



SYSTEM  
REVIEW SERIES

## Blood bank information systems

<b>Part 1 of 6</b>	<b>Blood Bank Computer Systems Inc.</b> Craig Smith csmith@bbcsinc.com 1002 15th St. SW, Ste. 120 Auburn, WA 98001 253-333-0046 www.bbcsinc.com	<b>Cerner Corp.</b> Angela Betts abetts@cerner.com 2800 Rockcreek Parkway Kansas City, MO 64117 816-201-2771 www.cerner.com	<b>Cerner Corp.</b> Angela Betts abetts@cerner.com 2800 Rockcreek Parkway Kansas City, MO 64117 816-201-2771 www.cerner.com
<i>See accompanying article on page 38</i>			
<b>Name of blood bank system</b>	<b>Blood Bank Control System</b>	<b>PathNet Blood Bank Donor†</b>	<b>PathNet Blood Bank Transfusion</b>
First ever blood bank system installation	1987	1985	1985
First/most recent system installation (for current release)	1997/2002	2003/—	1997/2003
Total number of contracts for operational sites	25	—	300+
•U.S. hospitals—donor and transfusion service	0	—	46
•U.S. hospitals—transfusion service only	0	—	300+
•U.S. regional blood centers—donor service only	21	—	0
•U.S. regional blood centers—donor and transfusion service	4	—	4
•Centralized transfusion services in the U.S.	0	—	0
•Foreign hospitals/foreign regional blood centers	0	—	40
Total number of sites operational	25	—	300+
Installations underway that are not yet live (hospitals/regional blood centers)	2 (0/2)	—	15 (15/0)
Percentage of installations that are stand-alone systems	100%	available stand-alone or integrated	<5%
<b>Staff to develop/install/support/other*</b> •In entire company/in blood bank systems <i>*other=sales, marketing, administration, other co. functions</i>	13-2-4-3/—	800+-1,900+-800+-1,300+/15-24-10-15	800+-1,900+-800+-1,300+/15-24-10-15
No. of different versions of software installed	1	—	—
•Versions of product covered by FDA 510(k) clearance	—	Classic, Millennium	Classic, Millennium
•Versions of product that did not require FDA 510(k) clearance	0	n/a	n/a
<b>Range in No. of terminals/workstations in live sites (ave.)</b>	5–150 (ave. 50)	—	5–500+ (ave. 10–20)
•Central hardware/computer platform or services	IBM AS/400, iSeries	Compaq, IBM RS/6000	Compaq, IBM RS/6000
•Terminals/workstations	IBM-compatible workstations and PCs	Intel Pentium PCs	Intel Pentium PCs
•Central hardware redundant/fault-tolerant?	yes	yes	yes
<b>Software</b> •Programming language(s) •Operating system(s) •Database platform •Full transaction logging?	RPG/400, Java IBM OS/400 IBM DB2 yes	Visual Basic, C++, Cobol (Classic) Open VMS, AIX Oracle (Millennium), Cerner proprietary (Classic) yes	Visual Basic, C++, Cobol (Classic) Open VMS, AIX Oracle (Millennium), Cerner proprietary (Classic) yes
<b>Features (listed as a percentage of live installations, or as “installed” if No. of sites operational is unknown, or as “available but no installations,” or “not available”)</b> •Unit inventory •Autologous and directed unit tracking •Crossmatch results •Print donor unit labels—bar coded •Full support of ISBT 128 unit labeling •Donor recruitment •Mobile scheduling •Interface with automated type and screen instruments •Source/recovered plasma management •Bar-code reading wherever donor number is entered •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	100% 100% 15% available but no installations available in 2003 100% 95% 75% 100% 100% 100% 100% 100% 100% 100% 15% 95% 100% 100% —	expected in spring 2004 expected in spring 2004 expected in spring 2004 expected in spring 2004 expected in spring 2004 expected in spring 2004 future development expected in fall 2004 expected in spring 2004 expected in spring 2004 expected in spring 2004 expected in spring 2004 expected in spring 2004 expected in spring 2004 expected in spring 2004 future development expected in spring 2004 expected in spring 2004 not available	100% 100% 100% available in 2004 available in 2004 not available not available 5% not available 100% 100% 15% 100% 80% 30% — 100% 100% not available
<b>System provides standard ASTM/HL7 interface?</b> <b>Connectivity</b> <b>Tools to help clients validate their systems</b>	no local client, remote client separate department dedicated to development of validation protocols, flow charts, 24/7 customer support	yes telnet, local client, remote client solution validation guidelines, support guide, application consultants, others	yes telnet, local client, remote client solution validation guidelines, support guide, application consultants, others
<b>Complete blood bank ASP solution?</b> <b>Method of charging for ASP service</b> <b>Client software required</b>  <b>ASP information conduit</b>  <b>Client contracts supported from data center not operated by client</b> <b>How data center is operated</b>	yes transaction based requires software be installed on client PC, uses dumb terminals operates over Internet, requires use of private, dedicated circuit 4 by a third party (blood bank)	yes fixed fee requires software be installed on client PC  requires use of private, dedicated circuit — by vendor	yes fixed fee requires software be installed on client PC  requires use of private, dedicated circuit 100+† by vendor
<b>System provides indexed field in each test definition for LOINC code?</b> <b>Provide LOINC dictionary for each new installation?</b>	no no	yes yes	yes yes
<b>HIS interfaces</b> <b>LIS interfaces</b>	— —	multiple vendors multiple vendors	multiple vendors multiple vendors
<b>User group?</b> <b>Source code?</b> <b>Can user modify screens?</b> <b>User-defined report writer?/custom programming?</b>	yes (meets online as well) escrow no yes/yes	will form user group escrow yes yes/yes	yes (meets online as well) escrow yes yes/yes
<b>Cost (hardware/software/monthly maintenance)</b> •Smallest •Largest	\$30k/—/— \$30k/—/—	— —	— —
<b>Distinguishing features (supplied by vendor)</b>	• online or integrated electronic donor registration • flexible management controls • user group interaction	• fully integrated with LIS • more than 20 years in market with regulated SW <i>† product received FDA clearance in August 2003</i>	• fully integrated with LIS • more than 20 years in market with regulated SW <i>† includes solutions other than blood bank</i>

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Survey editor: Raymond D. Aller, MD





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# Blood bank information systems

Part 2 of 6	Information Data Management Inc. Susan L. McBride slm@idm.com 9701 W. Higgins Rd., Ste. 500 Rosemont, IL 60018 800-249-4276/847-825-2300 www.idm.com	Information Data Management Inc. Susan L. McBride slm@idm.com 9701 W. Higgins Rd., Ste. 500 Rosemont, IL 60018 800-249-4276/847-825-2300 www.idm.com	Mak-System Corp. Stephane Sajot s.sajot@mak-system.net 2720 River Rd., Ste. 225 Des Plaines, IL 60018 847-803-4863 www.mak-system.com
See accompanying article on page 38			
Name of blood bank system	IDM Select Series for Blood Centers	PCMS: Plasma Center Management System	Progesa
First ever blood bank system installation	1991	1991	1985
First/most recent system installation (for current release)	1999/2002	2000/2000	1985/2003
Total number of contracts for operational sites	8	1	485
•U.S. hospitals—donor and transfusion service	0	—	0
•U.S. hospitals—transfusion service only	0	—	0
•U.S. regional blood centers—donor service only	7	—	4
•U.S. regional blood centers—donor and transfusion service	0	—	0
•Centralized transfusion services in the U.S.	0	—	0
•Foreign hospitals/foreign regional blood centers	1 (Hong Kong)	—	481
Total number of sites operational	8	1	—
Installations underway that are not yet live (hospitals/regional blood centers)	0	0	15 (10/5)
Percentage of installations that are stand-alone systems	100%	100%	100%
Staff to develop/install/support/other* •In entire company/in blood bank systems *other=sales, marketing, administration, other co. functions	26-8-17-11/—	26-8-17-11/—	92-38-45-55/—
No. of different versions of software installed	3	1	—
•Versions of product covered by FDA 510(k) clearance	—	—	4.4
•Versions of product that did not require FDA 510(k) clearance	DMIS 1.2.2, CDIS 1.1.2, InTouch 1.5	PCMS 1.4	—
Range in No. of terminals/workstations in live sites (ave.)	4–80 (ave. 30)	5–300 (ave. 150)	10–1,000 (ave. 100)
•Central hardware/computer platform or services	HP NetServers, HP 9000 business servers	HP NetServers, HP 9000 business servers	no restrictions (any hardware with Unix)
•Terminals/workstations	Unix terminals/X-terminals, PCs, workstations	Unix terminals/X-terminals, PCs, workstations	Wyse, HP, IBM, DEC, PCs
•Central hardware redundant/fault-tolerant?	yes	yes	yes
Software			
•Programming language(s)	Java, C++, C	Java, C	C, C++, Pro/5, Java
•Operating system(s)	Unix	Unix	Unix
•Database platform	Oracle	Oracle	Oracle, C-ISAM
•Full transaction logging?	yes	yes	yes
Features (listed as a percentage of live installations, or as “installed” if No. of sites operational is unknown, or as “available but no installations,” or “not available”)			
•Unit inventory	100%	100%	100%
•Autologous and directed unit tracking	100%	not available	100%
•Crossmatch results	not available	not available	100%
•Print donor unit labels—bar coded	100%	100%	100%
•Full support of ISBT 128 unit labeling	not available	available in 2004	4 sites
•Donor recruitment	100%	not available	100%
•Mobile scheduling	100%	not available	100%
•Interface with automated type and screen instruments	not available	not available	—
•Source/recovered plasma management	100%	100%	100%
•Bar-code reading wherever donor number is entered	100%	100%	100%
•Ad hoc report writer	100%	100%	100%
•Accounts receivable	not available	not available	100%
•Management reports	100%	100%	100%
•Direct entry of test results	100%	100%	—
•Electronic crossmatch decisionmaking	not available	not available	—
•Laptop-based mobile donor registration module	not available	not available	100%
•Track all steps in production of product	100%	100%	—
•Antigen typing	100%	100%	—
•Interface with blood irradiator/centrifuges	not available	not available	—
System provides standard ASTM/HL7 interface?	no	no	yes
Connectivity	telnet, remote client, other	telnet, remote client, other	telnet, Web client
Tools to help clients validate their systems	product user manuals, product validation guide, configuration workshops, automated testing tools, training classes and materials, more	product user manuals, product validation guide, configuration workshops, automated testing tools, training classes and materials, more	user guides, hazard analysis, training manuals, data conversion, validation scenario samples
Complete blood bank ASP solution?	yes	yes	no
Method of charging for ASP service	fixed fee	fixed fee	—
Client software required	uses dumb terminals	uses dumb terminals	—
ASP information conduit	requires use of private, dedicated circuit and virtual private network	requires use of private, dedicated circuit and virtual private network	—
Client contracts supported from data center not operated by client	0	0	—
How data center is operated	by vendor	by vendor	—
System provides indexed field in each test definition for LOINC code?	no	no	no
Provide LOINC dictionary for each new installation?	no	no	no
HIS interfaces	n/a	n/a	any type
LIS interfaces	ARC DMS, IDM DMS, IDM Surround	IDM DMS, IDM Surround	any type
User group?	yes	no	yes (meets online as well)
Source code?	escrow	escrow	escrow
Can user modify screens?	no	no	no
User-defined report writer?/custom programming?	yes/yes	yes/yes	—
Cost (hardware/software/monthly maintenance)			
•Smallest	—	—	—
•Largest	—	—	—
Distinguishing features (supplied by vendor)	• over two decades of experience in regulated software • 24/7 customer support services • large customer base and financial stability	• over two decades of experience in regulated software • 24/7 customer support services • large customer base and financial stability	• Mak-System consists of blood bank professionals and physicians • modular, integrated application with abundant functionality

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# Blood bank information systems

<b>Part 3 of 6</b>  <i>See accompanying article on page 38</i>	<b>Meditech Inc.</b> Paul Berthiaume pberthiaume@meditech.com Meditech Circle Westwood, MA 02090 781-821-3000 www.meditech.com	<b>Meditech Inc.</b> Paul Berthiaume pberthiaume@meditech.com Meditech Circle Westwood, MA 02090 781-821-3000 www.meditech.com	<b>Mediware Information Systems Inc.</b> Joe Tehan joe.tehan@mediware.com 4545 Fuller Drive, Ste. 360 Irving, TX 75038 972-536-2909 www.mediware.com
<b>Name of blood bank system</b>	<b>Meditech Blood Bank (client/server)</b>	<b>Meditech Blood Bank (Magic)</b>	<b>Hemocare</b>
First ever blood bank system installation	1981	1981	1978
First/most recent system installation (for current release)	2001/2003	2000/2003	—
Total number of contracts for operational sites	114	835	253
•U.S. hospitals—donor and transfusion service	4	54	—
•U.S. hospitals—transfusion service only	110	765	—
•U.S. regional blood centers—donor service only	0	16	—
•U.S. regional blood centers—donor and transfusion service	0	0	—
•Centralized transfusion services in the U.S.	0	0	—
•Foreign hospitals/foreign regional blood centers	0	0	—
Total number of sites operational	111	832	253
Installations underway that are not yet live (hospitals/regional blood centers)	3 (3/0)	3 (3/0)	24
Percentage of installations that are stand-alone systems	0	0	100%
<b>Staff to develop/install/support/other*</b> •In entire company/in blood bank systems <i>*other=sales, marketing, administration, other co. functions</i>	2,058 total	2,058 total	39-26-41-69/19-8-21-23
No. of different versions of software installed	2	2	3
•Versions of product covered by FDA 510(k) clearance	Magic, client/server	Magic, client/server	—
•Versions of product that did not require FDA 510(k) clearance	—	—	—
<b>Range in No. of terminals/workstations in live sites (ave.)</b>	—	—	1–60 (ave. 16)
•Central hardware/computer platform or services	HP, Dell, EMC, IBM	HP, Dell, EMC, IBM	IBM RS/6000, Intel Pentium
•Terminals/workstations	HP, Dell, EMC, IBM	HP, Dell, EMC, IBM	PCs, any ANSI/VT 100-compatible terminals
•Central hardware redundant/fault-tolerant?	yes	yes	yes
<b>Software</b> •Programming language(s) •Operating system(s) •Database platform •Full transaction logging?	Windows NT Windows NT SQL server yes	Magic Magic Magic yes	C Unix ISAM File Handler yes
<b>Features (listed as a percentage of live installations, or as “installed” if No. of sites operational is unknown, or as “available but no installations,” or “not available”)</b> •Unit inventory •Autologous and directed unit tracking •Crossmatch results •Print donor unit labels—bar coded •Full support of ISBT 128 unit labeling •Donor recruitment •Mobile scheduling •Interface with automated type and screen instruments •Source/recovered plasma management •Bar-code reading wherever donor number is entered •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 available but no installations installed available but no installations available but no installations installed installed installed installed installed installed installed available but no installations installed installed not available	installed installed installed installed available but no installations available but no installations available but no installations installed installed installed installed installed installed available but no installations installed installed not available	100% 100% 100% 100% not available 35% not available not available 100% 100% 60% 100% 100% 75% not available — available but no installations not available
<b>System provides standard ASTM/HL7 interface?</b> <b>Connectivity</b> <b>Tools to help clients validate their systems</b>	— local client, remote client, Web client, other comprehensive validation manual, application consultants	yes telnet, local & remote client, Web client, other comprehensive validation manual, application consultants	yes — validation primer, validation templates, training, test scripts, validation services
<b>Complete blood bank ASP solution?</b> <b>Method of charging for ASP service</b> <b>Client software required</b> <b>ASP information conduit</b> <b>Client contracts supported from data center not operated by client</b> <b>How data center is operated</b>	no — — — — —	no — — — — —	no — — — — —
<b>System provides indexed field in each test definition for LOINC code?</b> <b>Provide LOINC dictionary for each new installation?</b>	yes no	yes no	no no
<b>HIS interfaces</b> <b>LIS interfaces</b>	Cerner, Siemens, McKesson, others Cerner, Misys, others	Cerner, Siemens, McKesson, others Cerner, Misys, others	McKesson, Siemens, HDS, TDS McKesson, Siemens, Cerner, NLFC, CCA, others
<b>User group?</b> <b>Source code?</b> <b>Can user modify screens?</b> <b>User-defined report writer?/custom programming?</b>	yes (meets online as well) yes yes yes/no	yes (meets online as well) yes yes yes/no	yes (meets online as well) escrow no yes/yes
<b>Cost (hardware/software/monthly maintenance)</b> •Smallest •Largest	— —	— —	\$10k/\$20k/\$0.5k \$100k/\$300k/\$7k
<b>Distinguishing features (supplied by vendor)</b>	• fully integrated applications • developed 100% in-house by Meditech • 34 years of LIS experience	• fully integrated applications • developed 100% in-house by Meditech • 34 years of LIS experience	• financial stability • over 20 years in market with large user base • all service, installation, and support conducted by blood banker

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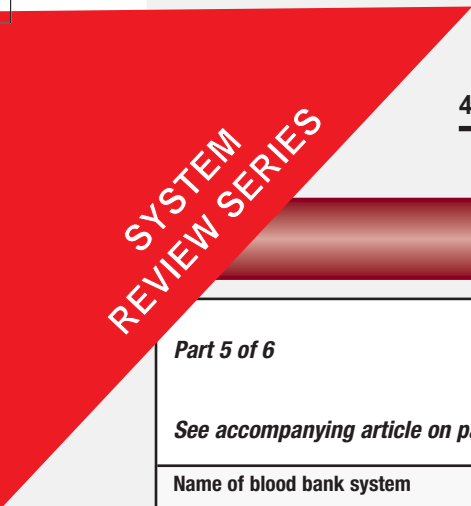
# Blood bank information systems

<b>Part 4 of 6</b>	<b>Mediware Information Systems Inc.</b> Joe Tehan joe.tehan@mediware.com 4545 Fuller Drive, Ste. 360 Irving, TX 75038 972-536-2909 www.mediware.com	<b>Mediware Information Systems Inc.</b> Joe Tehan joe.tehan@mediware.com 4545 Fuller Drive, Ste. 360 Irving, TX 75038 972-536-2909 www.mediware.com	<b>Mediware Information Systems Inc.</b> Joe Tehan joe.tehan@mediware.com 4545 Fuller Drive, Ste. 360 Irving, TX 75038 972-536-2909 www.mediware.com
<i>See accompanying article on page 38</i>			
<b>Name of blood bank system</b>	<b>Hemocare LifeLine (HCLL)</b>	<b>LifeLine Blood Bank Data Management System</b>	<b>LifeTrak</b>
First ever blood bank system installation	1978	1978	1978
First/most recent system installation (for current release)	—	2000/2002	1999/2003
Total number of contracts for operational sites	2	180	5
•U.S. hospitals—donor and transfusion service	0	—	—
•U.S. hospitals—transfusion service only	2	—	—
•U.S. regional blood centers—donor service only	0	—	—
•U.S. regional blood centers—donor and transfusion service	0	—	—
•Centralized transfusion services in the U.S.	0	—	—
•Foreign hospitals/foreign regional blood centers	0	—	—
Total number of sites operational	2†	180	6
Installations underway that are not yet live (hospitals/regional blood centers)	—†	—	2 (0/2)
Percentage of installations that are stand-alone systems	100%	100%	100%
<b>Staff to develop/install/support/other*</b> •In entire company/in blood bank systems <i>*other=sales, marketing, administration, other co. functions</i>	39-26-41-69/19-8-21-23	39-26-41-69/19-8-21-23	39-26-41-69/19-8-21-23
No. of different versions of software installed	1	2	2
•Versions of product covered by FDA 510(k) clearance	v. 2.5	—	—
•Versions of product that did not require FDA 510(k) clearance	n/a	—	n/a
<b>Range in No. of terminals/workstations in live sites (ave.)</b>	<b>1–8</b>	<b>1–36 (ave. 6)</b>	<b>12–60 (ave. 30)</b>
•Central hardware/computer platform or services	Dell, Compaq models qualified, models based on user configuration	PC server—Compaq, HP, others	HP 9000 series, Intel-based servers
•Terminals/workstations	PC—Gateway, Micron qualified	PC—Compaq, HP, others	PCs
•Central hardware redundant/fault-tolerant?	yes	yes	yes
<b>Software</b> •Programming language(s) •Operating system(s)	Visual C++, VB w/component architecture Windows 2000 server, 2000 advance server, workstations—2000 Professional	Quick Basic Novell, NT	Oracle Developer 2000, PL/SQL HP-UX, Linux
•Database platform	SQL server 2000, Seagate Crystal Reports 8.0	Btrieve	Oracle
•Full transaction logging?	yes	no	yes
<b>Features (listed as a percentage of live installations, or as “installed” if No. of sites operational is unknown, or as “available but no installations,” or “not available”)</b>			
•Unit inventory	installed	100%	80%
•Autologous and directed unit tracking	installed	100%	80%
•Crossmatch results	installed	100%	not available
•Print donor unit labels—bar coded	installed	not available	80%
•Full support of ISBT 128 unit labeling	installed	100%	—
•Donor recruitment	not available	40%	80%
•Mobile scheduling	not available	30%	60%
•Interface with automated type and screen instruments	not available	—	100%
•Source/recovered plasma management	not available	—	80%
•Bar-code reading wherever donor number is entered	installed	100%	80%
•Ad hoc report writer	installed	75%	installed
•Accounts receivable	—	not available	not available
•Management reports	installed	100%	100%
•Direct entry of test results	—	—	—
•Electronic crossmatch decisionmaking	installed	not available	not available
•Laptop-based mobile donor registration module	not available	30%	installed
•Track all steps in production of product	installed	100%	100%
•Antigen typing	installed	100%	installed
•Interface with blood irradiator/centrifuges	not available	not available	not available
<b>System provides standard ASTM/HL7 interface?</b>	<b>yes</b>	<b>yes</b>	<b>—</b>
<b>Connectivity</b>	<b>telnet, local client, remote client</b>	<b>local client, remote client</b>	<b>telnet, local client, remote client</b>
<b>Tools to help clients validate their systems</b>	<b>validation scripts, consultation services</b>	<b>test templates and scripts</b>	<b>telephone support, contracted services, validation templates</b>
<b>Complete blood bank ASP solution?</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Method of charging for ASP service</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>Client software required</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>ASP information conduit</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>Client contracts supported from data center not operated by client</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>How data center is operated</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>System provides indexed field in each test definition for LOINC code?</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Provide LOINC dictionary for each new installation?</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>HIS interfaces</b>	<b>any vendor that supports HL7 protocol</b>	<b>Siemens, Misys, McKesson, Cerner, SCC, others</b>	<b>none</b>
<b>LIS interfaces</b>	<b>any vendor that supports HL7 protocol</b>	<b>Siemens, Misys, McKesson, Cerner, SCC, others</b>	<b>—</b>
<b>User group?</b>	<b>yes</b>	<b>yes</b>	<b>yes</b>
<b>Source code?</b>	<b>escrow</b>	<b>escrow</b>	<b>escrow</b>
<b>Can user modify screens?</b>	<b>yes</b>	<b>yes</b>	<b>no</b>
<b>User-defined report writer?/custom programming?</b>	<b>yes/yes</b>	<b>yes/yes</b>	<b>yes/no</b>
<b>Cost (hardware/software/monthly maintenance)</b>			
•Smallest	\$10k/\$35k/\$0.8k	\$8k/\$20k/\$0.5k	\$15k/\$50k/\$2.7k
•Largest	\$80k/\$300k/\$7k	\$75k/\$100k/\$2k	\$250k/\$700k/\$32k
<b>Distinguishing features (supplied by vendor)</b>	• real-time patient, inventory & testing monitors • online exception report and investigation documentation <i>† two installations expected to be live at press time</i>	• no downtime backup • integrated module • online patient, donor, unit history	• cGMP/manufacturing and process control to ensure product safety • fully featured Windows-based donor application

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Blood bank information systems

Part 5 of 6	Misys Healthcare Ken Kark ken.kark@misyshealthcare.com 4801 E. Broadway Blvd. Tucson, AZ 85711 520-570-2000 www.misyshealthcare.com	Misys Healthcare Ken Kark ken.kark@misyshealthcare.com 4801 E. Broadway Blvd. Tucson, AZ 85711 520-570-2000 www.misyshealthcare.com	Psyche Systems Corp. Patricia Salem pattys@psychesystems.com 321 Fortune Blvd. Milford, MA 01757 800-345-1514 www.psychesystems.com
See accompanying article on page 38			
Name of blood bank system	Misys Blood Bank–Donor	Misys Blood Bank–Transfusion	LabWeb–SBB
First ever blood bank system installation	1985	1985	1975
First/most recent system installation (for current release)	2001/2003	2001/2003	1975/2003
Total number of contracts for operational sites	38	392	6
•U.S. hospitals—donor and transfusion service	—	40	0
•U.S. hospitals—transfusion service only	—	352	6
•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.	—	0	0
•Foreign hospitals/foreign regional blood centers	—	9	0
Total number of sites operational	38	377	6
Installations underway that are not yet live (hospitals/regional blood centers)	2 (2/0)	15 (15/0)	4 (4/0)
Percentage of installations that are stand-alone systems	0	0	0
Staff to develop/install/support/other* •In entire company/in blood bank systems *other=sales, marketing, administration, other co. functions	400-430†-175/8-4-6-2	400-430†-175/8-4-6-2	9-15-10-6/4-8-5-3
No. of different versions of software installed	1	1	1
•Versions of product covered by FDA 510(k) clearance	—	—	SBB v. 6.4
•Versions of product that did not require FDA 510(k) clearance	0	—	n/a
Range in No. of terminals/workstations in live sites (ave.)	4–500+ (ave. 15–20)	4–500+ (ave. 15–20)	2–20 (ave. 6)
•Central hardware/computer platform or services	HP Alpha, IBM RS/6000	HP Alpha, IBM RS/6000	HP Alpha server
•Terminals/workstations	PCs, terminals	PCs, terminals	Windows compatible
•Central hardware redundant/fault-tolerant?	on request	on request	yes
Software			
•Programming language(s)	Open M, Caché, C, C++	Open M, Caché, C, C++	Fortran
•Operating system(s)	DEC Unix, Open VMS, AIX	DEC Unix, Open VMS, AIX	Open VMS
•Database platform	Intersystems M, Caché	Intersystems M, Caché	Oracle/SQL server
•Full transaction logging?	yes	yes	yes
Features (listed as a percentage of live installations, or as “installed” if No. of sites operational is unknown, or as “available but no installations,” or “not available”)			
•Unit inventory	100%	100%	100%
•Autologous and directed unit tracking	100%	100%	100%
•Crossmatch results	100%	100%	100%
•Print donor unit labels—bar coded	not available	not available	100%
•Full support of ISBT 128 unit labeling	100%	100%	100%
•Donor recruitment	15%	15%	not available
•Mobile scheduling	not available	not available	not available
•Interface with automated type and screen instruments	available in 2003	available in 2003	not available
•Source/recovered plasma management	100%	100%	not available
•Bar-code reading wherever donor number is entered	100%	100%	100%
•Ad hoc report writer	100%	100%	100%
•Accounts receivable	100% (charge capture)	100% (charge capture)	not available
•Management reports	100%	100%	100%
•Direct entry of test results	—	—	100%
•Electronic crossmatch decisionmaking	available in 2003	available in 2003	100%
•Laptop-based mobile donor registration module	not available	not available	not available
•Track all steps in production of product	100%	100%	100%
•Antigen typing	100%	100%	100%
•Interface with blood irradiator/centrifuges	not available	not available	not available
System provides standard ASTM/HL7 interface?	yes	yes	yes
Connectivity	telnet, local client, remote client	telnet, local client, remote client	telnet, local client, remote client
Tools to help clients validate their systems	validation protocols and guidelines, Misys Healthcare Consulting	validation protocols and guidelines, Misys Healthcare Consulting	documentation, training
Complete blood bank ASP solution?	no	no	yes
Method of charging for ASP service	—	—	fixed fee
Client software required	—	—	browser based
ASP information conduit	—	—	operates over Internet, requires use of private, dedicated circuit
Client contracts supported from data center not operated by client	—	—	2
How data center is operated	—	—	by vendor
System provides indexed field in each test definition for LOINC code?	no	no	yes
Provide LOINC dictionary for each new installation?	—	—	no
HIS interfaces	McKesson, Meditech, IDX, Cerner, Eclipsys, others	McKesson, Meditech, IDX, Cerner, Eclipsys, others	Meditech, Siemens, McKesson, Misys, others
LIS interfaces	n/a	n/a	LabWeb
User group?	yes (meets online as well)	yes (meets online as well)	yes
Source code?	escrow	escrow	escrow
Can user modify screens?	no	no	yes
User-defined report writer?/custom programming?	yes/yes	yes/yes	yes/no
Cost (hardware/software/monthly maintenance)			
•Smallest	\$50k/\$100k/\$1.5k	\$50k/\$100k/\$1.5k	\$10k/\$10k/\$0.15k
•Largest	\$100k/\$250k/\$4k+	\$100k/\$250k/\$4k+	\$100k/\$50k/\$0.5k
Distinguishing features (supplied by vendor)	• integrated with Misys Laboratory • standard blood bank reports w/lab data integrated • proactive utilization reports  † installation and support combined	• integrated with Misys Laboratory—includes display of results • standard blood bank reports w/lab data integrated • proactive utilization reports  † installation and support combined	• complete hosting system for all lab departments • stand-alone offering • customizable browser user interface

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SYSTEM  
REVIEW SERIES

## Blood bank information systems

Part 6 of 6	SCC Soft Computer Ellie Vahman ellie@softcomputer.com 34350 U.S. Hwy. 19 North Palm Harbor, FL 34684 727-789-0100 www.softcomputer.com	Wyndgate Technologies Patti Larson patti@wyndgate.com 4925 Robert J. Mathews Parkway, Ste. 100 El Dorado Hills, CA 95762 800-WYNDGATE www.wyndgate.com	Wyndgate Technologies Patti Larson patti@wyndgate.com 4925 Robert J. Mathews Parkway, Ste. 100 El Dorado Hills, CA 95762 800-WYNDGATE www.wyndgate.com
	See accompanying article on page 38		
Name of blood bank system	SoftBank II	SafeTrace	SafeTrace Tx
First ever blood bank system installation	1992	1996	1996
First/most recent system installation (for current release)	2003/2003	1996/2003	1999/2003
Total number of contracts for operational sites	107	32	57
•U.S. hospitals—donor and transfusion service	0	5	5
•U.S. hospitals—transfusion service only	101	0	41
•U.S. regional blood centers—donor service only	0	19	0
•U.S. regional blood centers—donor and transfusion service	0	8	6
•Centralized transfusion services in the U.S.	0	0	4
•Foreign hospitals/foreign regional blood centers	6	0	1
Total number of sites operational	143	31	33
Installations underway that are not yet live (hospitals/regional blood centers)	17 (17/0)	1 (0/1)	24 (19/5)
Percentage of installations that are stand-alone systems	2.7%	100%	100%
Staff to develop/install/support/other* •In entire company/in blood bank systems *other=sales, marketing, administration, other co. functions	435-84-215-161/15-5-5-2	17-9-6-19/—	17-9-6-19/—
No. of different versions of software installed •Versions of product covered by FDA 510(k) clearance •Versions of product that did not require FDA 510(k) clearance	3 SoftBank II v. 19.1, 22, 23 none	— all none	— all none
Range in No. of terminals/workstations in live sites (ave.)	1–90+ (ave. 8)	3–200 (ave. 45)	1–75 (ave. 8)
•Central hardware/computer platform or services •Terminals/workstations •Central hardware redundant/fault-tolerant?	IBM pSeries F620 model 6F1, HP PCs or ASCII terminals, Wyse yes	HP, IBM, Sun PCs, dumb terminals yes	Intel-based servers PCs yes
Software •Programming language(s) •Operating system(s) •Database platform •Full transaction logging?	C Unix Centura’s Raima-db-Vista yes	Delphi, Oracle, PL/SQL, Cold Fusion, C++ Unix Oracle RDBMS yes	Delphi, SQL Windows NT, 2000 Oracle yes
Features (listed as a percentage of live installations, or as “installed” if No. of sites operational is unknown, or as “available but no installations,” or “not available”) •Unit inventory •Autologous and directed unit tracking •Crossmatch results •Print donor unit labels—bar coded •Full support of ISBT 128 unit labeling •Donor recruitment •Mobile scheduling •Interface with automated type and screen instruments •Source/recovered plasma management •Bar-code reading wherever donor number is entered •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	100% 100% 100% 100% 70% 100% not available 2% — 100% 100% 95% 100% 100% 70% — 100% 100% available in Dec. 2003	100% 100% not available installed installed installed installed 100% installed installed 100% installed not available installed 100% 100% not available 100% 100% not available	100% 100% 100% installed installed not available not available installed not available 100% installed not available 100% 100% installed not available 100% 100% not available
System provides standard ASTM/HL7 interface? Connectivity Tools to help clients validate their systems	yes telnet, local client critical central points and instructions on how to write test cases w/ electronic screen capture	yes remote client validation plan for all safety critical checks, sample test cases	yes local client, remote client validation guide, templates, validation test plan for safety critical control checks
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	yes fixed fee requires software be installed on client PC  operates over Internet  1 by vendor	yes transaction based requires software be installed on client PC, uses dumb terminals operates over Internet, requires use of private, dedicated circuit or VPN connection 1 by a third party (Hemo-Net)	yes transaction based browser based  operates over Internet, requires use of private, dedicated circuit or VPN connection 0 —
System provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	no no	no no	no no
HIS interfaces LIS interfaces	Meditech, McKesson, Siemens, IDX, CPSI, others SCC, McKesson, Meditech, Misys, Cerner, others	n/a n/a	CCA, Keane, Meditech, McKesson, others CCA, CPSI, Meditech, McKesson, Siemens, others
User group? Source code? Can user modify screens? User-defined report writer?/custom programming?	yes (meets online as well) escrow no yes/yes	yes (meets online as well) escrow no yes/yes	yes (meets online as well) escrow no yes/yes
Cost (hardware/software/monthly maintenance) •Smallest •Largest	\$30k/\$30k/\$0.6k \$75k/\$150k/\$3k	— —	— —
Distinguishing features (supplied by vendor)	• unit recall documentation • electronic crossmatch • multi-site inventory	• outstanding record of safety, compliance • complete Vein-to-Vein tracking • excellent training and implementation services	• patent pending for advanced CTS and transfusion service functionality • comprehensive Vein-to-Vein tracking • excellent safety, compliance & service record

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