The 18th Annual HIMSS Leadership Survey reports the opinions of information technology (IT) executives from healthcare provider organizations across the U.S. regarding the use of IT in their organizations. The study was designed to collect information about IT priorities, technology adoption, application usage and other crucial factors in the use of IT to enhance healthcare.

Data collected from healthcare provider chief executive officers (CEOs) at provider organizations will be released in the summer of 2007.

Contents

1. Executive Summary
2. Methodology
3. Profile of Survey Respondents
4. IT Priorities
5. IT Barriers
6. IT Applications
7. IT Security
8. Technology Adoption
9. Regional Health Information Organizations (RHIO)
10. IT Governance
11. IT Budget and Staff
12. About HIMSS
13. How to Cite This Study
14. For More Information
Figures

1. Participant Profile—Titles
2. Participant Profile—Facility Type
3. Participant Profile—Number of Hospitals
4. Participant Profile—Facility Revenue
5. Participant Profile—Region
6. Current IT Priorities (Within Next 12 Months)
7. Projected IT Priorities
8. Top Business Issues Facing Healthcare
9. Most Significant Barriers to Implementing IT
10. Most Important Applications (Next Two Years)
11. Status of Electronic Medical Record (EMR) Implementation
12. Security Breach in Last Twelve Months
13. Top Concerns—Security of Computerized Medical Information
14. Security Technologies (Next Two Years)
15. Technology Adoption (Next Two Years)
16. RHIO Adoption
17. Member of Organization’s Executive Committee
18. Alignment of Organizational & IT Strategic Plan
19. CIO Responsibilities
20. Expected Change in IT Staff in Next 12 Months
21. 2007 IT Staffing Needs
22. Additional Functions Managed by CIO
23. Projected Change in 2007 IT Operating Budget
24. Reason for Increase in 2007 Budget
25. Reason for Decrease in 2007 Budget
26. Satisfaction with Vendor Performance
1. Executive Summary

Implementing technology to reduce medical errors and to promote patient safety continues to be a top priority, both now and for the future. This is being driven by a focus on quality of care and patient satisfaction, which were identified most frequently as the healthcare business drivers having the most impact in the next two years.

Improving quality of care and patient (customer) satisfaction are among the top business issues that will most impact healthcare in the next two years, according to the 360 healthcare IT professionals who participated in the 18th Annual HIMSS Leadership Survey. This patient-centric focus is further demonstrated by participant responses regarding their current/future top IT priorities and the importance of IT applications. When asked to identify their organization’s top IT priorities, implementing technology to reduce medical errors/promote patient safety was identified most frequently as the current priority, as well as the top priority in the next two years. A focus on quality of care and patient safety is reflected in the choices of healthcare technology that respondents indicated will be important in the course of the next two years. Nine of the top ten healthcare applications that were identified as being important for the future were clinical systems. Topping the list are electronic medical records (EMRs), computerized practitioner order entry (CPOE), and clinical information systems.

Other key survey results include:

**Financial support:** Financial support for IT continues to be an issue for healthcare IT professionals. Twenty percent of respondents cited lack of adequate financial support as the most significant barrier to successfully implementing IT at their organization.

**Security concerns:** Healthcare IT professionals identified an internal breach of security as their primary concern regarding the security of data at their organization. A full 18 percent of respondents indicated that their organization has experienced a security breach in the past six months. Respondents were most likely to identify that they would adopt multiple measures to facilitate data recovery at their organization in the next two years.

**Technology adoption:** Bar coding technology, high-speed networks and Intranets were the top technologies that survey respondents intend to implement in the next two years.

**Regional Health Information Organizations (RHIOs):** Approximately one-quarter of respondents reported that their organization participates in a RHIO.

**IT budgets:** Nearly three-quarters of respondents reported that their IT operating budget will increase in the next year. Many respondents attributed this to an overall growth in the number of systems and technologies.

**IT governance:** There appears to be a strong level of integration between IT strategies and overall organizational strategies. Additionally, over 80 percent of CIOs reported that they sit on their organization’s executive team.

**IT staffing:** Nearly two-thirds of respondents indicated that the number of IT FTEs in their organization will increase in the next twelve months. The change however, will be modest. Just over one-third of respondents indicated that their staff would increase by
less than 10 percent. The greatest demand for staffing is predicted to be in the area of clinical informatics.

**Vendor satisfaction:** In general, respondents were satisfied with the overall IT products/services they receive from suppliers, application vendors and consulting firms—60 percent of respondents indicated that they were satisfied.
2. Methodology

A total of 360 useable responses were received for this year’s web-based survey. Data collection for the survey began on December 20, 2006 and concluded at the HIMSS Annual Conference and Exhibition (HIMSS07) held in New Orleans, LA from February 26, 2007 to March 1, 2007. The survey respondents represent 306 unique healthcare organizations and nearly 700 hospitals throughout the United States.

Data collected from chief executive officers at provider organizations will be released in the summer of 2007.

3. Profile of Survey Respondents

Approximately 58 percent of the respondents reported that their title was chief information officer (CIO). Specifically, 41 percent of respondents were corporate (system level) CIOs; another 16 percent were facility-level CIOs. Another 41 percent of the respondents reported their title as either department head, manager or senior staff. Other titles represented in the survey include staff (five percent) and CMIO (one percent).

Approximately 86 percent of the survey respondents reported that they work for either a health care system (37 percent), a stand alone hospital (33 percent) or a hospital that is part of a multi-hospital system (16 percent). Other types of facilities represented in this report include ambulatory care/physicians offices (six percent), long-term care/skilled nursing, home health agencies, and mental/behavioral health.

Annual gross operating revenues for the provider organizations represented in this year’s survey were:

- $50 million or less—17 percent;
- $51 million to $200 million—26 percent;
- $201 million to $350 million—7 percent;
- $351 million to $500 million—8 percent;
- $501 million to $1 billion—18 percent;
- More than $1 billion—12 percent; and
- Don’t Know/Not Applicable—13 percent.

The majority of individuals responding to this year’s survey represented the South Atlantic1 and East North Central2 regions (each with 19 percent of respondents). These regions were followed closely by the Middle Atlantic3 region, with 14 percent of respondents. The fewest respondents (six percent) were located in the East South Central4 region.

Figures:

Figure 1. Participant Profile—Titles
Figure 2. Participant Profile—Facility Type
Figure 3. Participant Profile—Number of Hospitals
Figure 4. Participant Profile—Facility Revenue
Figure 5. Participant Profile—Region

---

1 Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
2 Illinois, Indiana, Michigan, Ohio, Wisconsin
3 Pennsylvania, New Jersey, New York
4 Alabama, Kentucky, Mississippi, Tennessee
4. IT Priorities

Implementing technology to reduce medical errors and to promote patient safety continues to be a top priority, both now and for the future. This is being driven by a focus on quality of care and patient satisfaction, which were identified most frequently as the healthcare business drivers having the most impact in the next two years.

Respondents were asked to identify their organization’s top five IT priorities today. Most frequently identified by respondents was implementing technology to reduce medical errors/increase patient safety. Identified by over half of the respondents (54 percent), this issue has been identified as a top priority for the past several years, consistently being identified by approximately half of survey respondents.

This is followed by replacing/upgrading inpatient clinical systems, which was identified by 48 percent of respondents. Implementing an electronic medical record (EMR) was also identified by 48 percent of respondents. Rounding out the top five were business continuity/disaster recovery (35 percent) and integrating systems in a multi-vendor environment (34 percent).

Upgrading systems for participation in a regional health information organization (RHIO) and outsourcing IT functions were each identified by less than 10 percent of respondents. These were identified by nine and four percent of respondents, respectively.

Survey respondents were also asked to identify what their facility’s top IT priorities would be over the next two years. Respondents were most likely to select implementing technology to reduce medical errors/promote patient safety (35 percent). This was followed by replacing/upgrading inpatient clinical information systems, which was identified by 33 percent of respondents. Rounding out the top three was implementing an EMR; this option was selected by 32 percent of respondents.

Also selected by at least one-quarter of respondents in 2007 were connecting IT at the hospital with remote environments (26 percent) and business continuity/disaster recovery (25 percent).

Upgrading systems for participation in a RHIO is one area in which there could be an increase of interest over the course of the next several years—nine percent of respondents to the 2007 survey indicated this was an IT priority today, compared to 23 percent who indicated that this will be an IT priority in the future.

When asked to identify the five business issues that will have the most impact on healthcare in the next two years respondents most frequently identified improving quality of care. This item was identified by 69 percent of respondents. Last year’s top response, patient (customer) satisfaction was identified by 55 percent of respondents in the 2007 survey. Rounding out the top three is Medicare cutbacks/managed care fee reductions. This response was identified by 52 percent of respondents.

Also identified in the top ten responses were three issues that were not identified in last year’s survey. These included increasing need for healthcare services (45 percent), decrease in employer-offered health insurance benefits (28 percent) and RHIOs/health information exchanges (23 percent).
Respondents were least likely to perceive that mergers/consolidation, external threats (such as bioterrorism) and the globalization of healthcare (such as going to India for medical services) will have an impact on healthcare over the course of the next two years. These responses were selected by four percent, three percent and two percent of respondents respectively.

**Figures:**

Figure 6. Current IT Priorities (Within Next 12 Months)
Figure 7. Projected IT Priorities
Figure 8. Top Business Issues Facing Healthcare

### 5. IT Barriers

**Lack of financial support continues to be reported as the most significant barrier to IT implementation.**

For the seventh consecutive year, survey respondents identified lack of adequate financial support for IT as the most significant barrier to a successful implementation of IT at their organization. This response was chosen by 20 percent of respondents. This is followed by lack of staffing resources (16 percent) and vendor’s inability to effectively deliver a product or service to satisfaction (15 percent).

Lack of time/commitment from clinicians was included for the first time in this year’s survey. It was identified by ten percent of respondents as a significant barrier to successfully implementing IT.

Respondents were least likely to identify laws prohibiting data sharing (such as Stark) as a barrier to implementing technology. This item was selected by fewer than one percent of respondents. Lack of clinical leadership (four percent) and lack of common data standards (two percent) were each also identified by only a handful of respondents.

**Figures:**

Figure 9. Most Significant Barriers to Implementing IT

### 6. IT Applications

**Primarily, organizations are focused on the implementation of clinical applications; nine of the top ten applications that respondents indicated as important to their organization in the next two years were clinical applications, led by EMRs and CPOE.**

EMRs and computerized practitioner order entry (CPOE) were the IT applications that respondents cited most frequently as being the healthcare application areas they considered to be important to their organization in the next two years. Each of these items was selected by 47 percent of respondents. These were two of the top three applications identified most frequently in the 2006 survey.

Rounding out the 2007 top three was ancillary clinical information systems, which was identified by 46 percent of respondents; this was identified by only 17 percent of respondents in the 2006 survey. Bar coded medication management was identified by 43 percent of respondents in 2007. No other area was identified by more than 40 percent of respondents.
A number of applications were identified by ten percent or fewer respondents. These applications are:

- Telemedicine Systems (10 percent);
- Personal Health Records (10 percent);
- Cardiology Systems (10 percent);
- Clinical Revenue Cycle Management Systems (seven percent);
- Patient Self-Service Kiosks (seven percent);
- Customer Relationship Management Systems (six percent);

In 2007, nearly one-third of respondents (32 percent) indicated that their organization has a fully operational EMR system in place. This represents a continued increase over the 24 percent of respondents who reported having a fully operational EMR in 2006, and the 18 percent who indicated this to be the case in 2005. For the purposes of this survey, an EMR refers to electronically originated and maintained clinical health information, derived from multiple sources, about an individual’s lifetime health status and healthcare. An EMR is supported by clinical decision systems and replaces the paper medical record as the primary source of patient information.

An additional 37 percent of respondents indicated that their organization is presently installing EMR hardware and software and six percent noted that they have already signed a contract for an EMR system, but have not yet begun the installation process. Only eight percent of respondents indicated that their organization has not yet begun to plan for the use of an EMR.

**Figures:**

Figure 10. Most Important Applications (Next Two Years)
Figure 11. Status of Electronic Medical Record Implementation

### 7. IT Security

**Healthcare IT professionals identified an internal breach of security as their primary concern regarding data security and 18 percent reported that their organization has experienced a security breach in the past six months.**

Nearly all of the survey respondents (96 percent) indicated that they have concerns about the security of the data at the organizations at which they work; this is similar to what respondents have reported in the past. Despite the wide-reaching concern, only 18 percent of respondents indicated that their organization has experienced a security breach at their organization in the past six months.

For the past several years, respondents have indicated that an internal breach of security was their primary concern with regard to data security at their organization. This has not changed, as 57 percent of respondents to the 2007 survey reported that an internal breach of security is their top data security concern.

Rounding out the top three responses were compliance with HIPAA security regulations, identified by 30 percent of respondents, and limits of existing security technology (26 percent). Respondents were least likely to identify their patient’s lack of confidence in the security of their personal data; this was identified by only 13 percent of the respondents.
Respondents were also asked to identify the security technologies that they would use or implement at their organization in the next two years. Respondents were most likely to report that disaster recovery was the security technology that they would implement in the next two years; this was identified by 70 percent of respondents.

Rounding out the top five security technologies that were projected for use in the future were firewalls (69 percent), user access controls (68 percent), audit logs (64 percent) and single-sign on (64 percent). Least frequently identified was public-key infrastructure (24 percent).

Respondents anticipated that they would use a combination of multiple technologies to secure data at their organization. Half of the respondents indicated that they anticipated that their organization would use seven or more of the technologies identified in this survey in the next two years. Only ten percent of the respondents indicated that they would use only one of the technologies identified in this survey.

**Figures:**
- Figure 12. Security Breach in Last Twelve Months
- Figure 13. Top Concerns—Security of Computerized Medical Information
- Figure 14. Security Technologies (Next Two Years)

## 8. Technology Adoption

**Bar coding technology, high-speed networks and Intranets were the top technologies that survey respondents intend to implement in the next two years.**

Nearly three-quarters of respondents indicated that bar coding technology was the technology that respondents were most likely to report that they would use in the next two years. This represents a slight increase over the 69 percent of respondents who selected this item in the 2006 survey. This was followed by high-speed networks (64 percent) and Intranets (63 percent).

Natural language processing continues to be the technology that is least frequently identified in the survey. This year, it was identified by only 10 percent of respondents.

**Figures:**
- Figure 15. Technology Adoption (Next Two Years)

## 9. Regional Health Information Organizations (RHIOs)

**Although nearly all respondents were aware of the basic concept of a RHIO, only one-quarter of respondents report that their organization participates in a RHIO.**

For the purposes of this survey, a RHIO was identified as a group of organizations with a business stake in improving the quality, safety and efficiency of healthcare delivery. The purpose of a RHIO is to electronically exchange health information in a secure format so that the receiver can use the information. The terms RHIO is often used interchangeably with health information exchange (HIE). While awareness of RHIOs in the industry is high (only two percent of respondents are not aware of what a RHIO is), over half of the respondents reported that their organization does not plan to participate in a RHIO.
In fact, the number of respondents that reported that their organization participates in a RHIO (23 percent) has only minimally increased over the percent of respondents that reported participation in a RHIO in the 2006 survey (21 percent). Another seven percent of respondents reported that there is a RHIO in their area that they do not participate in.

Figures:
Figure 16. RHIO Adoption

10. IT Governance

There appears to be a strong level of integration between IT strategies and overall organizational strategies. Additionally, over 80 percent of CIOs reported that they sit on their organization’s executive team.

Respondents were asked to identify the level of integration that exists between their organization’s strategic plan and their operating, clinical and capital plans. Nearly all respondents indicated that there is a strong level of integration between IT strategies and the organization’s overall strategies. Specifically, 42 percent of respondents indicated that their IT strategic plan is a component of the organization’s strategic plan. Another 41 percent of respondents indicated that the plans are integrated, but remain as separate plans.

The remaining respondents indicated that their organization either does not have an IT strategic plan (seven percent) or that their IT strategic plan is not at all integrated with the broader organizational plan (six percent).

Among those respondents who indicated that their title was either corporate CIO or facility CIO, 81 percent reported that they sit on the executive committee of their organization. In this survey, an executive committee is defined as the senior leadership team that drives the overall strategy and direction for the organization.

Individuals identifying themselves as CIOs were also asked to identify which responsibilities they assume on a regular basis as part of their job. Respondents were most likely (89 percent) to report that they were responsible for supporting business and clinical process owners. This is followed closely by driving value from IT investments, which was identified by 88 percent of respondents. Rounding out the top three job responsibilities was managing the IT department, identified by 85 percent of respondents. The only response that was selected by fewer than 80 percent of respondents was “responsible for process change management to be supported by IT”. This option was selected by 77 percent of respondents.

Figures:
Figure 17. Member of Organization’s Executive Committee
Figure 18. Alignment of Organizational & IT Strategic Plan
Figure 19. CIO Responsibilities
11. IT Budget and Staff

Healthcare IT executives predict that both IT staff and budgets will increase in the next year.

According to the HIMSS Analytics™ Database⁵, in 2006 IT departments in hospitals in the United States had an average of 29 IT FTEs (median 10 IT FTEs). Nearly two-thirds of respondents (65 percent) of the survey respondents predicted that the number of FTEs in their IT departments will increase in the next twelve months. However, the majority of these respondents indicated that the increase would be minimal. Thirty-seven percent of respondents indicated that their IT staff would increase by less than 10 percent. Another twenty percent indicated that the change would be between 10 and 20 percent. Only seven percent indicated that the change in staffing was predicted to be more than 20 percent.

Another quarter of respondents (24 percent) indicated that they did not believe that the number of IT FTEs at their organization would change in the next 12 months and nearly eight percent of respondents reported that the number of IT FTEs at their organization would decrease in the next year. However, this change should be small, as nearly all of the respondents who indicated that there would be a decrease in staffing would be less than ten percent.

Nearly one-third of respondents indicated that the key area in which they have staffing needs is in the area of clinical informatics. Other areas for which respondents projected future staffing needs were application support and development, process workflow design and network and architecture support. Each of these areas was identified by approximately one-quarter of respondents.

Respondents were least likely to report that they will have staffing needs in the following areas:

- IT Management (nine percent);
- IT Planning (nine percent);
- Internet/Intranet (seven percent);
- Regulatory (one percent).

Six percent of respondents reported that they will have no staffing needs at their organization.

Respondents were also asked to identify which areas outside of the IT department they were responsible for. Over half of respondents (58 percent) indicated that they were responsible for the management of a department other than IT. Primary responsibility outside of IT lies in the area of telecommunications, for which 48 percent of respondents identified responsibility. Less frequently identified were health information management (14 percent) and biomedical engineering (eight percent).

According the HIMSS Analytics™ Database, in 2006 healthcare care organizations in the United States had an average IT budget of 2.61% of their total budget. Nearly three quarters of respondents (74 percent) indicated that when compared to their spending level in 2006, their 2007 IT spending will increase. This number is consistent with past projections that were identified in this survey; approximately three-quarters of

---

⁵ Derived from the Dorenfest IHDS+ Database™
respondents have consistently reported that IT spending will increase since the 2004 survey. Among those predicting an increase, 48 percent noted that they expect a definite increase and 26 percent project a probable increase.

Ten percent of respondents indicated their budget would decrease in 2007; this is slightly higher than the six percent of respondents who predicted that their IT spending would decrease in the 2006 survey. The remaining 11 percent of respondents indicated that IT spending at their organization would not change in the next year.

Among those respondents who indicated that their budget would increase in 2007, respondents were most likely to attribute a potential increase in IT spending to an overall growth in number of systems and technologies as the reason for the increase. Respondents were also likely to attribute projected IT budget increases to overall budget increases (46 percent); identified in long-term IT or organizational strategic plan (43 percent) or need to upgrade IT infrastructure (42 percent). Respondents were least likely to identify a recent merger or partnership with another organization as a key reason for an overall increase in IT budget.

Among the ten percent of respondents who projected a budget decrease, overall budget decreases were identified as the reason for the decrease; this was identified by 69 percent of respondents. Just over one quarter of respondents (28 percent) also identified deteriorating financial conditions related to cutbacks in Medicare/Medicaid.

Figures:
Figure 20. Expected Change in IT Staff in Next 12 Months
Figure 21. 2007 IT Staffing Needs
Figure 22. Additional Functions Managed by CIO
Figure 23. Projected Change in 2007 IT Operating Budget
Figure 24. Reason for Increase in 2007 Budget
Figure 25. Reason for Decrease in 2007 Budget

12. About HIMSS

The Healthcare Information and Management Systems Society (HIMSS) is the healthcare industry’s membership organization exclusively focused on providing global leadership for the optimal use of healthcare information technology (IT) and management systems for the betterment of healthcare. Founded in 1961 with offices in Chicago, Washington D.C., Brussels, and other locations across the United States and Europe, HIMSS represents more than 20,000 individual members and over 300 corporate members that collectively represent organizations employing millions of people. HIMSS frames and leads healthcare public policy and industry practices through its advocacy, educational and professional development initiatives designed to promote information and management systems’ contributions to ensuring quality patient care.

13. How to Cite This Study

Individuals are encouraged to cite this report and any accompanying graphics in printed matter, publications, or any other medium, as long as the information is attributed to the 18th Annual HIMSS Leadership Survey.
14. For More Information, Contact:

Joyce Lofstrom  
Manager, Corporate Communications  
HIMSS  
312/915-9237  
jlofstrom@himss.org
Demographic Information

Participant Profile—Titles

- Corporate CIO: 41%
- Department Head: 19%
- Facility CIO: 16%
- Manager: 11%
- Staff: 5%
- Other: 4%
- Senior Staff: 2%
- CMIO: 1%

Participant Profile—Facility Type

- Healthcare System: 37%
- Stand-Alone Hospital: 33%
- Multi-Hospital/IDN: 16%
- Ambulatory Care Facility: 6%
- Other: 5%
- Other Healthcare Facility: 4%
Demographic Information (continued)

### Participant Profile—Number of Hospitals

![Bar chart showing the distribution of hospitals by number](image)

- One: 44%
- Two: 14%
- Three or Four: 13%
- Five or More: 14%
- Not Applicable: 15%

### Participant Profile—Facility Revenue

![Bar chart showing the distribution of facility revenue](image)

- Under $50 Million: 17%
- $51 to $200 Million: 26%
- $201 to $350 Million: 7%
- $351 to $500 Million: 8%
- $501 Million to $1 Billion: 18%
- More than $1 Billion: 12%
- NA/Don’t Know: 13%
Demographic Information (continued)

Participant Profile—Region

Figure 5

<table>
<thead>
<tr>
<th>Region</th>
<th>2007 Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Atlantic</td>
<td>19%</td>
</tr>
<tr>
<td>East North Central</td>
<td>19%</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>14%</td>
</tr>
<tr>
<td>Pacific</td>
<td>10%</td>
</tr>
<tr>
<td>West North Central</td>
<td>9%</td>
</tr>
<tr>
<td>Mountain</td>
<td>8%</td>
</tr>
<tr>
<td>West South Central</td>
<td>8%</td>
</tr>
<tr>
<td>New England</td>
<td>8%</td>
</tr>
<tr>
<td>East South Central</td>
<td>6%</td>
</tr>
</tbody>
</table>

IT Priorities

Current IT Priorities (Within Next 12 Months)

Figure 6

<table>
<thead>
<tr>
<th>Priority</th>
<th>2006 Results</th>
<th>2007 Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce Medical Errors/Promote Patient Safety</td>
<td>50%</td>
<td>54%</td>
</tr>
<tr>
<td>Replace/Upgrade Inpatient Clinical Systems</td>
<td>48%</td>
<td>45%</td>
</tr>
<tr>
<td>Implement an EMR</td>
<td>N/A</td>
<td>48%</td>
</tr>
<tr>
<td>Business Continuity and Disaster Recovery</td>
<td>N/A</td>
<td>45%</td>
</tr>
<tr>
<td>Integrate Systems in Multi-Vendor Environment</td>
<td>33%</td>
<td>35%</td>
</tr>
<tr>
<td>Connecting IT at Hospital and Remote Locations</td>
<td>33%</td>
<td>36%</td>
</tr>
<tr>
<td>Process/Workflow Redesign</td>
<td>30%</td>
<td>35%</td>
</tr>
<tr>
<td>Improve IS Departmental Services</td>
<td>28%</td>
<td>26%</td>
</tr>
</tbody>
</table>
IT Priorities (continued)

Projected IT Priorities
(Today vs. Next Two Years)

Figure 7

<table>
<thead>
<tr>
<th>Issue</th>
<th>In Two Years</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce Medical Errors/Promote Patient Safety</td>
<td>35%</td>
<td>48%</td>
</tr>
<tr>
<td>Replace/Upgrade Inpatient Clinical Systems</td>
<td>32%</td>
<td>48%</td>
</tr>
<tr>
<td>Implement an EMR</td>
<td>26%</td>
<td>35%</td>
</tr>
<tr>
<td>Business Continuity and Disaster Recovery</td>
<td>30%</td>
<td>33%</td>
</tr>
<tr>
<td>Integrate Systems in Multi-Vendor Environment</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>Connecting IT at Hospital and Remote Locations</td>
<td>24%</td>
<td>30%</td>
</tr>
<tr>
<td>Process/Workflow Redesign</td>
<td>17%</td>
<td>24%</td>
</tr>
<tr>
<td>Improve IS Departmental Services</td>
<td>17%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Top Business Issues Facing Healthcare
(2007 vs. 2006 Results)

Figure 8

<table>
<thead>
<tr>
<th>Issue</th>
<th>2006 Results</th>
<th>2007 Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving Quality of Care</td>
<td>N/A</td>
<td>36%</td>
</tr>
<tr>
<td>Patient (Customer) Satisfaction</td>
<td>N/A</td>
<td>55%</td>
</tr>
<tr>
<td>Medicare Cutsbacks</td>
<td>N/A</td>
<td>52%</td>
</tr>
<tr>
<td>Increasing Need for Healthcare Services</td>
<td>N/A</td>
<td>45%</td>
</tr>
<tr>
<td>Adoption of New Technology</td>
<td>N/A</td>
<td>29%</td>
</tr>
<tr>
<td>Demand for Capital</td>
<td>N/A</td>
<td>18%</td>
</tr>
<tr>
<td>Availability of Clinical Staff</td>
<td>N/A</td>
<td>29%</td>
</tr>
<tr>
<td>Decrease in Health Insurance Benefits</td>
<td>N/A</td>
<td>17%</td>
</tr>
</tbody>
</table>
IT Barriers

Most Significant Barriers to Implementing IT
(2007 vs. 2006 Results)

- Vendor's Inability to Effectively Deliver Product: 11% (2007), 15% (2006)
- Lack of Time from Clinicians: 10% (2007)
- Lack of a Strategic IT Plan: 8% (2007)
- Proving IT Quantifiable Benefits/ROI: 5% (2007)
- Difficulty Achieving End-User Acceptance: 11% (2007)

IT Applications

Most Important Applications (Next Two Years)
(2007 vs. 2006 Results)

- Clinical Data Repository: 43% (2007), 58% (2006)
- Clinical Information Systems: 46% (2007)
- Bar Coded Medication Management: 37% (2007), 45% (2006)
- Evidence Based Medicine at Point of Care: 29% (2007)
- Point-of-Care Data Collection: N/A (2006), 29% (2007)
IT Applications (continued)

Status of Electronic Medical Record Implementation
(Comparison of 2007, 2006, and 2005 Results)

<table>
<thead>
<tr>
<th>Status</th>
<th>2005 Results</th>
<th>2006 Results</th>
<th>2007 Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Operational System</td>
<td>N/A</td>
<td>37%</td>
<td>32%</td>
</tr>
<tr>
<td>Installation Begun</td>
<td>18%</td>
<td>13%</td>
<td>7%</td>
</tr>
<tr>
<td>Signed Contract</td>
<td>6%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Developed Plan to Implement</td>
<td>8%</td>
<td>16%</td>
<td>24%</td>
</tr>
<tr>
<td>No Plans Yet</td>
<td>12%</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>Don't Know</td>
<td>11%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

IT Security

Security Breach in Last Twelve Months

<table>
<thead>
<tr>
<th>Status</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>18%</td>
</tr>
<tr>
<td>No</td>
<td>68%</td>
</tr>
<tr>
<td>Don't Know</td>
<td>14%</td>
</tr>
</tbody>
</table>
IT Security (continued)

Top Concerns—Security of Computerized Medical Information
(2007 vs. 2006 Results)

Security Technologies
(2007 vs. 2006 Results)
Technology Adoption

Technology Adoption (Next Two Years)  
(2007 vs. 2006 Results)  

Bar Code Technology   
2006: 60%   2007: 74%  
High Speed Networks   
2006: 49%   2007: 62%  
Intranet   
2006: 49%   2007: 62%  
Tablet Computers   
2006: 56%   2007: 60%  
Document Imaging   
2006: 60%   2007: 65%  
Handheld PDAs   
2006: 59%   2007: 62%  
Speech Recognition   
2006: 55%   2007: 65%  
Identity Management   
2006: 54%   2007: 79%  

RHIOs

RHIO Adoption  
(2007 vs. 2006 Results)  

Unaware of What a RHIO Is   
2006: 12%  2007: 3%  
No Plans to Participate in RHIO   
2006: 53%  2007: 74%  
Don't Participate in Area RHIO   
2006: 7%  2007: 7%  
Participate in Area RHIO   
2006: 23%  2007: 14%  
Don't Know   
2006: 5%  2007: 2%
IT Governance

Member of Organization’s Executive Committee

Figure 17

<table>
<thead>
<tr>
<th>Yes</th>
<th>81%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>20%</td>
</tr>
</tbody>
</table>

Alignment of Organizational & IT Strategic Plan

Figure 18

- IT Plan is Part of Strategic Plan: 42%
- Integrated but Separate Plans: 41%
- Not at All Integrated: 6%
- No Strategic Plan: 7%
- Don’t Know/Other: 4%
IT Governance (continued)

CIO Responsibilities

Figure 19

- Support Business & Clinical Process Owners: 89%
- Drive Value From IT Investment: 88%
- Manage IT Department: 85%
- Contribute to Business Strategy: 82%
- Enable CEO to Improve Management Through IT: 82%
- Responsible for Process Change Management: 77%

IT Budget and Staff

Expected Change in IT Staff in Next 12 Months

Figure 20

- Increase: 65%
- No Change: 24%
- Decrease: 8%
- Don’t Know: 4%
IT Budget and Staff (continued)

2007 IT Staffing Needs

- Clinical Informaticists: 32%
- Application Support: 29%
- Process/Workflow Design: 28%
- Network and Architecture Support: 25%
- Clinical Transformation: 23%
- Systems Integration: 20%
- Clinical Champions: 18%
- Systems Design: 16%
- PC/Server Support: 16%

Additional Functions Managed by CIO

- Telecommunications: 48%
- HIM: 14%
- Other: 9%
- Biomedical Engineering: 8%
IT Budget and Staff (continued)

Projected Change in 2007 IT Operating Budget

- Definitely Increase: 48%
- Probably Increase: 26%
- No Change: 11%
- Probably Decrease: 5%
- Definitely Decrease: 5%
- Don't Know: 5%

Reason for Increase in 2007 Budget

- Overall Growth in Technology: 77%
- Overall Budget Increases: 46%
- Increase in IT/Organizational Strategic Plan: 43%
- Need to Upgrade IT Infrastructure: 42%
- Addition of Facility/Business Unit: 26%
- Need to Comply with Regulatory Changes: 16%
- Ability to Prove IT ROI: 11%
- Business Requirements to Invest in E-Business: 8%
- Merger with Another Organization: 5%
IT Budget and Staff (continued)

Reason for Decrease in 2007 Budget

Figure 25

Overall Budget Decrease
Deteriorating Financial Conditions
Recent Merger or Partnership
Inability to Prove ROI
Closing of Facility/Business Unit
Decrease in IT/Organization Strategic Plan

Satisfaction with Vendor Performance

Satisfaction with Vendor Performance
(2007 vs. 2006 Results)

Figure 26

Very Satisfied
Satisfied
Neutral
Dissatisfied
Very Dissatisfied

2006 Results
2007 Results