiator/centrifuges     Centralized transfusion services     Hand-held devices for positive patient ID     System provides standard ASTM/HL7 interface?     Connectivity     Tools to help clients validate their systems     Complete blood bank 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	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet  by vendor
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> </ul> Complete blood bank 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 System provides indexed field in each test definition for LOINC code?	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet — by vendor no
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code?</li> <li>Provide LOINC dictionary for each new installation?</li> </ul>	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no no	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet  by vendor
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<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code?</li> <li>Provide LOINC dictionary for each new installation?</li> </ul>	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no no Meditech, McKesson, Siemens, IDX, Cerner, CPSI, others vendors that support HL7 protocol	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet  by vendor no vendors that support HL7 protocol vendors that support HL7 protocol
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code?</li> <li>Provide LOINC dictionary for each new installation?</li> </ul>	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no no Meditech, McKesson, Siemens, IDX, Cerner, CPSI, others vendors that support HL7 protocol	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet  by vendor no no vendors that support HL7 protocol vendors that support HL7 protocol
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code?</li> <li>Provide LOINC dictionary for each new installation?</li> <li>HIS interfaces</li> <li>LIS interfaces</li> <li>User group?</li> </ul>	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no no Meditech, McKesson, Siemens, IDX, Cerner, CPSI, others vendors that support HL7 protocol yes (meets online as well) escrew	available in Dec. 2004 not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet  by vendor no no vendors that support HL7 protocol vendors that support HL7 protocol yes (meets online as well) escrow
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<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code?</li> <li>Provide LOINC dictionary for each new installation?</li> <li>HIS interfaces</li> <li>LIS interfaces</li> <li>User group?</li> <li>Source code?</li> <li>Can user modify screens?</li> <li>User-defined report writer?/custom programming?</li> <li>Cost (hardware/software/monthly maintenance)</li> <li>Smallest</li> </ul>	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no no Meditech, McKesson, Siemens, IDX, Cerner, CPSI, others vendors that support HL7 protocol yes (meets online as well) escrow no yes/yes	available in Dec. 2004 not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet  by vendor no no vendors that support HL7 protocol vendors that support HL7 protocol yes (meets online as well) escrow no yes/yes \$30k/\$50k/\$1k
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code?</li> <li>Provide LOINC dictionary for each new installation?</li> <li>HIS interfaces</li> <li>LIS interfaces</li> <li>User group?</li> <li>Source code?</li> <li>Can user modify screens?</li> <li>User-defined report writer?/custom programming?</li> <li>Cost (hardware/software/monthly maintenance)</li> <li>Smallest</li> <li>Largest</li> </ul>	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no no Meditech, McKesson, Siemens, IDX, Cerner, CPSI, others vendors that support HL7 protocol yes (meets online as well) escrow no yes/yes \$30k/\$30k/\$0.6k \$75k/\$150k/\$3k	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code?</li> <li>Provide LOINC dictionary for each new installation?</li> <li>HIS interfaces</li> <li>LIS interfaces</li> <li>User group?</li> <li>Source code?</li> <li>Can user modify screens?</li> <li>User-defined report writer?/custom programming?</li> <li>Cost (hardware/software/monthly maintenance)</li> <li>Smallest</li> <li>Largest</li> </ul>	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no no Meditech, McKesson, Siemens, IDX, Cerner, CPSI, others vendors that support HL7 protocol yes (meets online as well) escrow no yes/yes \$30k/\$30k/\$0.6k \$75k/\$150k/\$3k	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet  by vendor no vendors that support HL7 protocol vendors that support HL7 protocol yes (meets online as well) escrow no yes/yes \$30k/\$50k/\$1k \$75k/\$300k/\$6k
<ul> <li>Antigen typing</li> <li>Interface with blood irradiator/centrifuges</li> <li>Centralized transfusion services</li> <li>Hand-held devices for positive patient ID</li> <li>System provides standard ASTM/HL7 interface?</li> <li>Connectivity</li> <li>Tools to help clients validate their systems</li> <li>Complete blood bank ASP solution?</li> <li>Method of charging for ASP service</li> <li>Client software required</li> <li>ASP information conduit</li> <li>Client contracts supported from data center not operated by client</li> <li>How data center is operated</li> <li>System provides indexed field in each test definition for LOINC code?</li> <li>Provide LOINC dictionary for each new installation?</li> <li>HIS interfaces</li> <li>LIS interfaces?</li> <li>User group?</li> <li>Source code?</li> <li>Can user modify screens?</li> <li>User-defined report writer?/custom programming?</li> <li>Cost (hardware/software/monthly maintenance)</li> <li>Smallest</li> <li>Largest</li> <li>Distinguishing features (supplied by vendor)</li> </ul>	available in Dec. 2004 30% available in Dec. 2004 yes Telnet, local client critical control points and instructions on how to write test cases with electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet 1 by vendor no no Meditech, McKesson, Siemens, IDX, Cerner, CPSI, others vendors that support HL7 protocol yes (meets online as well) escrow no yes/yes \$30k/\$30k/\$0.6k \$75k/\$150k/\$3k • interfacing to all major vendors	available in Dec. 2004 not available not available yes Telnet, local client critical control points and instructions on how to write test ca electronic screen capture yes fixed fee requires software be installed on client PC operates over Internet  by vendor no no vendors that support HL7 protocol vendors that support HL7 protocol vendors that support HL7 protocol yes (meets online as well) escrow no yes/yes \$30k/\$50k/\$1k \$75k/\$300k/\$6k • interface with all major vendors • 25 ware of leading elinical coftware colutions

A B		
BIC	ood bank information	n svstems
	Wyndgate Technologies	Wyndgate Technologies
Part 6 of 6	Patti Larson info@wyndgate.com	Patti Larson info@wyndgate.com
	4925 Robert J. Mathews Parkway, Ste. 100	4925 Robert J. Mathews Parkway, Ste. 100
See accompanying article on page 58	EI Dorado Hills, CA 95762 800-WYNDGATE www.wvndgate.com	El Dorado Hills, CA 95762 800-WYNDGATE www.wvndgate.com
	ooo-winduart www.wynugate.com	000-WINDUATE www.wynugate.com
Name of blood bank system	SafeTrace	SafeTrace Tx
First ever blood bank system installation	1996	1996
First/most recent installation of <i>current</i> blood bank system	1996/2004	1999/2004
Total number of contracts for operational sites	36	84
•U.S. hospitals—donor and transfusion service	8	8
•U.S. nospitals—transfusion service only •II.S. regional blood centers—donor service only	U 21	0
•U.S. regional blood centers—donor and transfusion service	6	9
•Centralized transfusion services in the U.S.	0	4
<ul> <li>Foreign hospitals/foreign regional blood centers</li> </ul>	1	2
Total number of sites operational	31	44
Installations underway that are not yet live	5 (3/2)	40 (39/1)
(hospitals/regional blood centers)	1000/	1000/
Percentage of installations that are stand-alone systems	100%	100%
Staff to develop/install/support/other*	17.0.0.10	17.0.0.10
• In entire company/in blood bank systems	17-9-0-19	17-9-0-19
No. of different versions of software installed	2+	2+
<ul> <li>Versions of product covered by FDA 510(k) clearance</li> <li>Versions of product that did not require FDA 510(k) clearance</li> </ul>	all O	all O
Range in No. of terminals/workstations in live sites (ave.)	3–200 (ave. 45)	1-75 (ave. 8)
<ul> <li>Central hardware/computer platform or services</li> </ul>	HP, IBM, Sun	Intel-based servers, Unix-based servers
•Terminals/workstations	PCs	PCs
•Central hardware redundant/fault-tolerant?	yes	yes
Software		
<ul> <li>Programming language(s)</li> </ul>	Delphi, Oracle, PL/SQL, Cold Fusion, C, 4GL	Delphi, SQL
•Operating system(s)	Unix	Windows NT, 2000, Unix optional
Database platform     Sull transaction logging?		Uracle
•run transaction logging?	yes	yes
Features (listed as percentage of live installs or based on availability)		
Unit inventory	100%	100%
Autologous and directed unit tracking	100%	100%
Crossmatch results	not available	100%
Print donor unit labels—bar coded     Full averaged of ICDT 100 unit labeling	100%	installed
Full support of ISB1 128 unit labeling     Denor recruitment	100%	100%
Donor recruitment     Donor guestionnaire	100% not vet available	not available
•Mohile scheduling	100%	not available
<ul> <li>Interface with automated type and screen instruments</li> </ul>	100%	installed
Source/recovered plasma management	installed	not available
<ul> <li>Bar-code reading of donor and unit information</li> </ul>	100%	100%
•Ad hoc report writer	100%	installed
Accounts receivable	not available	not available
Management reports     Direct optimised to the second	100%	100%
Direct entry of test results     Electronic crocomatch decisionmoking	100%	100%
Interconnectorssinated decisioninating     Interconnectors and the decisioninating	installed	not available
•Track all stens in production of product	100%	100%
•Antigen typing	100%	100%
<ul> <li>Interface with blood irradiator/centrifuges</li> </ul>	not yet available	available first quarter 2005
•Centralized transfusion services	not available	5%
<ul> <li>Hand-held devices for positive patient ID</li> </ul>	not available	available through business partners
System provides standard ASTM/HL7 interface?	Ves	Ves
Connectivity	Telnet, remote client	local client, remote client, Web client
Tools to help clients validate their systems	validation guidelines and sample test cases	validation guidelines, templates, validation test plan for s
		control checks
Complete blood bank ASP solution?	yes	yes
Method of charging for ASP service	transaction based	transaction based
Client software required	browser based, uses dumb terminals	browser based
ASP information conduit	operates over Internet, requires use of	operates over Internet, requires use of
Client contracts supported from data contar not encroted by client	private, dedicated circuit	private, dedicated circuit or VPN connection
How data center is operated	z by a third party (Hemo-Net Inc.)	l by a third party (Hemo-Net Inc.)
System provides indexed field in each test definition for LOINC code?	no	70
Provide LOINC dictionary for each new installation?	no	no
HIS interfaces	n/a	CCA CPSI Meditech McKesson Siemens others
LIS interfaces	Misys	CCA, CPSI, Meditech, McKesson, Siemens, others
User group?	yes (meets online as well)	yes (meets online as well)
Source code?	yes (for most modules) <sup>†</sup>	escrow
Can user modify screens?	no veo (veo	
user-defined report writer?/custom programming?	yes/yes	yes (unrougn a unird party)/yes
Cost (hardware/software/monthly maintenance)		
•Smallest	_	_
•Largest	—	
•Largest		
•Largest Distinguishing features (supplied by vendor)	excellent training and implementation services with strong customer focus	<ul> <li>excellent safety and service record with strong custom</li> <li>patent pending for advanced CTS and transfusion service</li> </ul>
•Largest Distinguishing features (supplied by vendor)	excellent training and implementation services with strong customer focus     outstanding record of safety, compliance	<ul> <li>excellent safety and service record with strong custome</li> <li>patent pending for advanced CTS and transfusion service functionality</li> </ul>
•Largest Distinguishing features (supplied by vendor)	excellent training and implementation services with strong customer focus     outstanding record of safety, compliance     complete Vein-to-Vein tracking	excellent safety and service record with strong custon     patent pending for advanced CTS and transfusion serv functionality     comprehensive Vain-to-Vain tracking
•Largest Distinguishing features (supplied by vendor) *other=sales, marketing, administration, other company functions	excellent training and implementation services with strong customer focus     outstanding record of safety, compliance     complete Vein-to-Vein tracking     t escrow for modules not provided to customer	<ul> <li>excellent safety and service record with strong custome</li> <li>patent pending for advanced CTS and transfusion service</li> <li>functionality</li> <li>comprehensive Vein-to-Vein tracking</li> </ul>