

Medical Records Institute's Sixth Annual Survey of Electronic Health Record Trends and Usage for 2004

The results of the MRI Survey of EHR Trends and Usage are displayed on this web site for you to review and refer to at no cost. A total of 808 individuals responded to the survey. However, to increase relevancy and reduce bias, responses from vendors, consultants, and payers are not included in the results. Therefore, the results that follow include only provider responses with a total database size of 436. The data includes responses from April 30th through June 11th, 2004. The EHR Survey includes the results from all sixteen questions in the survey, including the first four demographic questions.

The MRI Survey of EHR Trends and Usage reveals insights into the:

- Motivations driving the need for Electronic Health Record systems
- EHR applications and functions being implemented or planned
- IT platforms used to support EHR applications
- EHR configurations for different environments
- Data capture methods being employed
- Major barriers to implementing EHR systems
- Mobile/Wireless healthcare priorities, applications, platforms, and concerns

How to Interpret the Survey Results

Users of this survey should keep mind that the method used to gather the information is not strictly scientific. The information in this survey is a compilation of data from individuals that chose to respond to email broadcasts inviting them to fill in the survey at the MRI or TEPR website. While the respondents to this survey are not representative of the medical community as a whole, they are clearly knowledgeable about healthcare IT solutions and plans. This level of knowledge among the respondents adds greatly to the value of the survey results.

The survey results should not be interpreted as a measure of the actual implementation levels of EHR and mobile/wireless applications for the healthcare industry. However, the results are valuable as an indicator of the relative implementation levels or plans of the respondents.

To facilitate comparison, the survey results include:

- Results from prior years if the wording of the questions is essentially the same from year-to-year.
- Market segment results whenever the total for an individual segment is over 100 respondents so that the margin-of-error remains within a reasonable range.

When the survey results are compared from year-to-year, the following three factors should be considered:

- The profile of respondent roles has been fairly consistent over the last three years.
- The profile of decision-makers has been fairly consistent over the last three years.
- The market segment respondent representation has shifted significantly. Over the last three years, the percentage of respondents from the Ambulatory sector has increased, while the percentage of respondents from the Hospital sector has decreased. This shift is depicted in Question 1.

To assist you in forming an appropriate level of confidence for interpreting the results, we have presented the actual number of individuals who responded to each question, plus the margin of error, in the preface or at the bottom of each table where appropriate.

1. Which of the following best describes the environment where you spend most of your workday?

Provider Environment	2002	2003	2004
Ambulatory	26.3%	28.4%	44.5%
Hospitals	51.40%	38.5%	31.4%
IHDSO	12.10%	17.9%	14.9%
Other	10%	15.1%	9.6%
Total Respondents	761	759	436

2. Which of the following best describes your role within your organization?

Preface:

- IT Managers and Professionals include: Medical Information Systems Professionals (i.e., Analyst Strategic Planner, Chief Technology Officer); Health Information Manager, MIS Manager, CIS Manager; Vice President or Director of Information Systems or Chief Information Officer; Program, Applications, or Network Manager; Health Information Administrator, Manager, Director.
- Physicians and Nurses include: Physician; Nurse; Vice President of Medical Services, Medical Director, or Chief Medical Officer.
- Non-IT Management includes: President, Chief Executive Officer, or Executive VP; Vice President of Finance or Chief Operating Officer; Office Manager (Ambulatory Setting); Quality Manager, Officer, or Director; Privacy/Security Manager, Officer, or Director.

Role Categories	2002	2003	2004
IT Managers and Professionals	44.8%	45.0%	46.1%
Physicians and Nurses	22.7%	23.0%	27.3%
Non-IT Management	10.7%	19.0%	14.9%
OTHER	21.8%	13.0%	11.7%
	100.0%	100.0%	100.0%

Respondent Roles for 2004	Number of Respondents	Percent of Total Respondents
Physician	92	21.1%
Health Information Manager, MIS Manager, CIS Manager	54	12.4%
Vice President or Director of Information Systems, or Chief Information Officer	54	12.4%
Medical Information Systems Professional (i.e., Analyst, Strategic Planner, Chief Technology Officer)	45	10.3%
Health Information Administrator, Manager, Director	33	7.6%
President, Chief Executive Officer, or Executive VP	29	6.7%
Vice President of Medical Services, Medical Director, or Chief Medical Officer	16	3.7%
Program, Applications, or Network Manager	15	3.4%
Vice President of Finance or Chief Operating Officer	14	3.2%
Nurse	11	2.5%
Quality Manager, Officer, or Director	10	2.3%
Privacy/Security Manager, Officer, or Director	6	1.4%
Office Manager (Ambulatory Setting)	6	1.4%
Other	51	11.7%
	436	100%

3. How would you describe your role in the EHR decision-making process?

Decision-Making Role	2002	2003	2004
I strongly influence.	53.4%	50.6%	53.4%
I have some influence.	26.5%	28.7%	25.5%
I make the final decision.	10.2%	13.4%	13.8%
I have little influence.	8.5%	4.2%	4.8%
I have no influence.	n/a	2.8%	1.6%
No Response	1.2%	0.3%	0.9%
	100.0%	100.0%	100.0%

4. Where do you work?

2002	2003	2004
United States of America (83.8%)	United States of America (84.9%)	United States of America (86.0%)
Canada (4.6%)	Canada (6.3%)	Canada (4.6%)
Great Britain (1.4%)	Great Britain (0.9%)	Belgium (0.9%)
Australia (1.1%)	Germany (0.9%)	Netherlands (0.7%)
	France (0.7%)	Hong Kong (0.7%)
	Denmark (0.7%)	Great Britain (0.7%)
Other (9.2%)	Other (5.6%)	Other (6.4%)
761 Respondents	759 Respondents	436 Respondents

5. What are the factors that are driving the need for Electronic Health Record (EHR) Systems within your organization?

Preface:

- The results for this question cannot be compared directly to previous years, because this year the question is a combination of two separate questions from previous years.

Analyzed by Market Segments

Motivating Factors	2004	Hospital	Ambulatory	Other
The need to improve clinical processes or workflow efficiency	84.6%	83.9%	87.1%	81.0%
The need to improve quality of care	83.3%	78.8%	86.1%	83.8%
The need to share patient record information among healthcare practitioners and professionals	79.8%	87.6%	69.6%	88.6%
The need to reduce medical errors (improve patient safety)	76.4%	81.0%	69.6%	82.9%
The need to improve clinical data capture	68.3%	67.9%	67.0%	71.4%
The need to improve clinical documentation to support appropriate billing service levels	67.7%	58.4%	78.4%	60.0%
The need to provide access to patient records at remote locations	65.4%	62.0%	67.5%	65.7%
The need to facilitate clinical decision support	63.1%	69.3%	54.1%	71.4%
The need to meet the requirements of legal, regulatory, or accreditation standards	53.7%	48.9%	56.2%	55.2%
The requirement to contain or reduce healthcare delivery costs	51.8%	47.4%	57.2%	47.6%
The need to establish a more efficient and effective information infrastructure as a competitive advantage	51.1%	46.7%	60.3%	40.0%
Other	6.4%	5.8%	4.6%	10.5%
Totals	436	137	194	105
Margin of Error	+/- 4.7%	+/- 8.4%	+/- 7.0%	+/- 9.6%

Analyzed by Respondent Roles

Motivations	Percent of Total Respondents	IT Managers and Professionals	Physicians and Nurses	Non-IT Management
The need to improve clinical processes or workflow efficiency	84.6%	86.6%	84.9%	81.0%
The need to improve quality of care	83.3%	82.1%	87.4%	81.0%
The need to share patient record information among healthcare practitioners and professionals	79.8%	89.1%	70.6%	73.3%
The need to reduce medical errors (improve patient safety)	76.4%	81.1%	73.1%	71.6%
The need to improve clinical data capture	68.3%	72.6%	67.2%	62.1%
The need to improve clinical documentation to support appropriate billing service levels	67.7%	66.7%	74.8%	62.1%
The need to provide access to patient records at remote locations	65.4%	67.2%	63.0%	64.7%
The need to facilitate clinical decision support	63.1%	69.2%	57.1%	75.9%
The need to meet the requirements of legal, regulatory, or accreditation standards	53.7%	54.2%	54.6%	51.7%
The requirement to contain or reduce healthcare delivery costs	51.8%	50.2%	53.8%	52.6%
The need to establish a more efficient and effective information infrastructure as a competitive advantage	51.1%	46.8%	54.6%	55.2%
Other	6.4%	5.5%	4.2%	10.3%
Total Respondents	436	201	119	116
Margin of Error	+/- 4.7%	+/-6.9	+/- 9.0%	+/- 9.1%

6. Please identify the primary and secondary IT platforms that your EHR System is based on.

Preface:

- When comparing the results from 2003 to 2004, take into consideration the shift in demographics (increase in Ambulatory respondents) and the margin of error.
- The percentages for Table B will add up to more than 100% because the respondents were asked to select all that apply.

TABLE A: Primary IT Platforms selected

	2003	2004
Client Server	51.0%	55.1%
Mainframe	28.0%	23.1%
ASP	6.0%	6.9%
Website	6.0%	5.4%
Standalone PC	3.0%	4.2%
Mobile/Wireless Systems	4.0%	2.7%
Remote Computing Option	2.0%	0.9%
Other	0.0%	1.8%
Total Respondents	611	334
Margin of Error	+/- 4.0%	+/- 5.4%

TABLE B: For those that selected a client server system as their primary IT platform

Secondary Platform	2003	2004
Mobile/Wireless Systems	33.3%	32.1%
Website	28.2%	27.2%
Standalone PC	22.0%	19.6%
Client Server	15.9%	13.0%
Remote Computing Option	15.2%	14.7%
Mainframe	14.2%	11.4%
ASP	11.3%	9.8%
Other	1.3%	1.6%

7. What methods do you use to enter clinical information into your EHR?

Preface:

- When comparing the results from 2003 to 2004, take into consideration the shift in demographics (increase in Ambulatory respondents) and the margin of error.
- The percentages will add up to more than 100% because the respondents were asked to select all that apply.

Free Text and/or Unstructured Data Entry	2003 Total In Use	Used More Frequently	Used Less Frequently	2004 Total In Use	Used More Frequently	Used Less Frequently
Using keyboard and mouse	86.1%	71.0%	15.1%	83.7%	66.5%	17.2%
Dictation/transcription (without speech recognition)	69.8%	57.0%	12.8%	68.6%	54.8%	13.8%
Using stylus with Tablet PC or PDA	33.5%	11.9%	21.6%	37.0%	14.8%	22.2%
Dictation/transcription (with speech recognition)	30.5%	8.7%	21.8%	31.7%	10.5%	21.2%
Structured Data Entry						
Keyboard/mouse (using templates or fields or XML DTDs)	75.3%	65.5%	9.8%	75.7%	66.5%	9.2%
Touch screen	23.9%	12.1%	11.8%	30.2%	15.7%	14.5%
Optical character recognition (OCR)	15.0%	3.9%	11.1%	16.6%	5.5%	11.1%
Light pen	11.8%	4.3%	7.5%	13.6%	7.1%	6.5%
Input from other departmental systems within your institution	61.1%	46.5%	24.6%	61.3%	50.8%	10.5%
Document Scanning	58.6%	31.9%	26.7%	59.7%	38.2%	21.5%
Input from other practitioners or EHR systems external to your institution	n/a	n/a	n/a	37.2%	16.9%	20.3%
Input from Patients	n/a	n/a	n/a	25.8%	12.9%	12.9%
Other data capture methods	6.4%	5.1%	1.3%	4.6%	3.7%	0.9%
Total Respondents	611			325		
Margin of Error	+/- 4.0%			+/- 5.4%		

8. If you work in a Hospital, IHDSO, MCO or Other Healthcare Institution (and you have an EHR System), does it support...

Hospital or other Healthcare Settings	2003	2004
Both Inpatient and Outpatient capabilities	82.3%	92.7%
Inpatient capabilities only	17.7%	7.3%
Total Respondents	362	327
Margin of Error	+/- 5.2%	+/- 5.4%

9. If you work in an Ambulatory setting (and you have an EHR System), does it support...

Ambulatory Setting	2003	2004
Integrated with Practice Management Applications	42.0%	40.7%
Interfaced to a Separate Practice Management System	34.9%	37.7%
Standalone	23.1%	21.6%
Total Respondents	281	199
Margin of Error	+/- 5.9%	+/- 6.9%

10. Which of the following applications or functions do you have in use today or planned for implementation?

Preface:

- Percentages are based on the total respondents for the survey (436).
- Margin of error for all portions of Question 10 is +/- 4.7%.
- The percentages will add to more than 100% because the respondents were asked to select all that apply.
- The Survey results for this question should not be interpreted as a measure of the actual implementation levels of EHR components for the healthcare industry as a whole. However, the results are valuable as an indicator of the relative implementation levels or plans of the respondents.

A. EHR Administrative and Financial Applications

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Scheduling	58.0%	12.1%	7.3%	2.3%	0.9%	1.6%
Patient appointments	56.0%	13.3%	7.8%	3.0%	0.9%	1.6%
Billing and accounts receivable	55.5%	9.3%	5.0%	2.3%	0.9%	1.1%
Registration/Admissions /Discharge/Transfer	55.0%	13.3%	7.8%	3.0%	0.9%	1.6%
Claims processing	52.3%	9.4%	5.3%	1.8%	0.9%	1.4%
Master patient index for a single system or site of care	47.0%	9.9%	1.4%	0.5%	3.0%	5.0%
Charge capture and/or coding	46.8%	15.0%	10.1%	2.8%	0.7%	1.4%
Patient eligibility	39.0%	18.2%	12.4%	2.8%	1.4%	1.6%
Master person index or enterprise directory to support multiple facilities	35.1%	15.1%	7.3%	5.5%	1.4%	0.9%

B. EHR Data Capture, Review, and Update Capabilities

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Demographics	59.2%	11.0%	6.4%	2.3%	0.5%	1.8%
Laboratory results	50.2%	16.6%	11.5%	3.7%	0.5%	0.9%
Allergies	47.5%	21.1%	15.6%	3.4%	1.4%	0.7%
Medications being taken	44.7%	24.2%	18.3%	3.9%	1.1%	0.9%
Radiology results	43.3%	19.5%	12.2%	5.3%	0.9%	1.1%
Vital statistics	40.8%	25.1%	17.7%	5.5%	0.5%	1.4%
Past medical history	39.4%	26.5%	19.0%	4.8%	1.6%	1.1%
Discharge summary	38.8%	17.7%	13.1%	2.8%	1.1%	0.7%
Progress Notes	35.3%	29.0%	18.6%	6.0%	2.3%	2.1%
Operative notes	35.3%	17.0%	11.9%	2.8%	1.4%	0.9%
On-site patient intake/history & physical	34.4%	29.1%	18.3%	6.9%	2.5%	1.4%
Problem lists	31.7%	29.6%	19.7%	6.2%	2.1%	1.6%
Referrals or consults	31.0%	28.1%	18.3%	8.0%	0.7%	1.1%
Alerts, warnings, or reminders generated by decision support	28.7%	31.2%	18.1%	8.3%	1.8%	3.0%
OT/PT/RT notes	26.4%	25.6%	15.4%	6.7%	2.1%	1.4%
Post-visit patient education	25.5%	29.1%	16.3%	7.1%	3.2%	2.5%
Pre-visit health screenings, evaluations, or assessments	22.7%	34.0%	22.5%	6.7%	3.4%	1.4%
Problem knowledge couplers	13.8%	31.0%	15.8%	9.2%	2.8%	3.2%

C. EHR Access to Remote Locations by Clinicians

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
EHR Access to Remote Locations	36.7%	20.0%	12.4%	4.6%	1.6%	1.4%

D. Order Entry Applications and Functions

Nurse or staff order entry	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Laboratory	36.0%	20.2%	13.8%	4.6%	1.1%	0.7%
Radiology	30.0%	22.5%	14.7%	5.7%	1.6%	0.5%
Pharmacy	29.6%	21.6%	15.6%	3.7%	1.8%	0.5%
Other	5.3%	2.1%	0.9%	0.5%	0.5%	0.2%
Physician order entry without clinical decision support	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Laboratory	21.6%	20.2%	11.9%	6.9%	0.9%	0.5%
Radiology	18.3%	21.8%	12.4%	7.8%	1.1%	0.5%
Pharmacy	16.7%	19.9%	13.5%	4.8%	0.9%	0.7%
Other	3.7%	3.1%	1.8%	0.9%	0.2%	0.2%
Physician order entry with clinical decision support (i.e., alerts, warnings, reminders, or guidelines):	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Laboratory	13.5%	30.1%	15.6%	10.3%	2.1%	2.1%
Radiology	10.6%	32.3%	16.7%	9.9%	3.9%	1.8%
Pharmacy	17.2%	27.7%	15.8%	8.0%	2.5%	1.4%
Other	2.1%	7.3%	3.4%	2.1%	1.1%	0.7%

E. E-Prescribing to Commercial/Retail Pharmacies

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Access to drug reference information	26.1%	20.8%	14.7%	3.4%	1.6%	1.1%
Medication history review	24.8%	22.2%	14.7%	4.6%	1.8%	1.1%
Drug allergy checking	24.5%	23.2%	15.1%	5.3%	1.4%	1.4%
Drug-drug interactions	23.6%	23.1%	15.6%	5.0%	1.4%	1.1%
Prescription renewal	19.3%	28.7%	17.7%	6.4%	2.8%	1.8%
New prescriptions	17.9%	29.6%	18.6%	6.7%	2.5%	1.8%
Patient eligibility verification	16.5%	28.6%	18.3%	6.4%	1.8%	2.1%
Refill tracking	14.4%	27.5%	17.2%	6.2%	2.3%	1.8%
Patient eligibility for specific drug within health plan formulary	8.3%	31.3%	19.5%	6.7%	2.1%	3.0%

F. Use of Continuity of Care Record (CCR)

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Referral to another practitioner	14.0%	28.0%	13.8%	8.7%	3.7%	1.8%
Transfer to another care setting	11.7%	26.6%	12.4%	8.3%	4.1%	1.8%
Discharge without a referral or transfer	12.2%	20.6%	9.6%	6.2%	3.2%	1.6%
Personal health record	7.3%	28.5%	10.8%	8.5%	5.5%	3.7%
Other	2.3%	3.0%	1.1%	0.9%	0.5%	0.5%

G. Access to Reference Information

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Drug reference information	38.5%	19.7%	14.0%	3.0%	1.6%	1.1%
Drug formularies	31.9%	21.9%	16.7%	3.2%	1.1%	0.9%
Clinical guidelines and protocols	31.7%	24.3%	13.3%	7.1%	2.5%	1.4%
Administrative policies and practices	29.4%	19.9%	11.2%	5.5%	1.6%	1.6%

H. Email

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Between practitioners	48.9%	13.2%	8.5%	2.8%	0.5%	1.4%
Between patients and practitioners	20.2%	27.1%	11.5%	10.3%	3.2%	2.1%

I. Clinical Data Repositories

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Supporting storage of EHR data, text, and reimbursement codes (ICD and CPT codes)	42.2%	14.9%	8.9%	2.8%	2.1%	1.1%
Also supports storage of clinical codes (LOINC, MEDCIN, SNOMED, etc.)	21.1%	25.0%	13.3%	7.1%	2.8%	1.8%
Also supports storage of voice or sound	11.0%	27.0%	11.9%	7.8%	3.4%	3.9%
Also supports storage of clinical images	25.5%	29.0%	16.5%	8.0%	3.4%	1.1%

J. Medical Records Document Imaging Systems

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Interim to a clinical data repository	16.7%	17.7%	11.2%	3.0%	2.8%	0.7%
Supplement to a clinical data repository	19.5%	20.1%	11.0%	4.8%	3.4%	0.9%

K. A Data Warehouse or Secondary Database of Patient Information to Support Retrospective Analysis of Outcomes, Utilization, and Clinical Processes

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
A data warehouse or secondary database of patient information...	21.8%	21.5%	11.9%	5.7%	2.5%	1.4%

L. Clinical Trial Applications

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Clinical Trial Applications	8.5%	17.7%	6.2%	5.3%	3.9%	2.3%

11. What are the major barriers to your plans for implementing an EHR System?

Preface:

- When comparing the results from 2004 to the previous two years, take into consideration the shift in demographics (increase in Ambulatory respondents) and the margin of error.
- The percentages will add to more than 100% because the respondents were asked to select all that apply.

Barriers	2002	2003	2004
Lack of adequate funding or resources	58.5%	64.2%	55.5%
Inability to find an EHR solution or components at an affordable cost	31.7%	32.3%	36.0%
Lack of support by medical staff	35.4%	37.2%	35.4%
Difficulty in finding an EHR solution that is not fragmented among vendors or IT platforms	28.7%	30.2%	34.1%
Difficulty in creating a migration plan from paper to electronic health records	31.2%	29.2%	27.6%
Unable to find an EHR solution that meets our application or technical requirements	22.9%	27.3%	27.3%
Inadequate or incomplete healthcare information standards or code sets	25.2%	22.9%	27.3%
Difficulty in building a strong business case (ROI)	20.1%	21.9%	24.7%
Difficulty in evaluating EHR solutions or components	24.9%	17.2%	23.1%
Lack of structured medical terminologies	12.4%	18.1%	16.9%
Other	7.8%	8.0%	11.0%
Total Respondents	477	576	308
Margin of Error	+/- 4.6%	+/- 4.2%	+/- 5.6%

12. What priority would you give to the following reasons for implementing mobile health/wireless solutions within your organization?

Preface:

- Percentages are based on the total respondents for Question 12 (326).
- Margin of error for Question 12 is +/- 5.4%.

Priorities	High	Medium	Low
Strengthens the ability to retain and recruit practitioners	42.3%	42.0%	13.2%
Enhances the public image of the organization as being technologically advanced	31.3%	47.2%	19.9%
Improves patient safety	19.3%	25.8%	52.1%
Supports the organizations strategy to expand the use of information technology	13.5%	42.9%	41.4%
Enhances clinical workflow and/or efficiency	6.7%	24.5%	68.7%

13. If you are using mobile/wireless devices for healthcare applications, which ones are they?

Preface:

- The total number of respondents to Question 13 is 252.
- Percentages are based on the total respondents for the survey (436) to facilitate comparison with the results from the previous year.
- When comparing the results from 2003 to 2004, take into consideration the shift in demographics (increase in Ambulatory respondents) and the margin of error.
- The percentages will add to more than 100% because the respondents were asked to select all that apply.

Mobile/Wireless Devices	2003	2004
Laptop/notebook Computer	46.9%	41.3%
Personal Digital Assistant (PDA)	36.5%	29.8%
Tablet PC	20.4%	25.5%
Cell Phone	16.7%	22.0%
Other	3.3%	1.6%
Total Respondents	759	436
Margin of Error	+/- 3.6%	+/- 4.7%

14. What mobile healthcare applications do you use or plan to implement in your facility within the next four years?

Preface:

- Percentages are based on the total respondents for the survey (436).
- Margin of error for all portions of Question 14 is +/- 4.7%.
- The percentages may add to more than 100% because the respondents were asked to select all that apply.

A. Administrative/Financial Management

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Scheduling	23.2%	19.0%	10.3%	5.5%	2.1%	1.1%
Charge Capture	19.7%	25.7%	14.9%	6.4%	3.4%	0.9%
E-Signature	15.6%	31.0%	18.8%	7.8%	3.0%	1.4%
Asset Tracking (Bar coding, RFID)	8.0%	27.3%	11.5%	10.8%	3.0%	2.1%
Location access (geo-fencing)	5.0%	16.5%	7.3%	4.6%	2.5%	2.1%

B. Access To Reference Information

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Drug-to-drug interactions	23.2%	30.5%	19.5%	7.1%	3.4%	0.5%
Database access	21.1%	28.0%	17.7%	7.1%	2.8%	0.5%
Clinical guidelines and protocols	20.2%	31.2%	17.4%	9.4%	3.7%	0.7%
Alerts, warnings, reminders	19.3%	33.3%	19.7%	8.9%	3.9%	0.7%
Formularies	18.1%	33.5%	21.8%	7.8%	3.4%	0.5%
Internet web access	3.0%	20.2%	11.7%	5.0%	3.2%	0.2%

C. Access To Patient Data

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Patient record	30.7%	26.4%	17.2%	6.0%	2.5%	0.7%
Lab and other test results	29.8%	26.1%	17.7%	6.0%	1.8%	0.7%
PACS access	12.8%	22.2%	11.2%	6.4%	2.1%	2.5%
Still image access	12.2%	25.0%	14.0%	6.9%	2.3%	1.8%
WWAN Cardiac telemetry	4.1%	14.4%	3.9%	4.6%	3.0%	3.0%
Remote ICU monitoring	3.2%	22.5%	7.8%	6.9%	4.4%	3.4%

D. Capture of Patient Care Documentation

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Dictation capture	21.3%	19.3%	13.1%	3.4%	2.3%	0.5%
Electronic data capture	21.3%	25.2%	16.3%	5.5%	2.8%	0.7%
Order entry	18.6%	29.4%	19.5%	6.4%	2.8%	0.7%
Nursing data capture (vitals, I/Os)	17.9%	28.0%	17.0%	6.9%	3.4%	0.7%

E. Medications

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
E-prescribing	11.5%	37.2%	22.7%	9.2%	4.4%	0.9%
Medication management (i.e. bar-coding at bedside)	4.1%	31.0%	13.5%	12.6%	3.2%	1.6%

F. Communication

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Email	30.7%	14.7%	9.6%	3.0%	1.6%	0.5%
Nursing/staff voice communication	11.0%	17.2%	9.2%	4.8%	1.8%	1.4%
Videoconferencing	11.0%	14.0%	4.6%	4.4%	2.8%	2.3%
Document transfer	8.9%	19.7%	10.6%	4.8%	2.5%	1.8%
Push-to-talk voice communication	8.5%	16.1%	6.7%	4.6%	2.5%	2.3%
Video capture and transmission	4.1%	17.7%	5.5%	5.7%	3.2%	3.2%
Other	0.2%	0.9%	0.7%	0.2%	0.0%	0.0%

15. What wireless connectivity technology are you using?

Preface:

- Percentages are based on the total respondents for the survey (436).
- Margin of error for all portions of Question 15 is +/- 4.7%.
- The percentages may add to more than 100% because the respondents were asked to select all that apply.

Wireless Connectivity Technology	In Use Today
WiFi (wireless local area networks)	32.1%
Digital cellular service	13.3%
WPAN (wireless personal area networks): <i>for example</i> - Infrared, Bluetooth	6.4%
Analog cellular service	3.0%
Not sure	10.8%
None	19.0%

16. What do you consider to be the major concerns/problems related to implementation of mobile/wireless healthcare devices and applications?

Preface:

- When comparing the results from 2004 with the previous two years, take into consideration the shift in demographics (increase in Ambulatory respondents) and the margin of error.
- The percentages may add to more than 100% because the respondents were asked to select all that apply.

Major Concerns/Problems	2002	2003	2004
Lack of security of confidential information when sending/receiving	52.1%	51.2%	47.6%
Concern about unauthorized use of mobile/wireless devices that have been lost or stolen	39.5%	44.6%	42.8%
Inconsistent connectivity when roaming within the healthcare facility	n/a	n/a	36.6%
Slow data transfer rates to/from the host system	38.7%	35.4%	35.6%
Lack of a strategy or implementation plan for adoption	n/a	n/a	29.5%
Interference with medical devices	20.8%	24.2%	27.1%
Delays in data synchronization with host systems or applications	38.7%	31.9%	26.4%
Lack of interoperability with other devices or systems	34.6%	31.5%	24.0%
Inability to achieve workflow integration	n/a	28.0%	20.2%
Difficult to use	31.2%	31.2%	13.7%
Other	10.0%	13.0%	7.5%
Total Respondents	491	596	292
Margin of Error	+/- 4.5%	+/- 4.1%	+/-5.7%