Final Report
13th ANNUAL HIMSS LEADERSHIP SURVEY
Sponsored by Superior Consultant Company
January 28, 2002

Sponsored by **Superior Consultant Company**, the 13th Annual HIMSS Leadership Survey reports the opinions of information technology (IT) executives from healthcare provider and vendor organizations from across the U.S. regarding the use of IT in their organizations. The survey is designed to obtain information about IT priorities, barriers, applications, and other crucial factors in the use of IT to enhance healthcare.

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1. Executive Summary

The 13th Annual HIMSS Leadership Survey, sponsored by Superior Consultant Company, suggests that interest in HIPAA compliance, security of patient information, and clinical applications has held steady or risen; interest in using IT to improve patient safety and enterprise resource planning is strong; and relative importance of Internet applications and IT staffing has fallen.

- **HIPAA/security:** Upgrading security on IT systems to meet HIPAA requirements is the top IT priority—identified by 60 percent of respondents—and is also forecast to be the top priority two years from now. Confidence in the security of patient medical information is on the rise. Fewer respondents are concerned about security breaches, and technology appears to be less of a barrier to security. Two-thirds of organizations have assessed HIPAA compliance, and awareness of HIPAA compliance measures has increased.

- **Clinical applications:** Respondents identified clinical information systems as the most important healthcare application for their organizations in the next two years—cited by 74 percent of respondents, a 10-point increase over last year.

- **Patient safety:** Promoting patient safety/reducing medical errors was the second most pressing current issue IT issue identified—46 percent—and also the second most pressing priority forecast over the next two years.

- **Enterprise resource planning (ERP).** The importance of ERP systems has increased dramatically in the past year. Last year, only 11 percent of respondents identified ERP systems as important to their organization over the next two years. In 2002, 58 percent of senior-level executives identified ERP systems as an important application.

- **Internet applications.** Deploying Internet technology, last year's second-highest IT priority, decreased eight points this year. Deploying Internet technology decreased 14 points in projected importance over the next two years. Only 38 percent of respondents identified web applications as important in healthcare in the next two years, down from 50 percent last year and 70 percent in 2000.

- **IT staffing.** Recruitment and retention of high-quality IT staff fell 13 percent as a current IT priority—from 26 percent in 2001 to 13 percent in 2002. This issue declined in priority as a future concern by 10 percent between 2001 and 2002.

Other notable findings include:

- Wireless, hand-held devices, data security, and voice recognition all are high-priority technologies for the next two years.

- Current use of data security tools has declined by 40 percent; predicted future use is expected to increase by 16 percent. Interest in XML and ASP technologies is expected to decline in the next two years, while use of voice recognition technology is expected to double.

- Although two-thirds of respondents' facilities currently outsource IT functions, almost half predict they will not outsource IT functions two years from now.

2. Methodology

Survey data were collected using a different method this year than in previous years' surveys. To ensure the most informed, representative coverage of the field possible, data were solicited from one individual—a senior IT executive – per healthcare organization. More than 4,000 chief information officers (CIOs) at healthcare facilities across the United States were contacted via e-mail and U.S. mail. This format helped to ensure that facilities would be represented only one time in the survey and that the respondent was a senior-level executive at that facility. Data for previous years' Leadership Surveys were collected using an open format—that is, a format that does not solicit participation in as targeted a manner.

A total of 355 individuals completed the self-administered Web-based questionnaire over a seven-week period beginning on November 19, 2001. These individuals represented 355 healthcare provider organizations located throughout the United States. Data from industry vendors, suppliers and consultants were captured in a separate survey; the results will be reported in February 2002.

3. Profile of Survey Respondents

The majority of survey respondents were chief information officers (CIOs) or directors of information systems (IS). Forty-two percent of respondents were hospital CIOs or IS directors; another 42 percent were corporate CIOs or IS directors. Additionally, almost 9 percent of respondents were department heads or directors. Senior executives constituted a higher proportion of respondents in this year's survey than in last year's survey.

Forty-seven percent of the respondents worked for a stand-alone hospital and another 43 percent worked for a hospital that is part of a multi-hospital system/network. In last year's survey, 77 percent worked in a hospital setting. Other types of healthcare facilities represented (10 percent) include mental/behavioral healthcare facilities, physician's offices, nursing homes, and home health agencies. Like last year, the majority of healthcare facilities in this study—80 percent—were not-for-profit.

Annual gross revenue for the provider organizations represented in this year's survey were:

- $50 million or less—15 percent;
- $51 million to $200 million—37 percent;
- $201 million to $350 million—17 percent;
- $351 million to $500 million—10 percent;
- $501 million to $1 billion—6 percent; and
- More than $1 billion—6 percent.

Additionally, almost 3 percent of the respondents worked for military organizations not reporting revenue. A comparison should not be drawn with last year's data because this year's revenue represents the facility an individual works for, while last year's responses represented the entire corporate entity.

By design, all of this year's respondents were from the United States. The Mountain, East North Central, and South Atlantic regions had the largest number of respondents. The New England region had the lowest number of respondents.

Figures:

4. IT Priorities

HIPAA compliance continues to play an important role in healthcare IT. Internet, IT staffing less of an industry concern.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) continues to drive the healthcare IT industry. Upgrading security on information technology (IT) systems to meet HIPAA requirements is the top IT priority—identified by 60 percent of respondents, up from 57 percent in 2001.

The next most pressing issue identified is reducing medical errors and promoting patient safety, 46 percent of respondents identifying this as their facility's most pressing IT priority. (Data were not gathered on this item last year.) Rounding out the top three IT priorities is the replacement or upgrade of inpatient clinical systems (42 percent—an eight-point increase over last year's response).

Deploying Internet technology, last year's second priority, decreased eight points this year. Last year's third priority, improvement of IT departmental services, cost effectiveness and efficiencies, decreased four points.

An even larger decline in importance occurred with regard to the recruitment and retention of high-quality IT staff. In 2001, 26 percent of respondents cited this as a priority; in 2002, 13 percent identified it as a priority.

Respondents believed their facilities will have the same priorities in two years as they do today, with relative importance of those priorities approximately the same two years from now as today. Top priorities forecast over the next two years are:

- Upgrading security on IT systems to meet HIPAA requirements—56 percent, compared with 53 percent last year;
- Implementing technology to reduce medical errors/promote patient safety—46 percent (not asked last year); and
- Replacing and upgrading inpatient clinical systems—41 percent, compared with 30 percent last year.

Deploying Internet technology decreased 14 points in future importance. Recruitment and retention of high-quality IT staff has also declined in importance as a future priority—by 10 percent.

Once again, respondents identified HIPAA compliance as the top business issue that will affect healthcare in the next two years, identified by 81 percent, an increase of four points over last year. The reduction of medical errors (52 percent) moved into the second slot, up from fourth last year (44 percent). Last year's second-highest priority—cost pressures—fell to third (51 percent, compared with 52 percent in 2001). Improving operational efficiency dropped to fourth place (40 percent, compared with 45 percent in 2001). Additionally, consumerism/satisfying customers and the availability and retention of staff both dropped 9 percent from 2001 to 2002.

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

5. IT Barriers

Frustration continues regarding lack of financial support, vendors' inability to deliver products, and difficulties with end-user acceptance.

Lack of financial support continues to limit implementing new IT tools. Inadequate financial support for information technology was cited by 27 percent of respondents as the most significant barrier to successfully implementing IT at their facilities. Vendors' inability to effectively deliver product or service to their clients' satisfaction (17 percent) also continues to be a significant barrier to IT implementation. Rounding out the top three barriers is difficulty in achieving end-user acceptance or use (16 percent). This survey's top three responses all reflected an increase of between 4 percent and 6 percent compared with last year's results.

As a barrier to successful IT implementation, demonstrating return-on-investment decreased for the second year in a row, from 15 percent to 13 percent. The recruitment and retention of high-quality IT staff also fell for the second consecutive year. Only 4 percent of this year's respondents identified it as a concern, compared to 6 percent last year.

Figure:

Figure 9. Most Significant Barriers to Implementing IT

6. IT Applications

Focus on clinical data continues, interest in Web-based applications wanes, and attention to ERP systems spikes.

Once again, respondents identified clinical information systems as the most important healthcare application for their organizations in the next two years—cited by 74 percent of respondents, a 10-point increase over last year. The importance of enterprise resource planning (ERP) systems increased dramatically in the past year. Last year, only 11 percent identified ERP systems as important to their organization over the next two years. In 2002, 58 percent of senior-level executives identified ERP systems as an important application. Point-of-care clinical decision support systems were identified by 55 percent of senior-level executives as being important to their organization in the next two years, up 15 points from last year. Excitement about Web-based applications continues to wane, as only 38 percent identified these applications as important in healthcare in the next two years, down from 50 percent last year and 70 percent in 2000.

Respondents continued to identify computer-based patient records (CPR) as an important application to their facilities. Fifty-three percent of senior executives reported that CPRs were important to their facilities, up from 45 percent in 2001. Although only 13 percent of respondents reported that their facilities have a fully functional CPR in place, 32 percent reported having begun installation, and 23 percent have developed a plan for implementation.

Figures:

Figure 10. Most Important Applications (Next Two Years)
Figure 11. Status of CPR System Implementation

7. IT Security and HIPAA

Confidence in the security of patient medical information is on the rise. Fewer respondents are concerned about security breaches, and technology appears to be less of a barrier to security. Two-thirds of organizations have assessed HIPAA compliance, and awareness of HIPAA compliance measures has increased.

For the second year in a row, compliance with HIPAA security regulations was reported to be the primary concern regarding the security of patient medical information, at 53 percent. Although it is still the top concern, this issue carries less weight than it did in 2001, when 73 percent identified it as the top concern. Forty-six percent identified an internal breach of security as a concern, compared to 58 percent in 2001. Inadequate security systems in place were cited by 28 percent of 2002 respondents, down from last year's 35 percent. Additionally, executives reported being less concerned about the limits existing technology has on the security of patient information. Last year, 40 percent of respondents identified technology limits as a concern; this year, only 27 percent identified it as such. Lack of patient confidence was also seen as less of a concern this year, identified by only 19 percent of respondents. In 2001, 29 percent identified lack of patient confidence as a concern.

Knowledge about HIPAA's security requirements is rising. This year, 36 percent of respondents indicated they were very knowledgeable about HIPAA, compared with 29 percent last year. The number of respondents who claimed to be not at all knowledge about HIPAA remained low and relatively unchanged at roughly 3.5 percent.

Despite the fact that fewer respondents indicated that HIPAA was a concern regarding patient medical information, their organizations in greater numbers are taking steps to ensure that HIPAA compliance. Seventy percent indicated that their organizations have assessed HIPAA compliance, an 18 percent increase over last year. Additionally, 58 percent indicated that their facilities have documented security policies and procedures, an increase of 13 percent over last year. Rounding out the top three, 54 percent of respondents indicated that their organizations have installed security technologies such as firewalls. This is up 3 percent from last year's 51 percent.

Additionally, almost half of the respondents indicated their facilities were reworking contracts with existing vendors to prepare for HIPAA compliance. Increases were also seen in the number of respondents who indicated that their facilities have hired a consultant or vendor to assess readiness (29 percent vs. 18 percent), implemented security policies and procedures (34 percent vs. 29 percent), and hired a security officer (35 percent vs. 34 percent). The number of respondents who indicated that their facilities have not yet begun to comply with HIPAA security requirements dropped from 14 percent to 6 percent.

The most frequently reported security tool in use at respondents' facilities is a firewall, identified by 94 percent. Other commonly used security tools include user access controls based on role/location (86 percent), multi-level passcodes (76 percent), and off-site storage (68 percent). Audit logs for each access to patient health records and disaster recovery were each identified by 58 percent of respondents. Asked to identify the security tools that their facilities were most likely to use in the next two years, 59 percent identified data encryption. In addition, 58 percent indicated they anticipate the use of audit logs for each access to patient health records in the next two years, followed by electronic signature (56 percent), single sign-on (54 percent), and disaster recovery (52 percent). Public key infrastructure (PKI) was cited by the least number of respondents at 40 percent.

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Figure 12. Top Concerns—Security of Computerized Medical Information
Figure 13. Knowledge of HIPAA Security Requirements
Figure 14. Steps Taken to Comply with HIPAA
Figure 15. Security Tools (Today vs. Next Two Years)

8. Technology Adoption

Current use of data security tools has declined by 40 percent; predicted future use is expected to increase by 16 percent. Interest in XML and ASP technologies is expected to decline in the next two years, while use of voice recognition technology is expected to double.

The most widely cited technologies currently in use include high-speed networks (91 percent), Intranet (82 percent), and client server systems (81 percent). All of these use rates represent at least a 5 percent increase over the use reported last year. Use of data security technologies declined almost by half, from 78 percent last year to 39 percent this year. Additionally, use of hand-held devices, wireless information appliances, and the Extranet are up between 13 and 19 points over last year.

Wireless continues to be the technology that most respondents indicated their facilities would like to implement in the next two years, at 54 percent (up from 50 percent in 2001). Rounding out the top five technologies predicted to be used within the next two years are:

- Hand-held devices (51 percent, compared to 47 percent in 2001);
- Data security (47 percent, compared to 31 percent in 2001);
- Voice recognition (47 percent, compared to 46 percent in 2001); and
- Web-enabled business transactions (38 percent, compared to 48 percent in 2001).

A significant decrease was also seen in the predicted future use of XML (Extensible Markup Language), which declined from 33 percent to 20 percent, and in ASP services, which declined from 28 percent to 13 percent. Additionally, use of voice recognition was predicted to more than double in the next two years, from 19 percent to 47 percent in two years.

ASP technologies have not continued to receive the attention they have in the past. The number of respondents who expressed any level of interest fell from 66 percent last year to 56 percent this year. The number of respondents who indicated their facilities are *not* interested in ASPs rose from 27 percent to 40 percent. Despite these findings, the percentage of respondents who reported that ASP technologies are being used at their facilities increased from 13 percent to 21 percent. The most frequently used ASP technology was connectivity to payors (20 percent). Another 12 percent reported using ASP technology for healthcare plans. Respondents also predicted that these two areas will see the greatest rise in usage in the next two years.

Figures:

Figure 16. Current Use of Information Technology
Figure 17. Technology Adoption (Next Two Years)
Figure 18. Level of Interest in Using ASPs
Figure 19. ASP Technology Usage

9. Web Site Use

Web sites are more frequently used for employee recruitment than they were in the past year. Patient scheduling was cited as the most popular potential use of Web sites in the next two years.

The 94 percent of respondents who reported that their organizations have a Web site represents a slight decrease from last year's 97 percent. Marketing/promotion of the organization remains the number one Web site use reported (97 percent). Employee recruitment, while remaining in the number-two slot, increased to 88 percent from 2001's 75 percent. Use of on-line physician/provider directories was cited by 73 percent of respondents, and provision of consumer health information was cited by 71 percent of respondents (compared with 65 percent last year for both Web site uses). Two Web site uses declined substantially between the 2001 and 2002 surveys: posting policies and procedures fell from 51 percent to 38 percent, and Intranet use fell from 59 percent to 41 percent.

The top three most frequently identified priorities for Web site use in the next two years remain unchanged from last year. Patient scheduling was once again the most frequently cited priority for the next two years (56 percent, compared with 42 percent in 2001). Communication with clinicians (43 percent) and patient health assessment tools (40 percent) rounded out the top three. Purchasing supplies, identified as a priority in 2001 by 26 percent respondents, fell to 1 percent.

Figures:

10. IT Outsourcing

Two-thirds of respondents' facilities currently outsource IT functions. Respondents predict a decrease in IT outsourcing in two years. Despite last year's prediction of a decrease in IT outsourcing, survey data indicate an increase in outsourcing of various IT functions over last year.

Approximately 67 percent of this year's survey respondents reported that they outsource at least a portion of their facility's IT functions. Web site maintenance and development were again the most frequently reported outsourced IT functions, at 34 percent—a 9 percent increase compared with last year. Additionally, the number of respondents who reported that their facilities will outsource Web site maintenance and development in the next two years increased 4 percent, from 17 percent to 21 percent. Applications development (19 percent) and the partial tasking of one or more functions (14 percent) continue to be among the top IT functions outsourced. The partial tasking of one or more functions is down from last year's 19 percent.

More than 43 percent of respondents indicated that their facilities do not plan to outsource any IT functions in the next two years, compared with 32 percent last year. A comparison between the 2002 and 2001 survey respondents' predictions shows that although 2001 respondents also predicted a decrease in IT outsourcing in the next two years, 2002 survey data demonstrate an increase in outsourcing various IT functions over last year. The functions that respondents most frequently indicated their facilities plan to outsource in the next two years are Web site maintenance and development (21 percent), applications development (11 percent), system installation (10 percent), and partial tasking of one or more functions (10 percent).

Figures:

11. IT Budget and Staff

IT staffing and budgets are predicted to continue rising. However, the percent of budget increase will be smaller than in past years.

Senior IT executives anticipated that staffing levels and information technology budgets will increase in the next 12 months, although there have been slowdowns in both areas since last year. Two-thirds of this year's respondents (67 percent) predicted that the IT operating budgets at their organizations will increase (similar to last year's finding). Among those predicting an increase, 31 percent reported a probable increase and 36 percent reported a definite increase. The percentage of respondents predicting no budget change increased to 20 percent from last year's 15 percent. Fewer respondents anticipated a budget decrease—12 percent this year compared with 14 percent in 2001.

Reasons for budget increase cited in the 2002 survey were similar to those cited in the 2001 survey. The primary reason cited for an anticipated budget increase was an overall growth in number of systems and technologies (39 percent in 2002). The next most frequently cited reason was a call for increased spending in long-term IT plans or organizational strategic plans (25 percent in 2002). Overall budget increases were cited by 16 percent of respondents.

Although almost the same number of senior-level executives reported a probable or definite budget increase this year as last year, the amount of the projected increase is smaller. In 2001, 74 percent of respondents stated that their budgets would increase by 10 percent or less. This year, 83 percent of respondents believed that their IT budgets would increase by 10 percent or less.

The amount of funds controlled outside the IT department was reported to have increased. Last year, 21 percent of respondents indicated that more than 20 percent of the IT spending for their facility was controlled outside the IT department. In 2002, 25 percent reported this arrangement.

Almost two-thirds of respondents (64 percent) indicated that they work at healthcare facilities employing 24 or fewer FTEs in the IT department. Compared to 2001 results, fewer IT managers reported a projected staff increase—47 percent in 2002 versus 60 percent in 2001. Far more respondents reported this year that their staffing would not change (46 percent) than did last year (27 percent). The greatest technology staffing needs were identified as network and architecture support (38 percent), PC/server support (34 percent), and Intranet/Internet (32 percent).

Figures:

12. Survey Sponsors

About Superior Consultant Company

Superior Consultant specializes in Digital Business Transformation™ services that enable clients to thrive in the information-driven economy. Superior's IT consulting, outsourcing, and management consulting services -- coupled with the company's 17 years of experience providing innovative solutions to the healthcare industry -- enable clients to meet their fiscal challenges without compromising clinical quality. For more information on Superior Consultant, simply dial 1-800-PRO-INFO and enter the Company ticker: SUPC (a no-cost fax-on-demand service) or visit the Company's Web site at www.superiorconsultant.com.

About HIMSS

The Healthcare Information and Management Systems Society (HIMSS) provides leadership in healthcare for the management of technology, information, and change through member services, education and networking opportunities, and publications. Members are kept abreast of the latest industry information and research, as well as legislative and policy issues. Based in Chicago with an office in Ann Arbor, Mich., HIMSS has 37 chapters and more than 12,000 individual members working in healthcare organizations throughout the world. Individual members include healthcare professionals in hospitals, corporate healthcare systems, clinical practice groups, HIT supplier organizations, healthcare consulting firms, and government settings in professional levels ranging from senior staff to CIOs and CEOs. HIMSS also serves corporate members, which include suppliers and consultants in the health information and management systems industry. HIMSS' Web site is www.himss.org.

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 13th Annual HIMSS Leadership Survey sponsored by Superior Consultant Company.

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