

Greater New York Hospital Association
Hospital Information Technology
Survey Report

January 2006

GNYHA Information Technology Survey

Section 1. Respondent Information

Forty hospitals and health systems responded to GNYHA’s Hospital Information Technology survey. Eleven of the respondents were health systems and, as a result, 74 individual hospitals are represented in the survey findings noted within this report. For the purposes of tabulation, please note that responses were analyzed in one of three different formats depending upon the content of the question. These analysis formats are clearly noted within the data table for each question and are as follows:

- By number of respondents–responses were analyzed based upon the number of responding hospitals or hospital systems (n=40). This method was often employed when respondents were asked to select more than one answer from a list of options.
- Broken down by hospital and health system response–responses were analyzed based upon the number of respondents (n=40) and are presented in two categories, one for individual hospital respondents and one for health system respondents.
- By number of hospitals–responses analyzed based upon the total number of hospitals (n=74) represented by survey responses. This method was only employed in Section 8 on IT Budget and this section provides a detailed explanation of the analysis methodology.

Section 2. Information Systems Security

4. Has your organization appointed a Security Officer?

Ninety percent of hospital respondents and 82% of health system respondents noted that they have appointed a Security Officer as outlined in the HIPAA Security Rule.

	Number	Percentage	Number	Percentage
	Hospitals		Health Systems	
Yes	26	90%	9	82%
No	3	10%	1	9%
No Response	0	0%	1	9%

5. Does your organization have an information technology security committee or equivalent?

Nearly 70% of individual hospitals noted that they have information technology security committee or equivalent structure, but only 45% of health systems noted that they employ a similar committee structure.

	Number	Percentage	Number	Percentage
	Hospitals		Health Systems	
Yes	20	69%	5	45%
No	9	31%	5	45%
No Response	0	0%	1	9%

6. If yes, who serves on the information technology security committee? (Check all that apply.)

(Responses tabulated by number of respondents (n=40))

Committee members	Number of times selected
Security Officer	21
Chief Information Officer	20
Department Administrator(s)	15
General Counsel	8
Director of Physical Security	7
Chief Operating Officer	7
Privacy Officer	6
Chief Medical Informatics Officer	4
Compliance Officer	3
Human Resources	3
Director of Biomedical Engineering	2
Director of HIM	2

7. How many staff have defined information technology security responsibilities?

Seventy six percent of hospitals and 82% of health systems report having five or fewer FTE's with defined information technology security responsibilities.

	Number	Percentage	Number	Percentage
	Hospitals		Health Systems	
1-2 FTE's	11	38%	3	27%
3-5 FTE's	11	38%	6	55%
6-10 FTE's	4	14%	1	9%
More than 10 FTE's	0	0%	0	0%
N/A or no response	3	10%	1	9%

8. How much has your institution budgeted for information technology security in 2005?

Please note that ten respondents noted that this question was not applicable or did not provide a response to this question and another four respondents reported that their institution's 2005 security budget was zero.

	Hospital	Health System
Mean budget	\$562,093	\$1,114,286
Median budget	\$100,000	\$600,000
Number with no response	7	3
Number reporting \$0	3	1

9. Please indicate below what security tools your institution is using or plans to install. (Check all that apply.)

As you might expect, nearly all respondents reported that they currently employ firewalls and user access controls. Respondents noted that disaster recovery was a high priority for the next two years. Other security tools that individual hospitals noted that they plan to install within two years include: security tokens, packet inspection for compliance rules, encrypted email system, biometric identification, and single sign-on. *(Please note that because hospitals may be adding security functionality to additional applications or networks, a hospital might have checked both that they are currently using a security tool and that they plan to install the same security tool within two years.)*

Security Tool	Currently Using	Plan to install within 2 years
Firewalls	38	5
User access controls	34	5
Off-site storage	29	8
Multi-level pass codes	30	8
Audit logs	30	8
Data encryption	29	8
Disaster recovery	26	12
Electronic signature	19	8

10. Please indicate whether your organization is currently using or plans to install any of the following information security hardware or software. (Check all that apply.)

As you might expect, all respondents use anti-virus software and nearly all employ virtual private networks. Notably, single sign-on and wireless security products were the most frequently selected security hardware or software slated for installation in the next two years.

Security Hardware or Software	Currently Using	Plan to install within 2 years
Anti-virus desktop/server software	40	6
Biometrics systems	5	14
Information security audit tools	23	14
Digital identity management software	2	11
Intrusion detection systems	19	12
Public key infrastructure	9	7
Token-based authentication mechanisms	8	4
Single sign-on solutions	5	23
Spam filtering software	35	6
Virtual private networks	38	6
Wireless security products	25	19

11. Does your organization *currently encrypt* or *plan to encrypt* data and e-mail when transmitted inside and/or outside of your organization?

Despite the addressable encryption implementation specification contained within the HIPAA Security Rule, less than half of respondents noted that they employ any type of encryption for email. Other responses to this question include: only specific email going outside is now encrypted, not all; password protecting attachments; and limit encryption to messaging systems for Protected Health Information data.

Encryption status	Currently encrypting	Plan to encrypt within two years
Yes, only for data/e-mail sent <i>within</i> our organization	6	2
Yes, only for data/e-mail sent <i>outside</i> our organization	10	12
Yes, both transmissions within the organization and outside the organization	3	9
No	6	0
Not applicable or no response	13	16
Other (specify)	2	1

Section 3. Hospital Information Systems

12. Please note the operational status, vendor, and application name for the information system in each of the following departments or functional areas:

For each of the following responses, GNYHA has included both the actual number of responses in each category and, for operational status and number of years since installation, also calculated those responses as a percent of the total. All responses were calculated by the number of respondents (n=40) and are not broken down by hospital and health system categories.

For established clinical information systems such as laboratory (87.5%), radiology (80%), pharmacy (75%), and pathology (75%), the great majority of respondents reported fully operational systems.

For less established clinical information systems such as computerized provider order entry (CPOE) (30%), electronic medical records (22.5%), and clinical decision support (12.5%), a minority of respondents reported fully operational systems. It is worth noting, however, that for all three systems, roughly another 50% of respondents reported either a partially operational system or plans to install within two years.

Department/ Functional area	Operational status	Vendor name	Number of years since initial installation
Registration/ADT System	Fully operational 33 82.5%	Siemens 14	<1 year 1 2.5%
	Partially operational 0 0.0%	McKesson 5	1-3 years 2 5.0%
	Plan to implement within 2 years 0 0.0%	IDX 3	4-6 years 8 20.0%
	No plans to implement 0 0.0%	Meditech 2	7-9 years 6 15.0%
	No Response 7 17.5%	Cerner 1	10+ years 14 35.0%
		Eclipsys 1	No Response 9 22.5%
		HCS 1	
		McKesson/ HBOC 1	
		Quadramed 1	
		VISTA 1	
	No Response 7		
Inpatient Clinical Information System	Fully operational 20 50.0%	Eclipsys 8	<1 year 2 5.0%
	Partially operational 7 17.5%	Siemens 7	1-3 years 4 10.0%
	Plan to implement within 2 years 5 12.5%	IDX 3	4-6 years 7 17.5%
	No plans to implement 1 2.5%	McKesson 2	7-9 years 7 17.5%
	No Response 7 17.5%	Meditech 2	10+ years 6 15.0%
		MISYS 2	N/A or No Response 14 35.0%
		Cerner 1	
		VISTA 1	
		In House Developed 1	
		N/A or No Response 10	

Ambulatory Clinical Information System	Fully operational	10	25.0%	Eclipsys	4	<1 year	1	2.5%
	Partially operational	10	25.0%	Meditech	3	1-3 years	4	10.0%
	Plan to implement within 2 years	6	15.0%	Cerner	2	4-6 years	5	12.5%
	No plans to implement	6	15.0%	EPIC	2	7-9 years	2	5.0%
	No Response	8	20.0%	IDX	2	10+ years	4	10.0%
				MISYS	2	N/A or No Response	24	60.0%
				Siemens	2			
				GE	1			
				McKesson	1			
				Nextgen	1			
				VISTA	1			
				In House Developed	1			
				N/A or No Response	15			
Clinical Data Repository	Fully operational	15	37.5%	In House Developed	4	<1 year	2	5.0%
	Partially operational	6	15.0%	Siemens	4	1-3 years	6	15.0%
	Plan to implement within 2 years	6	15.0%	Eclipsys	3	4-6 years	7	17.5%
	No plans to implement	5	12.5%	Meditech	3	7-9 years	1	2.5%
	No Response	8	20.0%	Cerner	2	10+ years	2	5.0%
				McKesson	2	N/A or No Response	22	55.0%
				EMC	1			
				IDX	1			
				Keane	1			
				MISYS	1			
				PPR	1			
				VISTA	1			
				N/A or No Response	13			
Master Patient Index	Fully operational	29	72.5%	Siemens	11	<1 year	2	5.0%
	Partially operational	5	12.5%	McKesson	4	1-3 years	4	10.0%
	Plan to implement within 2 years	3	7.5%	Eclipsys	3	4-6 years	8	20.0%
	No plans to implement	3	7.5%	IDX	3	7-9 years	4	10.0%
	No Response	0	0.0%	McKesson/ HBOC	2	10+ years	12	30.0%
				Meditech	2	N/A or No Response	10	25.0%
				Cerner	1			
				CPSI	1			
				Keane	1			
				SMS	1			
				N/A or No Response	8			

Electronic Medical Record <i>(Electronically originated and maintained clinical health information, derived from multiple sources, that replaces the paper record as the primary source of patient information)</i>	Fully operational	9	22.5%	Eclipsys	5	<1 year	4	10.0%
	Partially operational	13	32.5%	Siemens	5	1-3 years	5	12.5%
	Plan to implement within 2 years	14	35.0%	Multiple Vendors	4	4-6 years	6	15.0%
	No plans to implement	2	5.0%	Meditech	3	7-9 years	5	12.5%
	No Response	2	5.0%	E&C	2	10+ years	1	2.5%
				McKesson	2	N/A or No Response	19	47.5%
			Cerner	1				
			GE	1				
			MISYS	1				
			Streamline Health	1				
			N/A or No Response	12				
Computerized Provider Order Entry (CPOE)	Fully operational	12	30.0%	Eclipsys	7	<1 year	3	7.5%
	Partially operational	10	25.0%	Siemens	4	1-3 years	7	17.5%
	Plan to implement within 2 years	12	30.0%	Cerner	2	4-6 years	3	7.5%
	No plans to implement	6	15.0%	IDX	2	7-9 years	7	17.5%
	No Response	0	0.0%	Meditech	2	10+ years	1	2.5%
				CPSI	1	N/A or No Response	19	47.5%
			Eclipsys/ Epic/ PICIS	1				
			In House Developed	1				
			Keane	1				
			McKesson	1				
			Meditech & Valco	1				
			MISYS	1				
			N/A or No Response	13				
Medication Barcode at the Point of Care (BPOC)	Fully operational	1	2.5%	Siemens	6	<1 year	1	2.5%
	Partially operational	6	15.0%	Eclipsys	3	1-3 years	4	10.0%
	Plan to implement within 2 years	23	57.5%	Meditech	3	4-6 years	1	2.5%
	No plans to implement	9	22.5%	Bridge	1	7-9 years	0	0.0%
	No Response	1	2.5%	Cerner	1	10+ years	0	0.0%
				IDX	1	N/A	34	85.0%
			Lattice	1				
			McKesson	1				
			Mediware	1				
			MISYS	1				
			N/A or No Response	18				

Clinical Decision Support	Fully operational	5	12.5%	Eclipsys	5	<1 year	3	7.5%
	Partially operational	7	17.5%	McKesson	3	1-3 years	7	17.5%
	Plan to implement within 2 years	13	32.5%	Cerner	2	4-6 years	1	2.5%
	No plans to implement	13	32.5%	E&C	2	7-9 years	1	2.5%
	N/A or No Response	2	5.0%	Meditech	2	10+ years	0	0.0%
				In House Developed	1	N/A	28	70.0%
				IDX	1			
				Midas	1			
				Siemens	1			
				Trendstar	1			
			N/A or No Response	18				
Laboratory	Fully operational	35	87.5%	MISYS	13	<1 year	2	5.0%
	Partially operational	1	2.5%	Cerner	6	1-3 years	2	5.0%
	Plan to implement within 2 years	3	7.5%	Meditech	5	4-6 years	9	22.5%
	No plans to implement	1	2.5%	Soft Computer Corp.	3	7-9 years	9	22.5%
	No Response	0	0.0%	Citation	1	10+ years	14	35.0%
				GE Triple G	1	N/A	4	10.0%
				HBOC	1			
				McKesson	1			
				Psyche	1			
				Quest	1			
			Siemens	1				
			SoftLab	1				
			N/A or No Response	5				
Pharmacy	Fully operational	30	75.0%	Siemens	7	<1 year	2	5.0%
	Partially operational	5	12.5%	Mediware	6	1-3 years	8	20.0%
	Plan to implement within 2 years	3	7.5%	Cerner	4	4-6 years	9	22.5%
	No plans to implement	1	2.5%	Eclipsys	4	7-9 years	6	15.0%
	N/A	1	2.5%	IDX	3	10+ years	8	20.0%
				McKesson	3	N/A	7	17.5%
				Meditech	3			
				CPSI	1			
				GE/ BDM	1			
				McKesson/ HBOC	1			
			MISYS	1				
			N/A or No Response	6				

Radiology Management System	Fully operational	32	80.0%	IDX	9	<1 year	2	5.0%
	Partially operational	2	5.0%	Siemens	8	1-3 years	9	22.5%
	Plan to implement within 2 years	4	10.0%	Cerner	4	4-6 years	8	20.0%
	No plans to implement	1	2.5%	McKesson	4	7-9 years	5	12.5%
	N/A	1	2.5%	Meditech	3	10+ years	10	25.0%
				MISYS	3	N/A	6	15.0%
				CPSI	1			
				Eclipsys	1			
				ITL	1			
				Talk technology	1			
			N/A or No Response	5				
Picture Archiving and Communication System (PACS)	Fully operational	22	55.0%	GE	7	<1 year	7	17.5%
	Partially operational	4	10.0%	Siemens	4	1-3 years	8	20.0%
	Plan to implement within 2 years	11	27.5%	Fuji	2	4-6 years	5	12.5%
	No plans to implement	2	5.0%	McKesson	2	7-9 years	2	5.0%
	N/A	1	2.5%	AGFA	2	10+ years	2	5.0%
				AMICAS	1	N/A	16	40.0%
				Canon	1			
				Dynamic Imaging	1			
				Eclipsys	1			
				EMED	1			
			IDX	1				
			ITL	1				
			Smart PACs	1				
			Stentor Planned 2005	1				
			StorComm	1				
			N/A or No Response	13				
Pathology	Fully operational	30	75.0%	Cerner	5	<1 year	2	5.0%
	Partially operational	1	2.5%	Meditech	5	1-3 years	6	15.0%
	Plan to implement within 2 years	3	7.5%	MISYS	5	4-6 years	10	25.0%
	No plans to implement	3	7.5%	IMPAC	2	7-9 years	4	10.0%
	N/A	3	7.5%	Soft Computer Corp.	2	10+ years	7	17.5%
				Cardinal	1	N/A	11	27.5%
				DataEase	1			
				Fugi	1			
				GE	1			
				McKesson	1			
			Mediware	1				
			Pathco	1				
			Psyche	1				
			Tamtron	1				
			N/A or No Response	12				

Emergency Department	Fully operational	15	37.5%	Emergsoft	4	<1 year	7	17.5%
	Partially operational	9	22.5%	Logicare	3	1-3 years	6	15.0%
	Plan to implement within 2 years	12	30.0%	Cerner	2	4-6 years	8	20.0%
	No plans to implement	3	7.5%	EMA	2	7-9 years	1	2.5%
	N/A	1	2.5%	IDX	2	10+ years	1	2.5%
				Meditech	2	N/A	17	42.5%
				Siemens	2			
				A4	1			
				Eclipsys	1			
				McKesson	1			
				Medhost	1			
				PCTS	1			
				PICIS	1			
				T System	1			
				Vitalworks	1			
			Wellsoft	1				
			N/A or No Response	14				
Operating Room / Surgical Management	Fully operational	20	50.0%	GE	7	<1 year	2	5.0%
	Partially operational	8	20.0%	McKesson	7	1-3 years	7	17.5%
	Plan to implement within 2 years	6	15.0%	Mediware	3	4-6 years	7	17.5%
	No plans to implement	3	7.5%	Cerner	2	7-9 years	3	7.5%
	N/A	3	7.5%	HBOC	2	10+ years	6	15.0%
				SIS	2	N/A	15	37.5%
				Compu Record	1			
				CPSI	1			
				EPIC	1			
				ORSOS	1			
				PICIS (MSM)	1			
				Siemens	1			
			SurgiServe	1				
			N/A or No Response	10				
Cardiology	Fully operational	17	42.5%	GE	8	<1 year	4	10.0%
	Partially operational	3	7.5%	GE/ Apollo	2	1-3 years	5	12.5%
	Plan to implement within 2 years	4	10.0%	Optimed	2	4-6 years	6	15.0%
	No plans to implement	8	20.0%	Apollo/ Medcon	1	7-9 years	1	2.5%
	N/A	8	20.0%	Camtronics	1	10+ years	2	5.0%
				GE & Meditech	1	N/A	22	55.0%
				Hearthub	1			
				Homegrown	1			
				McKesson/ Meditech	1			
				Medcom	1			
				Phillips	1			
				Siemens	1			
			N/A or No Response	19				

Integration Engine	Fully operational	33	82.5%	Siemens	10	<1 year	3	7.5%
	Partially operational	1	2.5%	Quoradx	8	1-3 years	3	7.5%
	Plan to implement within 2 years	1	2.5%	See Beyond	5	4-6 years	13	32.5%
	No plans to implement	3	7.5%	CloverLeaf	2	7-9 years	7	17.5%
	N/A	2	5.0%	Data Gate/ E-Gate	1	10+ years	4	10.0%
				Eclipsys	1	N/A	8	20.0%
			e-Link	1	No Response	2	5.0%	
			Orion	1				
			STC	1				
			THE	1				
Hospital Billing *	Fully operational	38	95.0%	Siemens	23	<1 year	1	2.5%
	Partially operational	0	0.0%	McKesson	4	1-3 years	2	5.0%
	Plan to implement within 2 years	1	2.5%	IDX	2	4-6 years	6	15.0%
	No plans to implement	0	0.0%	Meditech	2	7-9 years	9	22.5%
	N/A	1	2.5%	CPSI	1	10+ years	16	40.0%
				Eclipsys	1	N/A	6	15.0%
			HCS	1				
			Quadramed	2				
			Siemens Eagle	1				
Physician Billing *	Fully operational	38	95.0%	IDX	8	<1 year	3	7.5%
	Partially operational	0	0.0%	Siemens	4	1-3 years	3	7.5%
	Plan to implement within 2 years	1	2.5%	ADS	2	4-6 years	4	10.0%
	No plans to implement	0	0.0%	Medical Manager	2	7-9 years	6	15.0%
	N/A	1	2.5%	Outsourced	2	10+ years	5	12.5%
				Athena Health	1	N/A	19	47.5%
			HCS	1				
			McKesson	1				
			MD Everywhere	1				
			Meditech & Medical Manager	1				
			WebMd	1				

* Please note that questions regarding hospital billing and financial systems were kept to a minimum since GNYHA recently conducted a targeted survey addressing these systems. For more information about these systems, please contact Stewart Presser at GNYHA.

Materials Management	Fully operational	29	72.5%	Lawson	10	<1 year	5	12.5%
	Partially operational	6	15.0%	McKesson	10	1-3 years	7	17.5%
	Plan to implement within 2 years	3	7.5%	HBOC	2	4-6 years	11	27.5%
	No plans to implement	0	0.0%	Meditech	2	7-9 years	6	15.0%
	N/A	2	5.0%	PeopleSoft	2	10+ years	5	12.5%
				Siemens	2	N/A	6	15.0%
				AMS	1			
				Choice System	1			
				CPSI	1			
				GEAC	1			
				Global	1			
				HCS	1			
				Mediclick	1			
				Oracle	1			
				SAP	1			

Section 4. Clinical Information Systems

13. If your hospital or hospital system has implemented computerized provider order entry (CPOE), please estimate the percentage of clinician orders entered using the system.

Notably, 21% of hospital respondents and 35% of health system respondents reported that their CPOE system handles between 76% and 100% of clinician orders.

	Total	Percentage	Total	Percentage
	Hospital		Health System	
0%	5	17%	0	0%
1%-10%	4	14%	1	9%
11%-25%	2	7%	1	9%
26%-50%	0	0%	0	0%
51%-75%	2	7%	0	0%
76%-100%	6	21%	4	36%
No Response or N/A	10	34%	5	45%

14. Please indicate below what you believe will be your institution’s top three priorities for purchase and/or implementation of clinically related IT applications over the next two years (please check only three).

Bar code at the point of care and electronic medical records were clearly selected as the top priorities for clinical information systems in the next two years with PACS, CPOE, and enterprise-wide clinical information systems coming in a close second.

Other priorities that each received a single vote were: cardiology imaging system replacement, business continuity and disaster recovery, document imaging, medication administration, OR management, pharmacy system, radiology management system replacement, scheduling system replacement, transcription, upgrading clinical information system, and wireless.

	Number of Times Selected as Priority
Bar-code at the Point of Care	21
Electronic Medical Records	20
Picture Archiving and Communication System (PACS)	15
Computerized Provider Order Entry (CPOE)	16
Enterprise-wide Clinical Information System	15
Clinical Decision Support	9
Clinical Data Repository	7

15. Please indicate below the status of electronic medical record implementation in your institution. (For this purpose, the electronic medical record is defined as electronically originated and maintained clinical health information, derived from multiple sources, that replaces the paper record as the primary source of patient information.)

While only four hospitals and one health system reported a fully operational electronic medical record system, another 51% of hospital and another 45% of health system respondents reported that installation had begun or that the system was operational in some departments or areas.

	Total	Percentage	Total	Percentage
	Hospital		Health System	
Fully operational system	4	14%	1	9%
System operational in some departments/functional areas	12	41%	4	36%
Installation begun	3	10%	1	9%
Developing plan to implement	7	24%	3	27%
No plans to implement	2	7%	1	9%
No Response	1	3%	1	9%

16. If your institution has a clinical decision support system, please list the modules in operation (e.g., diabetes, congestive heart failure, obstetrics, etc.).

We received the following responses regarding clinical decision support modules in operation:

- cancer-various
- OB/GYN
- Trendstar CIA-RUA
- congestive heart failure
- acute MI
- surgical infection prevention
- infection control
- patient relations
- surgery
- Premier Perspectives
- obstetrics
- time to event
- quality duration calculator
- length of stay
- readmission
- mortality
- laboratory analytics
- ED throughput and readmission
- pharmacy

Section 5. IT Strategic Plan and Priorities

17. Does your institution have an IT Steering Committee or equivalent?

The great majority of respondents (86% for hospitals and 82% for health systems) noted that they employ an IT Steering Committee or equivalent.

	Total	Percentage	Total	Percentage
	Hospital		Health System	
Yes	25	86%	9	82%
No	4	14%	2	18%

18. If yes, who serves on the IT Steering Committee? (Check all that apply.)

In addition to the titles selected in the chart below, other titles receiving one mention each include: Admitting Director, Applications Manager, Compliance, Director MIS/ Communications, Director of Information Systems, Director of Managed Care, Faculty Practice Associates, IT Leadership, Nursing IS, Senior Leadership for Clinical Support Services, Supervisor of Labs, VP Administration, VP Human Resources, VP Quality/Risk Management.

	Number of Times Selected
Chief Information Officer	28
Chief Financial Officer	27
Senior VP for Nursing	26
Chief Operating Officer	22
Senior VP for Operations	20
Chief Medical Officer	18
Chief Executive Officer	17
Chief Medical Informatics Officer	13
Senior VP for Planning	12
Security Officer	10
General Counsel	4
Department Chairs or Chiefs	3
Department Heads	2
Executive Directors	2
HIM Director	2
Radiology Director	2

19. Does your institution have an IT Strategic Plan?

Similar to the IT Steering Committee, the great majority of hospital and health system respondents noted that they have an IT strategic plan.

	Total	Percentage	Total	Percentage
	Hospital		Health System	
Yes	26	90%	9	82%
No	3	10%	1	9%
N/A	0	0%	1	9%

20. If yes, how frequently is the IT strategic plan systematically reviewed and updated?

	Total	Percentage	Total	Percentage
	Hospital		Health System	
Every six months	2	7%	0	0%
Annually	7	24%	3	27%
Every two years	7	24%	1	9%
As needed	10	34%	3	27%
N/A	3	10%	2	18%

21. Please select below the top three information technology priorities for your institution over the next two years (please check only three).

When asked to rank their institution’s top priorities for overall information technology in the next two years, respondents clearly ranked reducing medical errors and promoting patient safety as number one. Replacing inpatient clinical information systems and upgrading network infrastructure were closely ranked at two and three, respectively. Other priorities noted include: research computing, consolidate computer room, IT growth in response to hospital growth, and patient scheduling system

	Number of Times Selected
Reduce medical errors/promote patient safety	22
Replace/upgrade inpatient clinical systems	18
Upgrade network infrastructure	17
Implement an electronic medical record	15
HIPAA Security compliance	11
Disaster recovery/business continuity	11
Improvement of IT department	7
Implement wireless systems	6

22. Please indicate below your institution’s greatest technical challenges with regard to IT networks and infrastructure. (Check all that apply.)

Authentication and single sign-on received the most votes as an institution’s greatest technical challenge, with data center redundancy, network security, and financial considerations being ranked closely behind.

	Number of Times Selected
Authentication/single sign-on	23
Data center redundancy	20
Network security	20
Financial considerations	19
Integration services	18
Securing network for remote access	15
Continuing education/training costs	9
Determining mobility of devices	8
Physical security	7
Telecommunication management	6
Implementation services	6
Network resilience/availability	6
Single vendor network	2

23. What do you consider to be the barriers to hospital IT adoption?

Nearly all respondents noted that the initial cost of IT investment was the most formidable barrier to IT adoption with 57.5% ranking it as a significant barrier and 37.5% ranking it as somewhat of a barrier. Moreover, 87.5% of respondents reported that the ability to support on-going hardware and software costs was either a significant barrier or somewhat of a barrier. Three other barriers noted by respondents were: funding, training, and organizational culture; user acceptance of technology as a strategic resource; and return on investment (ROI) process transformation.

	Significant barrier		Somewhat of a barrier		Not a barrier		Not Applicable	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Initial cost of IT investment	23	57.5%	15	37.5%	2	5.0%	0	0.0%
Ability to support ongoing costs of hardware and software	13	32.5%	22	55.0%	5	12.5%	0	0.0%
Inability of technology to meet needs	5	12.5%	11	27.5%	24	60.0%	0	0.0%
Interoperability of hardware and software with current systems	6	15.0%	22	55.0%	12	30.0%	0	0.0%
Availability of well-trained IT staff	6	15.0%	20	50.0%	14	35.0%	0	0.0%
Fear that technology will become obsolete too quickly	1	2.5%	12	30.0%	27	67.5%	0	0.0%
Acceptance of technology by clinical staff	7	17.5%	19	47.5%	13	32.5%	1	2.5%
Legal barriers to investment and development	2	5.0%	8	20.0%	27	67.5%	3	7.5%

24. Are you undertaking collaborative information technology projects with other health care providers or health care entities?

More than half of respondents (55%) noted that they are already undertaking collaborative information technology projects with other health care providers or health care entities. (Please note that this question was asked prior to the New York State Department of Health issuing its HEAL HIT Phase 1 request for grant applications).

	Number	Percent
No	22	55.0%
Yes	16	40.0%

25. Please rate your organization’s experiences with the following steps of the typical IT procurement process.

Overall, respondents did not report significant difficulty with the IT procurement process. Of the IT procurement process steps listed, return on investment (ROI) analysis was ranked most often as being very difficult with 32.5% respondents placing it in that category.

	Easy		Somewhat difficult		Very difficult		Not applicable	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<i>Initial background and research</i>								
1. Feasibility analysis	20	50.0%	13	32.5%	2	5.0%	5	12.5%
2. Return on investment analysis	8	20.0%	16	40.0%	13	32.5%	3	7.5%
3. Requirements definition	12	30.0%	20	50.0%	6	15.0%	2	5.0%
4. Development of Request for Proposals	14	35.0%	18	45.0%	2	5.0%	6	15.0%
<i>Vendor selection</i>								
1. Identification of potential vendors	31	77.5%	7	17.5%	0	0.0%	2	5.0%
2. Evaluation of submitted vendor proposals	12	30.0%	26	65.0%	0	0.0%	2	5.0%
3. Vendor selection	10	25.0%	26	65.0%	1	2.5%	3	7.5%
<i>Vendor finalization</i>								
1. Contract negotiation and signing	7	17.5%	27	67.5%	3	7.5%	3	7.5%
2. Post-implementation vendor issues (training, warranties, maintenance)	8	20.0%	25	62.5%	4	10.0%	3	7.5%

Section 6. Web Strategy

26. Does your institution have a Web site?

All 40 hospital and health system respondents noted that they operate a Web site.

27. If yes, what department has primary responsibility for the site, including planning, implementation, and functionality enhancement?

Most commonly, the marketing and/or public relations department has primary responsibility for the institution's Web site.

	Total	Percentage	Total	Percentage
	Hospital		Health System	
Marketing	9	31%	6	55%
Information Systems	5	17%	0	0%
Public Relations	14	48%	5	45%
Other:	1	3%	0	0%

28. What are your Web site features and functionalities? (Check all that apply.)

At present, the great majority of Web sites offer information about the institution, some form of physician directory, and intranet functions such as policies and procedures, employee directory, and human resources forms. Notably, only a small minority of respondents offer patient portal functions like electronic appointment requests, disease management, or secure email with physicians. Other Web site functionality reported by respondents include: event registration and online giving, health information, on-line volunteer application, referral services, insurance information, and clinical trial information.

	Percent of Hospitals	Percent of Health Systems
General Information:		
Institutional description	100%	100%
Press releases	86%	82%
Employment	83%	91%
Maps and directions	97%	100%
Services/service line descriptions	93%	91%
Physician Information:		
Static physician directory	69%	36%
Physician search by specialty	83%	64%
Searchable directory by physician name	69%	55%
Not applicable	10%	18%
Patient portal:		
Electronic appointment requests	7%	0%
Bill payment/management	0%	0%
Health content 'push' technology	7%	0%
Online personal health record	3%	0%
Secure messaging to physician	3%	0%
Disease management	14%	0%
Not applicable	76%	100%
Provider portal:		
Medical reference	34%	18%
Health plan connectivity	17%	9%
Remote/online access to review test results	24%	27%
Order transmission	17%	18%
Dictation and/or electronic signature	10%	9%
Not applicable	52%	73%
Intranet:		
Policies and procedures	86%	91%
Employee directory	59%	73%
Human resources forms	69%	73%
Purchase order approval	17%	36%
Online training	41%	64%
Not applicable	14%	0%

29. Please indicate the language(s) in which patient-related information is currently available on your Web site, and which language(s) are expected to be available within the next two years.

Many respondents are currently making efforts to offer patient information in languages other than English and several hospital respondents report plans to expand language access on their Web sites further during the next two years. Individual institutions also noted that information on their Web site was also available in Greek, Arabic, Yiddish, and Korean.

	Currently available	Plan to make available within two years	Currently available	Plan to make available within two years
	Hospital		Health System	
English	100%	n/a	100%	n/a
Spanish	38%	34%	27%	0%
Russian	10%	10%	9%	0%
French	3%	3%	0%	0%
Chinese	0%	7%	9%	0%

Section 7. Outsourcing

30. Does your institution currently outsource any portion of its IT function?

Outsourcing is still prevalent among respondents with 62% of hospitals and 91% of health systems reporting that some portion of its IT function is outsourced.

	Total	Percentage	Total	Percentage
	Hospital		Health System	
Yes	18	62%	10	91%
No	11	38%	1	9%

31. If yes, please indicate below which, if any, of your institution's IT functions are currently outsourced.

Web site, network operations, and PC support/help desk functions are among those most commonly outsourced.

	Percent of Respondents Outsourcing this Function	
	Hospital	Health System
Web site	41%	45%
Applications Development	7%	36%
ASP Services	21%	55%
Network Operations, Monitoring and Support	28%	55%
System Installation	17%	27%
Technical Support	17%	18%
PC Support/Helpdesk	31%	36%

Section 8. IT Budget–Personnel, Operating, and Capital

32. What is your institution’s annual IT budget in the following categories?

Five respondents noted that this question was not applicable or did not provide a response to this question. In addition, for hospital systems, an average budget figure for each hospital within the system was calculated and was then included to represent each hospital within that system. It is also worth noting that three respondents reported that they did not have any capital budget allotment for 2005.

Annual IT budget by category			
	Operating	Personnel (excluding fringe)	Capital
Mean	\$6,012,581	\$2,247,756	\$3,898,501
Median	\$6,176,000	\$2,071,429	\$2,833,333

33. What percentage of your institution’s overall budget is allocated for information technology?

Not enough responses to this question were received to provide a meaningful data.

34. Please provide a rough estimate of your institution’s expected capital IT budget for 2006 and 2007.

Forecasted capital budgets for 2006 and 2007 do not show a significant increase with the mean figures calculated at \$3.8 million for 2006 and \$3.9 million for 2007. Please note that 12 respondents did not provide a response to the 2006 estimated capital budget question and 14 respondents did not provide a response to the 2007 capital budget question. In addition, for hospital systems, an average budget figure for each hospital within the system was calculated and was then included to represent each hospital within that system.

	Estimated capital budget 2006	Estimated capital budget 2007
Mean	\$3,818,966	\$3,900,000
Median	\$2,500,000	\$3,333,333

35. What is the total number of FTEs in your institution’s IT Department?

Seventy two percent of hospital and only 45% of health system respondents report a total number of FTEs in the IT Department in the three categories of 50 or less (namely <10, 10-20, and 21-50). Notably 59% of hospital and 55% of health system respondents noted that they do not have any consultant or outsourced FTEs.

Permanent FTEs				
FTE Size Categories	Number	Percent	Number	Percent
	Hospital		Health System	
<10	2	7%	0	0%
10-20	7	24%	3	27%
21-50	12	41%	2	18%
51-100	2	7%	1	9%
101-250	3	10%	2	18%
251-500	1	3%	1	9%
N/A	2	7%	2	18%

Consultant/ Outsourced FTEs				
FTE Size Categories	Number	Percent	Number	Percent
	Hospital		Health System	
<10	3	10%	0	0%
10-20	7	24%	1	9%
21-50	1	3%	1	9%
51-100	0	0%	0	0%
101-250	1	3%	2	18%
251-500	0	0%	1	9%
N/A	17	59%	6	55%

Appendix A - Survey Respondents

Bon Secours Charity Health System
 Good Samaritan Hospital– Suffern, NY
 St. Anthony's Community Hospital
 Bon Secours Community Hospital
Brookdale University Hospital and Medical Center
Cabrini Medical Center
Continuum Health Partners
 Beth Israel Medical Center
 St. Luke's-Roosevelt Hospital Center
 Long Island College Hospital
 New York Eye and Ear Infirmary
Crouse Hospital
Northport VA Medical Center
Englewood Hospital and Medical Center
Hackensack University Medical Center
HealthQuest Systems
 Vassar Brothers Medical Center
 Putnam Hospital Center
 Northern Dutchess Hospital
Hospital For Special Surgery
Hudson Valley Hospital Center
Huntington Hospital
John T. Mather Memorial Hospital
Kingsbrook Jewish Medical Center
Lenox Hill Hospital
 Manhattan Eye, Ear, & Throat Hospital
Lifespan Corporation
 Rhode Island Hospital
 The Miriam Hospital
 Newport Hospital
 Bradley Hospital
Lutheran Medical Center
Maimonides Medical Center
Memorial Sloan-Kettering Cancer Center
Montefiore Medical
 Henry and Lucy Moses Division
 Weiler Hospital of The Albert Einstein College of Medicine
 The Children's Hospital at Montefiore
The Mount Sinai Hospital
 The Mount Sinai Hospital of Queens

New York City Health and Hospitals Corporation
 Bellevue Hospital Center
 Coler-Goldwater Specialty Hospital and Nursing Facility
 Coney Island Hospital
 Elmhurst Hospital Center
 Gouverneur Hospital Nursing Facility
 Harlem Hospital Center
 Jacobi Medical Center
 Kings County Hospital Center
 Lincoln Medical and Mental Health Center
 Metropolitan Hospital Center
 North Central Bronx Hospital
 Queens Hospital Center
 Sea View Hospital Rehabilitation Center and Home
 Woodhull Medical and Mental Health Center
New York Hospital Queens
New York Methodist Hospital
Niagara Falls Memorial Medical Center
NYU Downtown Hospital
NYU Medical Center
Our Lady of Mercy Medical Center
Peninsula Hospital Center
Riverside Health Care System
 St. John's Riverside Hospital
 Community Hospital at Dobbs Ferry
St. Luke's Cornwall Health System
Saint John's Episcopal Hospital, South Shore
Saint Vincent Catholic Medical Centers
 St. Vincent's Hospital Manhattan
 St. Vincent's Staten Island Hospital
 Mary Immaculate Hospital
 St. John's Queens Hospital
 St. Mary's Hospital
 St. Vincent's Hospital Westchester
Sound Shore Health System
 Sound Shore Medical Center of Westchester
 Schaffer Extended Care Center
 The Mount Vernon Hospital
Stamford Health System
Staten Island University Hospital
SUNY Downstate Medical Center
Trinitas Hospital
Westchester Medical Center
Winthrop-University Hospital