

# **Medical Records Institute's Seventh Annual Survey of Electronic Health Record Trends and Usage for 2005**

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 438 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 280. The data includes responses from April 7<sup>th</sup> through May 18<sup>th</sup>, 2005. 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 in 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 remained generally the same over the last four years.
- The profile of decision-makers reveals a gradual increase over the last four years in the representation of final decision-makers.
- The market segment respondent representation has shifted significantly. Over the last four 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?**

<b>Provider Environment</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Ambulatory	26.3%	28.4%	44.5%	48.6%
Hospitals	51.4%	38.5%	31.4%	28.2%
IHDSO	12.1%	17.9%	14.9%	12.5%
Other	10.0%	15.1%	9.6%	10.7%
Total Respondents	761	759	436	280

## 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.

<b>Role Categories</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
IT Managers and Professionals	44.8%	45.0%	46.1%	41.8%
Physicians and Nurses	22.7%	23.0%	27.3%	27.1%
Non-IT Management	10.7%	19.0%	14.9%	18.9%
OTHER	21.8%	13.0%	11.7%	12.1%
	100.0%	100.0%	100.0%	100.0%

<b>Respondent Roles for 2005</b>	<b>Number of Respondents</b>	<b>Percent of Total Respondents</b>
Physician	58	20.70%
Vice President or Director of Information Systems, or Chief Information Officer	34	12.10%
Health Information Manager, MIS Manager, CIS Manager	31	11.10%
President, Chief Executive Officer, or Executive VP	27	9.60%
Medical Information Systems Professional (i.e., Analyst, Strategic Planner, Chief Technology Officer)	24	8.60%
Health Information Administrator, Manager, Director	20	7.10%
Vice President of Finance or Chief Operating Officer	11	3.90%
Vice President of Medical Services, Medical Director, or Chief Medical Officer	10	3.60%
Program, Applications, or Network Manager	8	2.90%
Nurse	8	2.90%
Office Manager (Ambulatory Setting)	7	2.50%
Quality Manager, Officer, or Director	5	1.80%
Privacy/Security Manager, Officer, or Director	3	1.10%
Other	34	12.10%
	280	100%

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

<b>Decision-Making Role</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
I strongly influence.	53.4%	50.6%	53.4%	52.1%
I have some influence.	26.5%	28.7%	25.5%	25.7%
I make the final decision.	10.2%	13.4%	13.8%	17.5%
I have little influence.	8.5%	4.2%	4.8%	2.5%
I have no influence.	n/a	2.8%	1.6%	1.1%
No Response	1.2%	0.3%	0.9%	1.1%
	100.0%	100.0%	100.0%	100.0%

#### 4. Where do you work?

2002	2003	2004	2005
United States of America (83.8%)	United States of America (84.9%)	United States of America (86.0%)	United States of America (90.4%)
Canada (4.6%)	Canada (6.3%)	Canada (4.6%)	Canada (2.9%)
Great Britain (1.4%)	Great Britain (0.9%)	Belgium (0.9%)	India (1.1%)
Australia (1.1%)	Germany (0.9%)	Netherlands (0.7%)	Australia (0.7%)
	France (0.7%)	Hong Kong (0.7%)	Belgium (0.7%)
	Denmark (0.7%)	Great Britain (0.7%)	Great Britain (0.7%)
Other (9.2%)	Other (5.6%)	Other (6.4%)	Other (3.6%)
761 Respondents	759 Respondents	436 Respondents	280 Respondents

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

### Preface:

- The results reported for this question only show 2004 and 2005. This is because the structure for this topic was changed in 2004 when the survey consolidated two separate questions addressing the driving forces for implementing EHRs into one question.

### Analyzed by Trends

Motivating Factors	2004	2005
The need to improve clinical processes or workflow efficiency	84.6%	89.3%
The need to improve quality of care	83.3%	85.0%
The need to share patient record information among healthcare practitioners and professionals	79.8%	81.1%
The need to reduce medical errors (improve patient safety)	76.4%	76.1%
The need to provide access to patient records at remote locations	65.4%	67.9%
The need to improve clinical documentation to support appropriate billing service levels	67.7%	67.1%
The need to improve clinical data capture	68.3%	64.6%
The need to facilitate clinical decision support	63.1%	60.7%
The requirement to contain or reduce healthcare delivery costs	51.8%	54.6%
The need to establish a more efficient and effective information infrastructure as a competitive advantage	51.1%	53.6%
The need to meet the requirements of legal, regulatory, or accreditation standards	53.7%	50.0%
Other	6.4%	5.7%
Totals	436	280
Margin of Error	+/- 4.7%	+/- 5.8%

### OBSERVATIONS FOR QUESTION 5:

- The “need to share patient record information” was the number one motivator for implementing electronic health records from 1999-2002. In 2003, the “need to improve clinical processes or workflow efficiency” became the number one motivator and has remained so through 2005.
- The top four motivations for implementing EHRs have remained consistent for 2004 and 2005. They are:
  - The need to improve clinical processes or workflow efficiency
  - The need to improve quality of care
  - The need to share patient record information among healthcare practitioners and professionals
  - The need to reduce medical errors (improve patient safety)

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

### Preface:

- This table only displays the total and ambulatory market segment because the number of respondents for each of the other market segments was less than 100, so the margin-of-error exceeds the survey standard for display.

### Analyzed by Market Segments

<b>Motivating Factors</b>	<b>2005</b>	<b>Ambulatory</b>
The need to improve clinical processes or workflow efficiency	89.3%	91.2%
The need to improve quality of care	85.0%	85.3%
The need to share patient record information among healthcare practitioners and professionals	81.1%	66.9%
The need to reduce medical errors (improve patient safety)	76.1%	69.1%
The need to provide access to patient records at remote locations	67.9%	65.4%
The need to improve clinical documentation to support appropriate billing service levels	67.1%	76.5%
The need to improve clinical data capture	64.6%	61.0%
The need to facilitate clinical decision support	60.7%	50.7%
The requirement to contain or reduce healthcare delivery costs	54.6%	61.8%
The need to establish a more efficient and effective information infrastructure as a competitive advantage	53.6%	53.7%
The need to meet the requirements of legal, regulatory, or accreditation standards	50.0%	44.1%
Other	5.7%	5.1%
Totals	280	136
Margin of Error	+/- 5.8%	+/- 8.4%

### OBSERVATIONS FOR QUESTION 5 AMBULATORY MARKET SEGMENT:

1. The motivating forces in the Ambulatory segment are similar to the total responses except for, “the need to improve clinical documentation to support appropriate billing service levels” which is ranked third, while “the need to share patient record information among healthcare practitioners and professionals” is only ranked fifth.

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

**Preface:**

- When comparing the results from 2003 to 2005, 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**

	<b>2003</b>	<b>2004</b>	<b>2005</b>
Client Server	51.0%	55.1%	53.2%
Mainframe	28.0%	23.1%	25.5%
Standalone PC	3.0%	4.2%	5.1%
ASP	6.0%	6.9%	4.2%
Website	6.0%	5.4%	3.2%
Remote Computing Option	2.0%	0.9%	3.2%
Mobile/Wireless Systems	4.0%	2.7%	2.8%
Other	0.0%	1.8%	1.9%
Not Applicable	--	--	0.9%
Total Respondents	611	334	216
Margin of Error	+/- 4.0%	+/- 5.4%	+/- 6.6%

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

<b>Secondary Platform</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Mobile/Wireless Systems	33.3%	32.1%	30.4%
Standalone PC	22.0%	19.6%	25.2%
Website	28.2%	27.2%	24.3%
Client Server	15.9%	13.0%	14.8%
ASP	11.3%	9.8%	14.8%
Remote Computing Option	15.2%	14.7%	13.9%
Mainframe	14.2%	11.4%	8.7%
Other	1.3%	1.6%	0.0%

**OBSERVATIONS FOR QUESTION 6:**

1. During the last three years, there has been no significant change in the rank order of the primary or secondary IT platforms used for EHR systems.

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

### Preface:

- When comparing the results from 2003 to 2005, 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.

	2003 Total In Use	Used More Frequently	2004 Total In Use	Used More Frequently	2005 Total In Use	Used More Frequently
<b>Free Text and/or Unstructured Data Entry</b>						
Using keyboard and mouse	86.1%	71.0%	83.7%	66.5%	86.4%	67.1%
Dictation/transcription (without speech recognition)	69.8%	57.0%	68.6%	54.8%	64.8%	51.6%
Using stylus with Tablet PC or PDA	33.5%	11.9%	37.0%	14.8%	40.4%	19.7%
Dictation/transcription (with speech recognition)	30.5%	8.7%	31.7%	10.5%	37.1%	14.6%
<b>Structured Data Entry</b>						
Keyboard/mouse (using templates or fields or XML DTDs)	75.3%	65.5%	75.7%	66.5%	78.4%	71.8%
Touch screen	23.9%	12.1%	30.2%	15.7%	27.7%	16.4%
Optical character recognition (OCR)	15.0%	3.9%	16.6%	5.5%	16.4%	4.2%
Light pen	11.8%	4.3%	13.6%	7.1%	9.9%	3.3%
<b>Input from other departmental systems within your institution</b>	61.1%	46.5%	61.3%	50.8%	62.4%	49.8%
<b>Document Scanning</b>	58.6%	31.9%	59.7%	38.2%	67.1%	46.9%
<b>Input from other practitioners or EHR systems external to your institution</b>	n/a	n/a	37.2%	16.9%	31.5%	16.0%
<b>Input from Patients</b>	n/a	n/a	25.8%	12.9%	24.9%	8.9%
<b>Other data capture methods</b>	6.4%	5.1%	4.6%	3.7%	5.6%	3.8%
Total Respondents	611		325		213	
Margin of Error	+/- 4.0%		+/- 5.4%		+/- 6.6%	

### OBSERVATIONS FOR QUESTION 7:

1. There has been a steady increase over the last three years in the use of:
  - a. Use of stylus w/ Tablet PC and PDA
  - b. Dictation/transcription (with speech recognition)
  - c. Document Scanning

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

**Preface:**

- Please note that the number of responses to Questions 8 and 9 were very low (just barely exceeding the survey minimum standard of 100), and therefore the margins of error are relatively high at +/- 9.6% and +/- 8.9% respectively.

<b>Hospital or other Healthcare Settings</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Both Inpatient and Outpatient capabilities	82.3%	92.7%	88.3%
Inpatient capabilities only	17.7%	7.3%	11.7%
Total Respondents	362	327	103
Margin of Error	+/- 5.2%	+/- 5.4%	+/- 9.6%

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

<b>Ambulatory Setting</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Integrated with Practice Management Applications	42.0%	40.7%	44.6%
Interfaced to a Separate Practice Management System	34.9%	37.7%	34.7%
Standalone	23.1%	21.6%	20.7%
Total Respondents	281	199	121
Margin of Error	+/- 5.9%	+/- 6.9%	+/- 8.9%

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

### Preface:

- The results for Question 10 are presented in two tables for each section. The first table shows the results ranked high to low by “In Use Today” for 2005; the second table shows the results ranked high to low by “Total Planned” for 2005 and also shows the results from 2004 for comparison.
- Percentages are based on the total respondents for the survey (280).
- The margin of error for all portions of Question 10 is +/- 5.8%.
- 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
Billing and accounts receivable	66.4%	14.3%	7.5%	3.9%	1.1%	1.8%
Claims processing	62.5%	14.3%	8.9%	2.9%	1.1%	1.4%
Scheduling	61.4%	20.3%	14.6%	3.2%	1.1%	1.4%
Patient appointments	58.9%	20.0%	13.9%	3.6%	0.4%	2.1%
Registration/Admissions /Discharge/Transfer	58.6%	15.8%	12.5%	1.8%	0.4%	1.1%
Charge capture and/or coding	52.5%	23.6%	18.6%	3.2%	1.1%	0.7%
Master patient index for a single system or site of care	45.7%	15.6%	12.1%	2.1%	0.7%	0.7%
Patient eligibility	44.3%	22.9%	17.5%	3.6%	0.7%	1.1%
Master person index or enterprise directory to support multiple facilities	36.1%	18.6%	8.9%	6.1%	2.5%	1.1%

	2005 Total Planned	2004 Total Planned	2005 In Use Today	2004 In Use Today
Charge capture and/or coding	23.6%	15.0%	52.5%	46.8%
Patient eligibility	22.9%	18.2%	44.3%	39.0%
Scheduling	20.3%	12.1%	61.4%	58.0%
Patient appointments	20.0%	13.3%	58.9%	56.0%
Master person index or enterprise directory to support multiple facilities	18.6%	15.1%	36.1%	35.1%
Registration/Admissions /Discharge/Transfer	15.8%	13.3%	58.6%	55.0%
Master patient index for a single system or site of care	15.6%	9.9%	45.7%	47.0%
Billing and accounts receivable	14.3%	9.3%	66.4%	55.5%
Claims processing	14.3%	9.4%	62.5%	52.3%

**OBSERVATIONS FOR QUESTION 10A:**

1. The implementation levels of EHR Administrative and Financial Applications in use today appear to show an increase, across the board, compared to last year.
2. The two applications in use today with the greatest increase compared to last year appear to be Billing & Accounts Receivable and Claims Processing which may reflect the HIPAA compliance deadlines.
3. There appears to be an increase in planned implementations across the board.
4. There appears to be a significant increase in planned implementations for charge capture, patient eligibility, scheduling, and patient appointments.

**B. EHR Data Capture, Review, and Update Capabilities**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Demographics	66.8%	14.6%	8.9%	2.9%	1.4%	1.4%
Laboratory results	51.8%	26.1%	18.9%	5.4%	1.1%	0.7%
Medications being taken	50.4%	29.3%	19.6%	7.5%	1.1%	1.1%
Allergies	50.0%	33.2%	24.3%	6.1%	1.4%	1.4%
Vital statistics	45.7%	29.6%	21.4%	6.1%	1.4%	0.7%
Past medical history	43.2%	33.9%	21.4%	9.3%	2.1%	1.1%
Radiology results	42.9%	27.8%	21.1%	4.6%	1.4%	0.7%
On-site patient intake/history & physical	41.1%	33.9%	21.4%	9.3%	2.1%	1.1%
Progress Notes	40.7%	33.5%	21.4%	8.9%	1.4%	1.8%
Discharge summary	37.9%	23.9%	15.7%	5.4%	2.1%	0.7%
Problem lists	36.8%	34.3%	22.9%	8.6%	2.1%	0.7%
Referrals or consults	36.1%	29.6%	18.2%	8.2%	2.5%	0.7%
Operative notes	35.7%	22.5%	13.9%	6.1%	1.8%	0.7%
Alerts, warnings, or reminders generated by decision support	32.9%	37.9%	22.5%	11.4%	2.9%	1.1%
OT/PT/RT notes	32.1%	26.4%	16.4%	7.1%	1.8%	1.1%
Pre-visit health screenings, evaluations, or assessments	29.3%	36.5%	22.5%	11.8%	1.8%	0.4%
Post-visit patient education	27.1%	32.2%	20.0%	9.3%	1.8%	1.1%
Problem knowledge couplers	17.1%	32.1%	17.1%	11.8%	1.8%	1.4%

<b>B. EHR Data Capture, Review, and Update Capabilities</b>	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>	<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Alerts, warnings, or reminders generated by decision support	37.9%	31.2%	32.9%	28.7%
Pre-visit health screenings, evaluations, or assessments	36.5%	34.0%	29.3%	22.7%
Problem lists	34.3%	29.6%	36.8%	31.7%
Past medical history	33.9%	26.5%	43.2%	39.4%
On-site patient intake/history & physical	33.9%	29.1%	41.1%	34.4%
Progress Notes	33.5%	29.0%	40.7%	35.3%
Allergies	33.2%	21.1%	50.0%	47.5%
Post-visit patient education	32.2%	29.1%	27.1%	25.5%
Problem knowledge couplers	32.1%	31.0%	17.1%	13.8%
Vital statistics	29.6%	25.1%	45.7%	40.8%
Referrals or consults	29.6%	28.1%	36.1%	31.0%
Medications being taken	29.3%	24.2%	50.4%	44.7%
Radiology results	27.8%	19.5%	42.9%	43.3%
OT/PT/RT notes	26.4%	25.6%	32.1%	26.4%
Laboratory results	26.1%	16.6%	51.8%	50.2%
Discharge summary	23.9%	17.7%	37.9%	38.8%
Operative notes	22.5%	17.0%	35.7%	35.3%
Demographics	14.6%	11.0%	66.8%	59.2%

**OBSERVATIONS FOR QUESTION 10B:**

1. The implementation levels in use today appear to show an increase, across the board, compared to last year.
2. The greatest increase appears to be the implementation levels for these five applications in use today:
  - a. medications being taken
  - b. vital statistics
  - c. problem lists
  - d. OT/PT/RT
  - e. Pre-Visit Health Screenings
3. The planned implementation levels appear to show an increase, across the board, compared to last year.
4. The nine highest planned implementations appear to be for:
  - a. Alerts, warnings, or reminders generated by decision support
  - b. Pre-visit health screenings, evaluations, or assessments
  - c. Problem lists
  - d. Past medical history
  - e. On-site patient intake/history & physical
  - f. Progress Notes
  - g. Allergies
  - h. Post-visit patient education
  - i. Problem knowledge couplers

**C. EHR Access from Remote Locations by Clinicians**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
<b>EHR Access from Remote Locations</b>	42.1%	28.9%	18.9%	7.1%	2.1%	0.7%

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>		<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
<b>EHR Access from Remote Locations</b>	28.9%	20.0%		42.1%	36.7%

**OBSERVATIONS FOR QUESTION 10C:**

1. Access to EHRs from remote locations shows increases for both in use and planned implementations.

#### D. Order Entry Applications and Functions

<b>Nurse or staff order entry</b>	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Laboratory	31.8%	21.1%	12.1%	6.1%	1.8%	1.1%
Radiology	27.9%	20.0%	11.4%	6.1%	1.8%	0.7%
Pharmacy	30.4%	20.7%	11.8%	6.4%	2.1%	0.4%
Other	6.4%	7.9%	3.9%	2.5%	0.4%	1.1%
<b>Physician order entry without clinical decision support</b>	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Laboratory	14.6%	19.6%	12.1%	5.7%	1.4%	0.4%
Radiology	11.8%	20.4%	11.0%	7.8%	1.1%	0.5%
Pharmacy	12.9%	19.0%	11.1%	5.0%	2.5%	0.4%
Other	2.9%	5.1%	2.9%	1.4%	0.4%	0.4%
<b>Physician order entry with clinical decision support (i.e., alerts, warnings, reminders, or guidelines):</b>	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Laboratory	10.4%	30.7%	13.2%	10.7%	5.4%	1.4%
Radiology	8.9%	31.4%	13.2%	11.1%	5.7%	1.4%
Pharmacy	11.1%	31.1%	13.9%	10.0%	6.1%	1.1%
Other	2.1%	8.6%	4.3%	1.8%	2.1%	0.4%

<b>Nurse or staff order entry</b>	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>	<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Laboratory	21.1%	20.2%	31.8%	36.0%
Pharmacy	20.7%	21.6%	30.4%	29.6%
Radiology	20.0%	22.5%	27.9%	30.0%
Other	7.9%	2.1%	6.4%	5.3%
<b>Physician order entry without clinical decision support</b>	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>	<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Radiology	20.4%	21.8%	11.8%	18.3%
Laboratory	19.6%	20.2%	14.6%	21.6%
Pharmacy	19.0%	19.9%	12.9%	16.7%
Other	5.1%	3.1%	2.9%	3.7%
<b>Physician order entry with clinical decision support (i.e., alerts, warnings, reminders, or guidelines):</b>	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>	<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Radiology	31.4%	32.3%	8.9%	10.6%
Pharmacy	31.1%	27.7%	11.1%	17.2%
Laboratory	30.7%	30.1%	10.4%	13.5%
Other	8.6%	7.3%	2.1%	2.1%

#### **OBSERVATIONS FOR QUESTION 10D:**

1. This is the first year when “Order Entry Applications” failed to show growth.
  - a. In general, “Order Entry Applications” appear to show a slight decline for in use today.
  - b. In general, total planned “Order Entry Applications” appear about the same as last year.

**E. E-Prescribing to Commercial/Retail Pharmacies**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Access to drug reference information	31.4%	27.1%	19.3%	4.6%	1.1%	2.1%
Medication history review	28.2%	33.2%	22.1%	6.8%	2.5%	1.8%
Drug-drug interactions	28.2%	33.6%	21.1%	7.5%	2.5%	2.5%
New prescriptions	26.4%	35.0%	22.9%	6.8%	3.2%	2.1%
Drug allergy checking	26.1%	34.3%	22.9%	6.8%	2.1%	2.5%
Prescription renewal	26.1%	34.9%	23.2%	6.4%	3.2%	2.1%
Refill tracking	22.1%	34.2%	21.4%	7.1%	3.6%	2.1%
Patient eligibility verification	13.2%	36.8%	22.9%	8.9%	3.2%	1.8%
Patient eligibility for specific drug within health plan formulary	12.5%	37.1%	22.1%	9.3%	3.2%	2.5%

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>	<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Patient eligibility for specific drug within health plan formulary	37.1%	31.3%	12.5%	8.3%
Patient eligibility verification	36.8%	28.6%	13.2%	16.5%
New prescriptions	35.0%	29.6%	26.4%	17.9%
Prescription renewal	34.9%	28.7%	26.1%	19.3%
Drug allergy checking	34.3%	23.2%	26.1%	24.5%
Refill tracking	34.2%	27.5%	22.1%	14.4%
Drug-drug interactions	33.6%	23.1%	28.2%	23.6%
Medication history review	33.2%	22.2%	28.2%	24.8%
Access to drug reference information	27.1%	20.8%	31.4%	26.1%

**OBSERVATIONS FOR QUESTION 10E:**

1. There appears to be a general increase in “E-prescribing Applications” in use today and total planned implementations across the board.
2. The rank order of “E-prescribing Applications” in use today and total planned is similar to the rank order from last year.

**F. Use of Continuity of Care Record (CCR)**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Referral to another practitioner	18.9%	30.4%	12.9%	11.1%	3.2%	3.2%
Transfer to another care setting	13.2%	29.3%	10.7%	11.4%	3.6%	3.6%
Discharge without a referral or transfer	12.9%	22.8%	9.6%	8.2%	2.1%	2.9%
Personal health record	10.4%	34.6%	11.1%	14.6%	4.6%	4.3%
Other	1.8%	7.9%	2.1%	2.9%	1.1%	1.8%

**F. Use of Continuity of Care Record (CCR)**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>		<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Personal health record	34.6%	28.5%		10.4%	7.3%
Referral to another practitioner	30.4%	28.0%		18.9%	14.0%
Transfer to another care setting	29.3%	26.6%		13.2%	11.7%
Discharge without a referral or transfer	22.8%	20.6%		12.9%	12.2%
Other	7.9%	3.0%		1.8%	2.3%

**OBSERVATIONS FOR QUESTION 10F:**

1. There appears to be a general increase in both in use today and total planned implementations for the "Use of Continuity Care Records" across the board.
2. The rank order of total planned implementations of CCR applications appear the same as last year.

**G. Access to Reference Information**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Drug reference information	45.4%	24.3%	15.0%	7.5%	1.1%	0.7%
Drug formularies	35.7%	28.9%	18.2%	8.2%	2.1%	0.4%
Clinical guidelines and protocols	35.0%	29.3%	17.9%	8.9%	1.4%	1.1%
Administrative policies and practices	33.9%	25.4%	14.3%	8.9%	1.1%	1.1%

**G. Access to Reference Information**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>	<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Clinical guidelines and protocols	29.3%	24.3%	35.0%	31.7%
Drug formularies	28.9%	21.9%	35.7%	31.9%
Administrative policies and practices	25.4%	19.9%	33.9%	29.4%
Drug reference information	24.3%	19.7%	45.4%	38.5%

**OBSERVATIONS FOR QUESTION 10G:**

1. There appears to be an increase in “Access to Reference Information” both in use today and for total planned implementations.
2. The rank order for “Access to Reference Information” both in use today and for total planned implementations appears the same as last year.

**H. Email**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Between practitioners	57.1%	15.7%	11.4%	2.5%	1.4%	0.4%
Between patients and practitioners	21.1%	32.5%	14.3%	11.4%	5.4%	1.4%

**H. Email**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>	<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Between patients and practitioners	32.5%	27.1%	21.1%	20.2%
Between practitioners	15.7%	13.2%	57.1%	48.9%

**OBSERVATIONS FOR QUESTION 10H:**

1. Email “between practioners” in use today appears to show significant increase, but there has been little increase in “between patients and practitioners”.
2. However, “email between patients and practitioners” appears to show a greater increase in planned implementations than email “between practitioners”.

**I. Clinical Data Repositories**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Supporting storage of EHR data, text, and reimbursement codes (ICD and CPT codes)	46.1%	24.0%	14.3%	8.2%	0.4%	1.1%
Also supports storage of clinical codes (LOINC, MEDCIN, SNOMED, etc.)	22.5%	30.7%	16.4%	10.4%	2.5%	1.4%
Also supports storage of voice or sound	13.9%	28.5%	13.9%	9.6%	2.9%	2.1%
Also supports storage of clinical images	31.8%	29.3%	17.9%	8.9%	1.8%	0.7%

**I. Clinical Data Repositories**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>		<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Supporting storage of EHR data, text, and reimbursement codes (ICD and CPT codes)	24.0%	14.9%		46.1%	42.2%
Also supports storage of clinical codes (LOINC, MEDCIN, SNOMED, etc.)	30.7%	25.0%		22.5%	21.1%
Also supports storage of voice or sound	28.5%	27.0%		13.9%	11.0%
Also supports storage of clinical images	29.3%	29.0%		31.8%	25.5%

**OBSERVATIONS FOR QUESTION 10I:**

1. There appears to be a general increase in Clinical Data Repositories both in use today and total planned implementations.
2. Interestingly, this is the first year when the total planned implementations appears to show an increase for “clinical codes (LOINC, MEDCIN, SNOMED, etc.)” and exceeds the plans for “voice or sound” or “clinical images”.

**J. Medical Records Document Imaging Systems**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Supplement to a clinical data repository	22.9%	20.3%	12.1%	5.4%	1.4%	1.4%
Interim to a clinical data repository	20.7%	20.4%	12.9%	4.3%	2.5%	0.7%

**J. Medical Records Document Imaging Systems**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>	<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Interim to a clinical data repository	20.4%	17.7%	20.7%	16.7%
Supplement to a clinical data repository	20.3%	20.1%	22.9%	19.5%

**OBSERVATIONS FOR QUESTION 10J:**

1. There appears to be a slight increase in “Medical Records Document Imaging Systems” in use today and total planned implementations.

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

### Preface:

- When comparing the results from 2005 to the previous three 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	2005
Lack of adequate funding or resources	58.5%	64.2%	55.5%	56.8%
Inability to find an EHR solution or components at an affordable cost	31.7%	32.3%	36.0%	39.9%
Difficulty in finding an EHR solution that is not fragmented among vendors or IT platforms	28.7%	30.2%	34.1%	39.4%
Difficulty in creating a migration plan from paper to electronic health records	31.2%	29.2%	27.6%	34.3%
Lack of support by medical staff	35.4%	37.2%	35.4%	32.9%
Difficulty in evaluating EHR solutions or components	24.9%	17.2%	23.1%	28.2%
Unable to find an EHR solution that meets our application or technical requirements	22.9%	27.3%	27.3%	27.2%
Difficulty in building a strong business case (ROI)	20.1%	21.9%	24.7%	24.9%
Inadequate or incomplete healthcare information standards or code sets	25.2%	22.9%	27.3%	n/a
Lack of structured medical terminologies	12.4%	18.1%	16.9%	n/a
Other	7.8%	8.0%	11.0%	10.3%
Total Respondents	477	576	308	213
Margin of Error	+/- 4.6%	+/- 4.2%	+/- 5.6%	+/- 6.6%

### OBSERVATIONS FOR QUESTION 11:

1. “Lack of adequate resources or funding” continues to be the number one barrier to implementing EHRs.
2. The two impediments that have shown a steady increase over the last four years are:
  - a. “Inability to find an EHR solution or components at an affordable cost”
  - b. “Difficulty in finding an EHR solution that is not fragmented among vendors or IT platforms”

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

### Preface:

1. Percentages are based on the total respondents for Question 12 (260).
2. The margin of error for Question 12 is +/- 6.0%.

<b>Priorities</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
Enhances clinical workflow and/or efficiency	69.6%	22.7%	6.9%
Improves patient safety	45.8%	33.5%	18.5%
Supports the organizations strategy to expand the use of information technology	43.8%	37.7%	15.8%
Enhances the public image of the organization as being technologically advanced	25.8%	42.3%	28.8%
Strengthens the ability to retain and recruit practitioners	17.7%	42.7%	35.8%

### OBSERVATIONS FOR QUESTION 12:

1. “Enhances clinical workflow and/or efficiency” is, by far, the number one motivation for implementing mobile health. Interestingly, “improving clinical processes and workflow” is also the number one motivation for implementing EHRs in Question 5.

### 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 203.
- Percentages are based on the total respondents for the survey (280) to facilitate comparison with the results from the previous years.
- When comparing the results from 2003 through 2005, take into consideration the shift in demographics (increase in Ambulatory respondents) and the margins of error.
- The percentages will add to more than 100% because the respondents were asked to select all that apply.

<b>Mobile/Wireless Devices</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Laptop/notebook Computer	46.9%	41.3%	48.2%
Personal Digital Assistant (PDA)	36.5%	29.8%	36.8%
Tablet PC	20.4%	25.5%	36.8%
Cell Phone	16.7%	22.0%	25.7%
Other	3.3%	1.6%	3.6%
Total Respondents	759	436	280
Margin of Error	+/- 3.6%	+/- 4.7%	+/- 5.8%

**OBSERVATIONS FOR QUESTION 13:**

1. Although, the rankings of the use of mobile/wireless devices has remained the same during the last three years, the use of Tablet PCs and Cell Phones appears to show a steady increase.

**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 (280).
- The margin of error for all portions of Question 14 is +/- 5.8%.
- The percentages may add to more than 100% because the respondents were asked to select all that apply.

**A. Administrative/Financial Management**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Scheduling	24.6%	24.5%	14.6%	6.4%	1.4%	2.1%
Charge Capture	19.6%	35.8%	23.6%	9.3%	1.8%	1.1%
E-Signature	16.8%	38.5%	22.9%	12.1%	2.1%	1.4%
Asset Tracking (Bar coding, RFID)	8.6%	29.7%	12.9%	10.4%	3.9%	2.5%
Location access (geo-fencing)	4.3%	19.6%	6.1%	7.5%	1.4%	4.6%

**A. Administrative/Financial Management**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>		<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
E-Signature	38.5%	31.0%		16.8%	15.6%
Charge Capture	35.8%	25.7%		19.6%	19.7%
Asset Tracking (Bar coding, RFID)	29.7%	27.3%		8.6%	8.0%
Scheduling	24.5%	19.0%		24.6%	23.2%
Location access (geo-fencing)	19.6%	16.5%		4.3%	5.0%

**B. E-Prescribing**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Access to drug reference information	31.1%	33.6%	21.8%	8.2%	2.5%	1.1%
Access to clinical guidelines and protocols	30.7%	32.8%	23.9%	6.8%	1.4%	0.7%
Drug-laboratory results	27.9%	29.6%	20.7%	5.0%	2.5%	1.4%
Drug-drug interactions	27.1%	34.3%	25.0%	6.8%	2.1%	0.4%
Access to formulary information	25.0%	36.5%	24.3%	8.6%	2.9%	0.7%
Send prescription to pharmacists computer	23.9%	33.9%	23.6%	7.5%	2.1%	0.7%
Send prescription to a fax	20.0%	38.3%	27.5%	7.9%	2.5%	0.4%
Dosage levels by patient age/weight	16.8%	35.7%	25.0%	7.1%	2.9%	0.7%
Access to eligibility and benefits information	16.1%	38.2%	24.3%	9.6%	2.9%	1.4%
Drug-allergy	13.6%	39.4%	22.9%	12.5%	2.9%	1.1%

**B. E-Prescribing**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>		<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Drug-allergy	39.4%	n/a		13.6%	n/a
Send prescription to a fax	38.3%	n/a		20.0%	n/a
Access to eligibility and benefits information	38.2%	n/a		16.1%	n/a
Access to formulary information	36.5%	33.5%		25.0%	18.1%
Dosage levels by patient age/weight	35.7%	n/a		16.8%	n/a
Drug-drug interactions	34.3%	30.5%		27.1%	23.2%
Send prescription to pharmacists computer	33.9%	n/a		23.9%	n/a
Access to drug reference information	33.6%	n/a		31.1%	n/a
Access to clinical guidelines and protocols	32.8%	31.2%		30.7%	20.2%
Drug-laboratory results	29.6%	n/a		27.9%	n/a

**C. Access To Patient Data**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Access to lab and other test results	36.4%	32.9%	22.5%	8.2%	1.8%	0.4%
Access to patient record	35.4%	34.6%	21.1%	8.9%	3.9%	0.7%
Still image access	19.6%	27.8%	13.6%	8.9%	3.9%	1.4%
PAC access	19.3%	21.7%	13.2%	4.3%	2.1%	2.1%
Remote ICU monitoring	7.5%	21.3%	5.7%	9.6%	3.9%	2.1%
WWAN cardiac telemetry	5.4%	18.9%	6.4%	7.1%	3.6%	1.8%

**C. Access To Patient Data**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>		<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Access to patient record	34.6%	26.4%		35.4%	30.7%
Access to lab and other test results	32.9%	26.1%		36.4%	29.8%
Still image access	27.8%	25.0%		19.6%	12.2%
PAC access	21.7%	22.2%		19.3%	12.8%
Remote ICU monitoring	21.3%	22.5%		7.5%	3.2%
WWAN cardiac telemetry	18.9%	14.4%		5.4%	4.1%

**D. Capture of Patient Care Documentation**

	<b>In Use Today</b>	<b>Total Planned</b>	<b>1 year</b>	<b>2 years</b>	<b>3 years</b>	<b>4 or more years</b>
Dictation capture	27.5%	26.8%	15.0%	10.0%	1.8%	0.0%
Electronic data capture	25.4%	36.9%	22.9%	10.4%	3.2%	0.4%
Order entry	20.4%	38.6%	23.9%	11.8%	2.5%	0.4%
Nursing data capture (vitals, I/Os)	20.4%	26.8%	23.9%	9.3%	2.9%	0.7%
Medication management (e.g. bar-coding at bedside)	8.2%	33.1%	16.4%	11.4%	4.6%	0.7%

**D. Capture of Patient Care Documentation**

	<b>2005 Total Planned</b>	<b>2004 Total Planned</b>		<b>2005 In Use Today</b>	<b>2004 In Use Today</b>
Order entry	38.6%	29.4%		20.4%	18.6%
Electronic data capture	36.9%	25.2%		25.4%	21.3%
Medication management (e.g. bar-coding at bedside)	33.1%	31.0%		8.2%	4.1%
Dictation capture	26.8%	19.3%		27.5%	21.3%
Nursing data capture (vitals, I/Os)	26.8%	28.0%		20.4%	17.9%

### E. Communication

	In Use Today	Total Planned	1 year	2 years	3 years	4 or more years
Email	44.6%	17.5%	11.8%	3.2%	1.4%	1.1%
Internet/web access	43.2%	18.3%	10.4%	3.6%	1.4%	2.9%
Document transfer	16.8%	26.5%	17.9%	6.1%	2.1%	0.4%
Videoconferencing	16.1%	14.7%	5.4%	4.3%	1.8%	3.2%
Nursing/staff voice communication	9.6%	20.7%	9.3%	7.1%	3.6%	0.7%
Push-to-talk voice communication	5.7%	12.9%	1.8%	7.1%	2.9%	1.1%
Video capture and transmission	5.7%	19.3%	7.1%	6.8%	2.5%	2.9%

### E. Communication

	2005 Total Planned	2004 Total Planned	2005 In Use Today	2004 In Use Today
Document transfer	26.5%	19.7%	16.8%	8.9%
Nursing/staff voice communication	20.7%	17.2%	9.6%	11.0%
Video capture and transmission	19.3%	17.7%	5.7%	4.1%
Internet/web access	18.3%	20.2%	43.2%	n/a
Email	17.5%	14.7%	44.6%	30.7%
Videoconferencing	14.7%	14.0%	16.1%	11.0%
Push-to-talk voice communication	12.9%	16.1%	5.7%	8.5%

### **OBSERVATIONS FOR QUESTION 14:**

1. The great majority of mobile/wireless applications increased from 2004 to 2005 for both in use today and planned implementations.
2. The greatest increases in mobile/wireless applications from 2004 to 2005 are:
  - a. Email
  - b. Scheduling
  - c. Access to clinical guidelines and protocols
3. The highest levels of mobile/wireless applications in use today are:
  - a. Email
  - b. Internet/web access
  - c. Access to lab and other test results
  - d. Access to patient record
  - e. Access to drug reference information
  - f. Access to clinical guidelines and protocols
4. The highest levels of mobile/wireless applications planned are:
  - a. Drug-allergy
  - b. Order entry
  - c. E-Signature
  - d. Send prescription to a fax
  - e. Access to eligibility and benefits information
  - f. Electronic data capture
  - g. Access to formulary information
  - h. Charge Capture
  - i. Dosage levels by patient age/weight

## 15. What wireless connectivity technology are you using?

### Preface:

- Percentages are based on the total respondents for the survey (280).
- Margin of error for Question 15 is +/- 5.8%.
- The percentages may add to more than 100% because the respondents were asked to select all that apply.

Wireless Connectivity Technology	2004	2005
WiFi (wireless local area networks): 802.11 a, b, g	32.1%	45.7%
Digital cellular service: WWAN (wireless wide area networks)	13.3%	16.1%
WPAN (wireless personal area networks): for example - Infrared, Bluetooth	6.4%	10.0%
Analog cellular service: WWAN (wireless wide area networks)	3.0%	5.0%
Not sure	10.8%	15.7%
None	19.0%	23.6%

### OBSERVATIONS FOR QUESTION 15:

1. The use of wireless connectivity for 2005 has increased across the board.
2. The rate of increase of the use of WiFi is much greater than all other communication technologies.

## 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 2005 with the previous three 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	2005
Lack of security of confidential information when sending/receiving	52.1%	51.2%	47.6%	43.5%
Concern about unauthorized use of mobile/wireless devices that have been lost or stolen	39.5%	44.6%	42.8%	40.4%
Slow data transfer rates to/from the host system	38.7%	35.4%	35.6%	37.8%
Inconsistent connectivity when roaming within the healthcare facility	n/a	n/a	36.6%	34.8%
Lack of interoperability with other devices or systems	34.6%	31.5%	24.0%	28.3%
Lack of a strategy or implementation plan for adoption	n/a	n/a	29.5%	27.0%
Delays in data synchronization with host systems or applications	38.7%	31.9%	26.4%	25.2%
Inability to achieve workflow integration	n/a	28.0%	20.2%	23.9%
Interference with medical devices	20.8%	24.2%	27.1%	17.8%
Difficult to use	31.2%	31.2%	13.7%	13.9%
Other	10.0%	13.0%	7.5%	8.7%
Total Respondents	491	596	292	230
Margin of Error	+/- 4.5%	+/- 4.1%	+/-5.7%	+/-6.4%

### OBSERVATIONS FOR QUESTION 16:

1. The top two concerns over the last four years have been:
  - a. lack of security of confidential information when sending/receiving
  - b. concern about unauthorized use of mobile/wireless devices that have been lost or stolen
2. Over the last four years, the following concerns have declined:
  - a. lack of security of confidential information when sending/receiving
  - b. concern about unauthorized use of mobile/wireless devices that have been lost or stolen
  - c. delays in data synchronization with host systems or applications
  - d. difficult to use
3. Concern about “interference with medical devices” appeared to increase from 2002-2004, but shows a significant decrease in 2005.