



CALIFORNIA
HEALTHCARE
FOUNDATION

SNAPSHOT

The State of Health Information Technology in California

2008

Introduction

Health information technology (HIT)—the hardware and software used to store, retrieve, share, and use clinical information to treat patients effectively—has a significant role to play in preventing errors and adverse clinical events, giving patients the appropriate level of care, and making health care more efficient.

The survey results reported here in the first comprehensive snapshot of HIT adoption and use in California reveal that large majorities of physician practices, hospitals, clinics, and long term care facilities, as well as patients, still are far from realizing these HIT benefits, for reasons ranging from implementation costs to concerns about security and confidentiality.

Among the snapshot highlights:

- Most clinicians still practice in an environment ruled by paper and are unable to take advantage of electronic health records (EHRs) that could prompt them to provide appropriate care for their patients.
- Most medications are still ordered manually. This puts patients at risk of receiving prescription drugs to which they may be allergic, which may interact with medication they are already taking, or which may not have been intended for them to take. Electronic prescribing systems can help reduce the number of such adverse events.

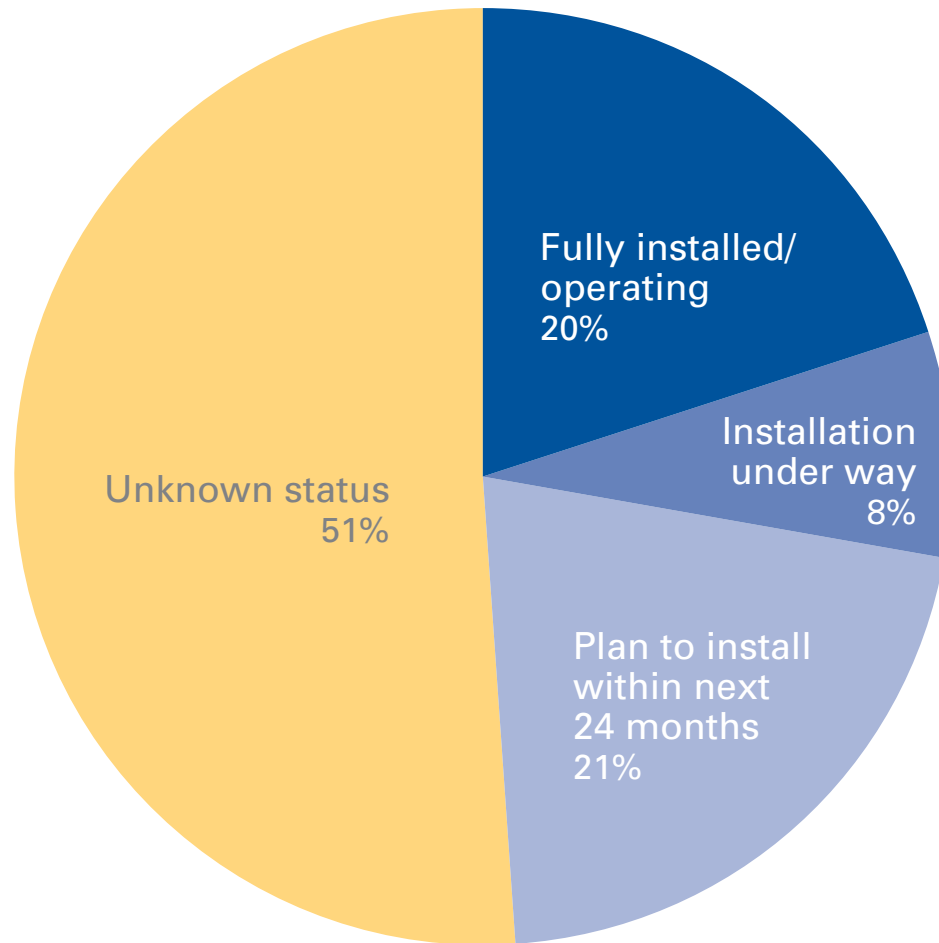
- Only one-quarter of hospitals are using bar-coding technology fully. Greater usage could reduce treatment errors. In addition to low usage rates of barcoding, only 13 percent of hospitals have fully implemented EHRs.
- Community clinics report relatively low use of disease registries for multiple conditions, including asthma, cancer screening for women, depression, and hypertension.
- Only 12 percent of California physicians use alerts to warn them about potential adverse drug events, receive electronic warnings about abnormal lab results, and send reminder notices to patients about regular or preventive follow-up care.
- Most patients who do not communicate with their physicians online are concerned that patient privacy might be compromised if they were to use the Internet for this purpose.

Health care providers and consumers in California have been slow to leverage the full potential of HIT. This, and the lack of a comprehensive HIT infrastructure, could inhibit efforts to promote greater effectiveness and efficiency throughout the state's health care system.

CONTENTS

HIT Use and Adoption Among Providers	
Medical Groups	3
Physicians	5
Community Clinics	14
Consumer Attitudes 18	
Use and Adoption Among Facilities	
Hospitals	26
Long Term Care	29
Appendix	30

Extent of EHR Installation at Medical Groups,* California, 2007



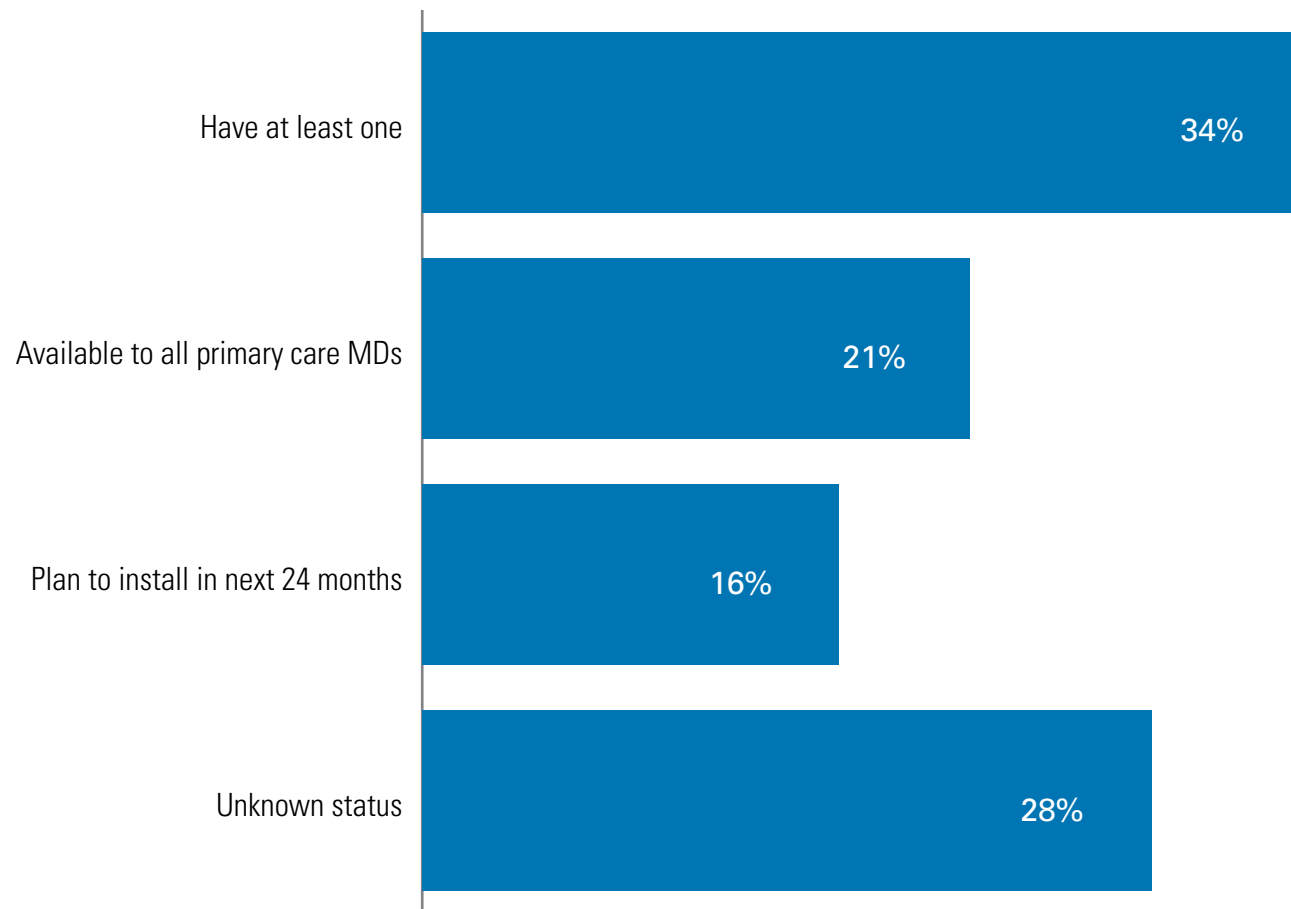
Health Information Technology Medical Groups

One-fifth of medical groups reported that they have an electronic health record (EHR) system fully installed and operating.

*Medical group is defined as six or more primary care physicians contracting directly with an HMO.

Source: *Active California Medical Groups. Implementation Status of Electronic Medical Records ("EMRs") & Chronic Disease Registries ("CDRs")*. Cattaneo & Stroud. July 2007.

Use of Chronic Disease Registries in Medical Groups,* California, 2007



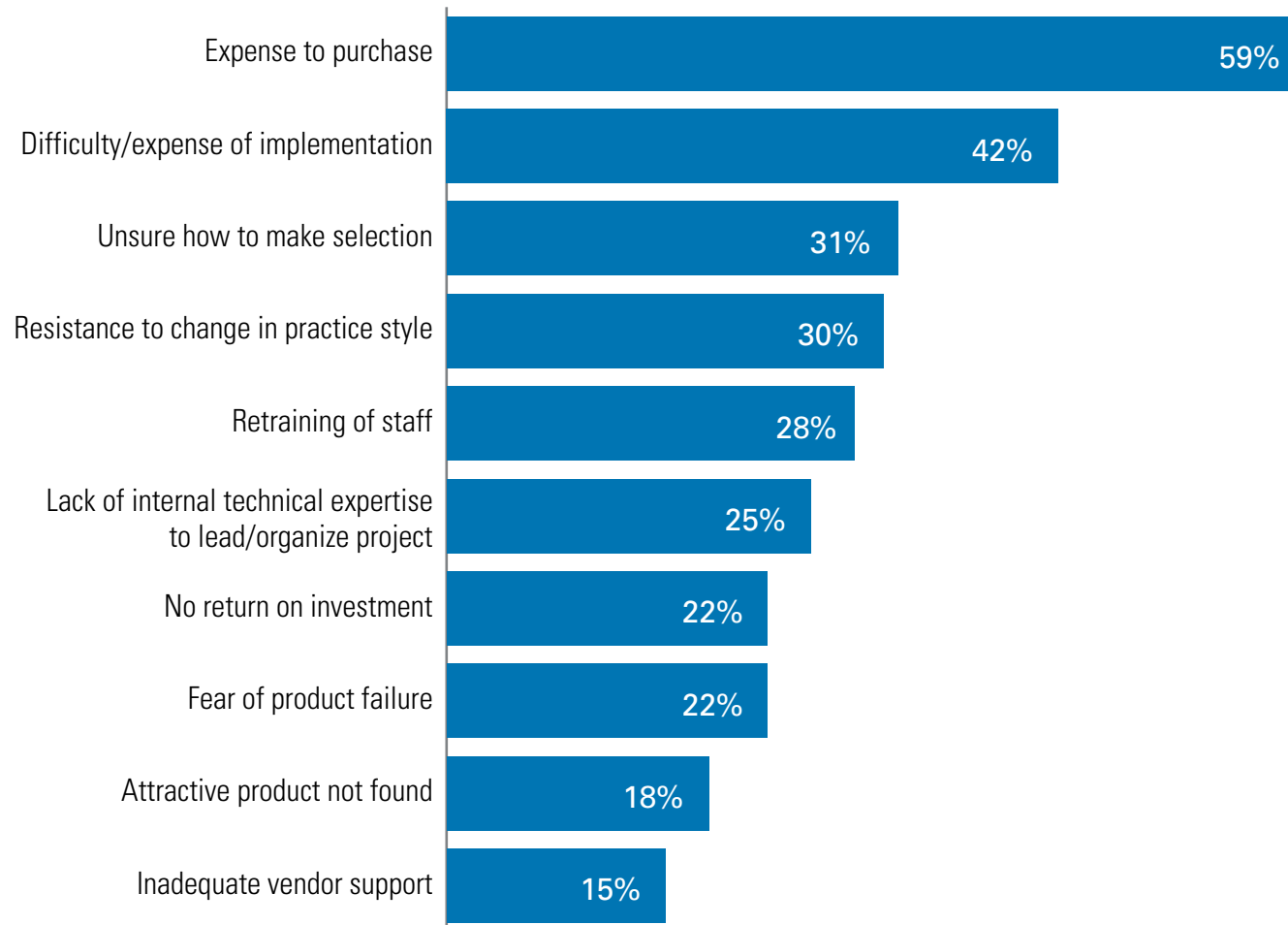
Health Information Technology Medical Groups

More than one-third of medical groups have at least one chronic disease registry, although in most groups the registries are not available to all primary care physicians.

*Medical group is defined as six or more primary care physicians contracting directly with an HMO.

Source: *Active California Medical Groups. Implementation Status of Electronic Medical Records ("EMRs") & Chronic Disease Registries ("CDRs")*. Cattaneo & Stroud. July 2007.

Barriers to Use of EHRs Among Physicians, California, 2005

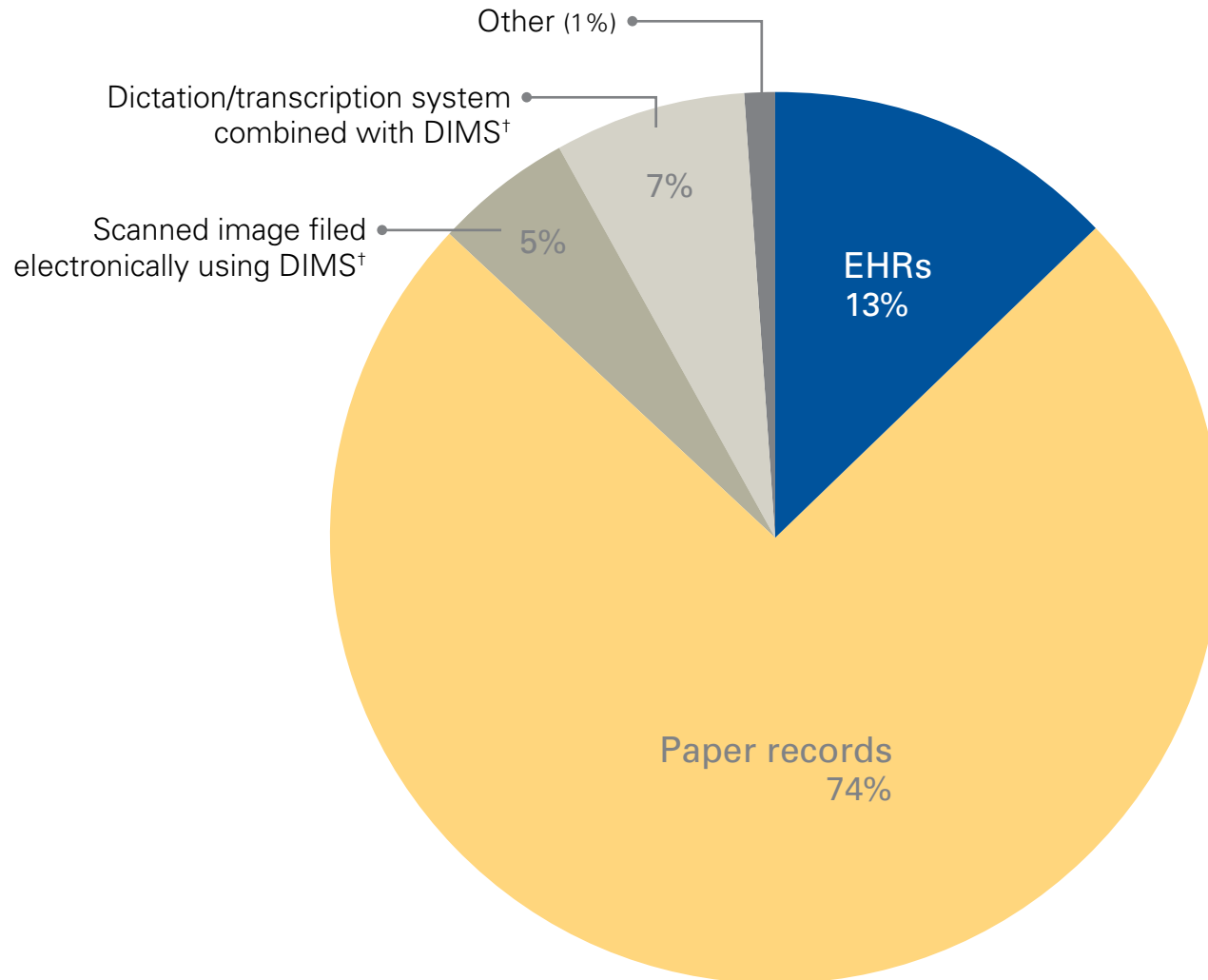


Health Information Technology Physicians

Cost issues— including purchase and implementation expenses—top the list of barriers to electronic health record (EHR) use.

Source: *Health Information Technology Survey*. Center for Economic Services, California Medical Association. 2005.

Methods of Storing Records at Physician Practices,* California, 2005



Note: Percentages do not add to 100 percent due to rounding.

*Physician practice is defined as three or more physicians practicing together with a common billing and medical record system.

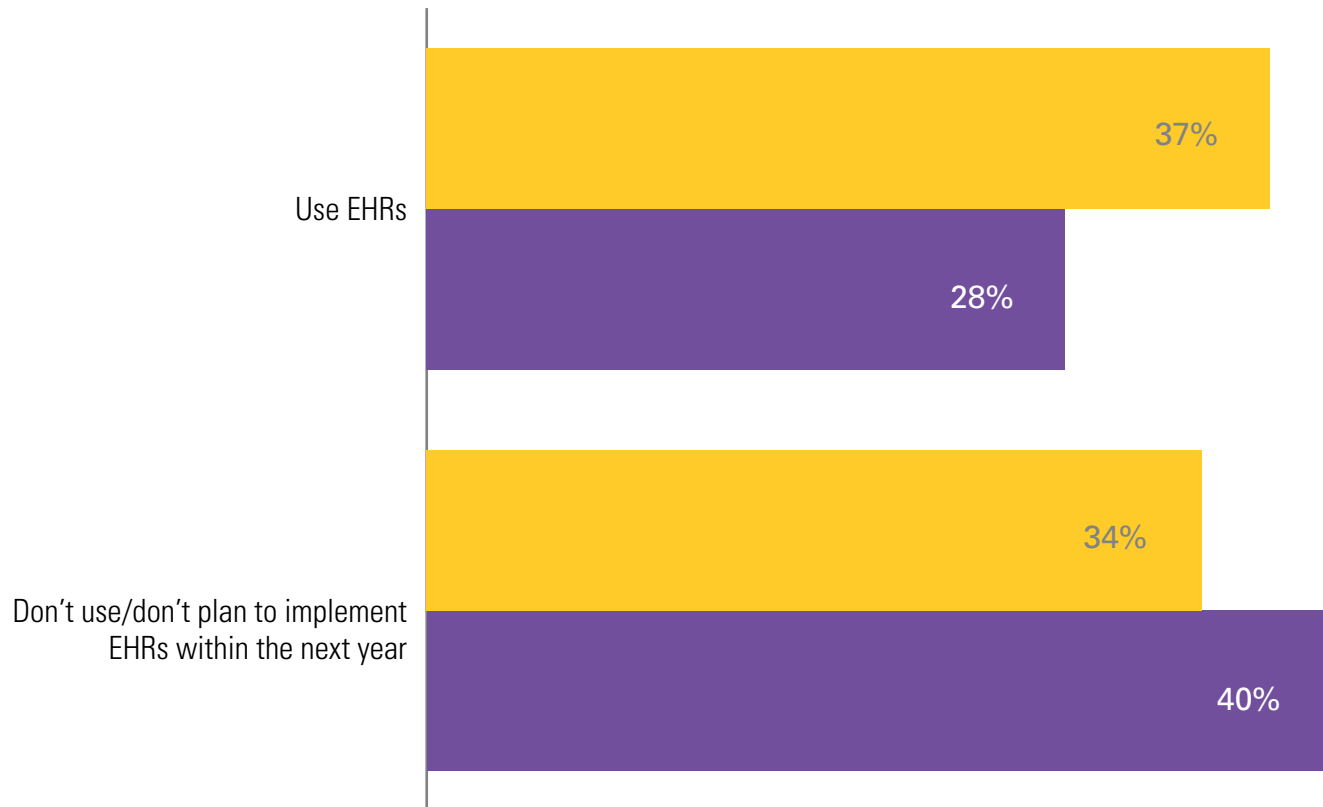
†Document image management system.

Source: *Assessing Information Technology in Medical Groups*. Medical Group Management Association Center for Research and the University of Minnesota. 2005.

Only 13 percent of physician practices reported that they use electronic health records (EHRs). The vast majority still use paper records.

Individual Physician Use of Electronic Health Records, California vs. U.S., 2007

California
U.S.

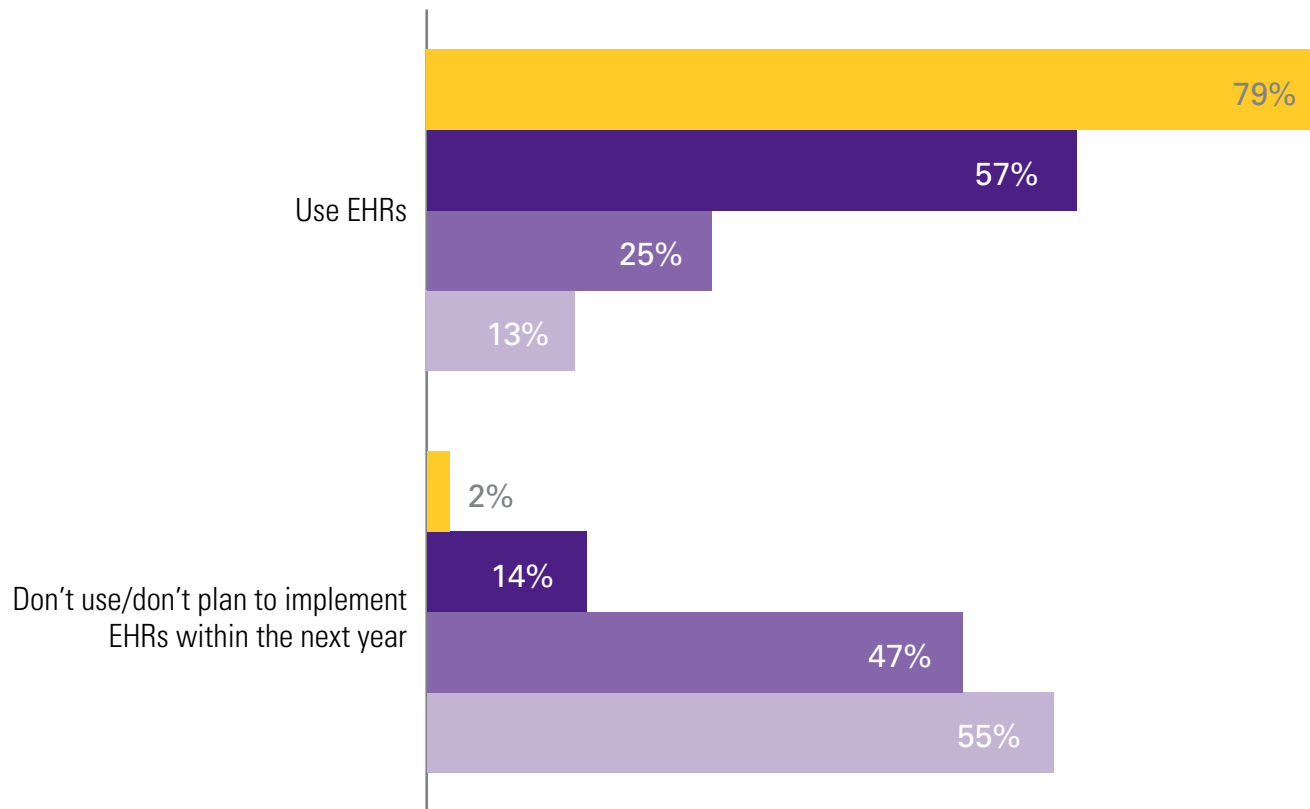


Source: *Health Perspectives in California. 2007 Survey of Primary Care Physicians.* Harris Interactive. June 2007.

Compared to their counterparts in other states, more physicians in California reported use of EHRs. Seventeen percent of the California respondents were physicians at Kaiser Permanente, where HIT penetration is relatively high.

Physician Use of EHRs, by Practice Size, California, 2007

- Kaiser
- Large Practice
- Small/Medium Practice
- Solo Practitioner



Notes: Large practice is 10 or more physicians; small/medium practice is 2 to 9 physicians (excluding Kaiser).

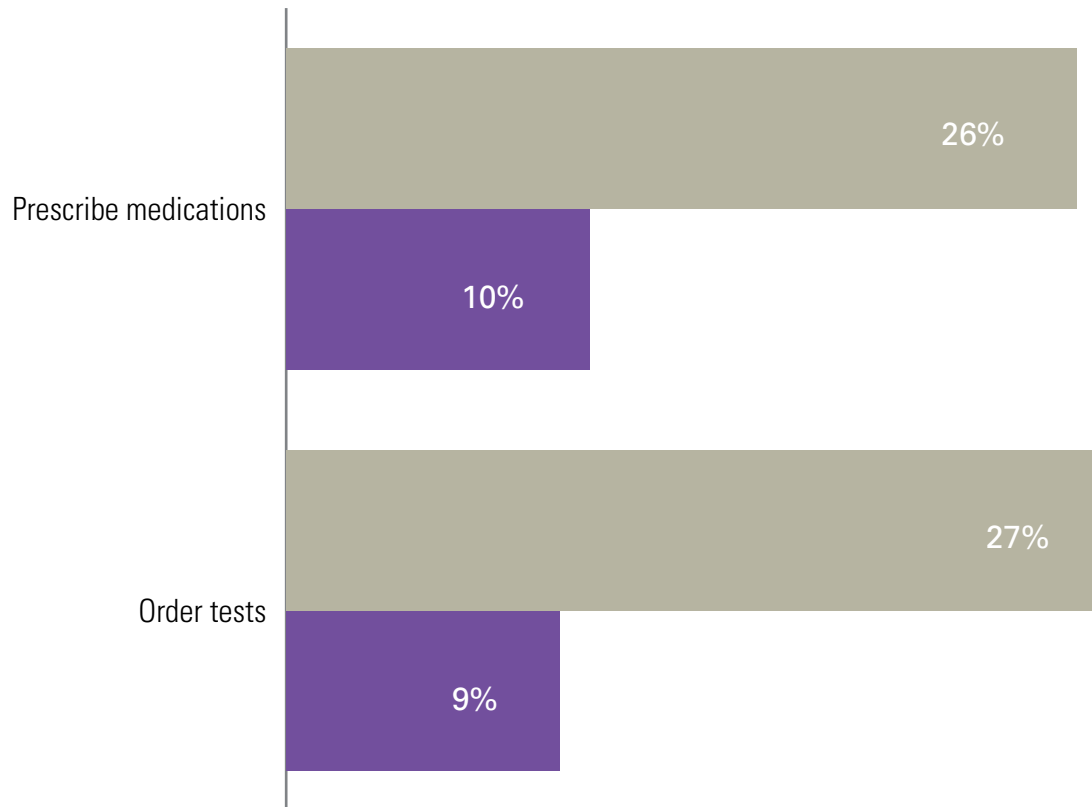
Source: *Health Perspectives in California. 2007 Survey of Primary Care Physicians*. Harris Interactive. June 2007.

Health Information Technology Physicians

The larger the medical practice in California, the more likely it uses electronic health records (EHRs). Among practices that don't use this technology, fewer small and medium practices are planning to implement EHRs within the next year.

Physician Use of Electronic Prescribing and Test Ordering, California, 2007

■ Routinely
■ Occasionally

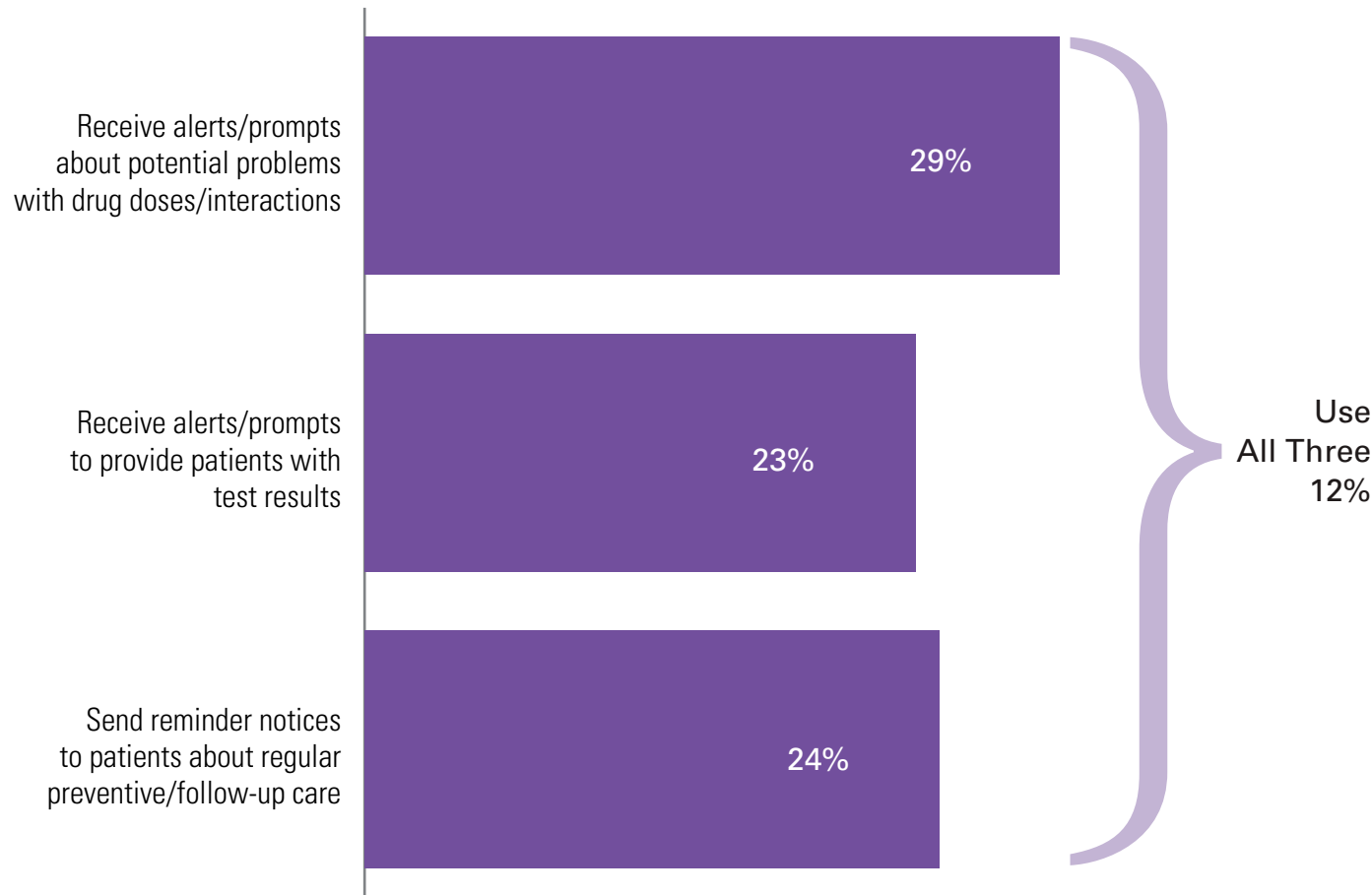


Health Information Technology Physicians

More than one-quarter of physicians reported that they routinely prescribe medications and order tests electronically.

Source: *Health Perspectives in California. 2007 Survey of Primary Care Physicians.* Harris Interactive. June 2007.

Physician Use of Electronic Alerts and Reminders, California, 2007

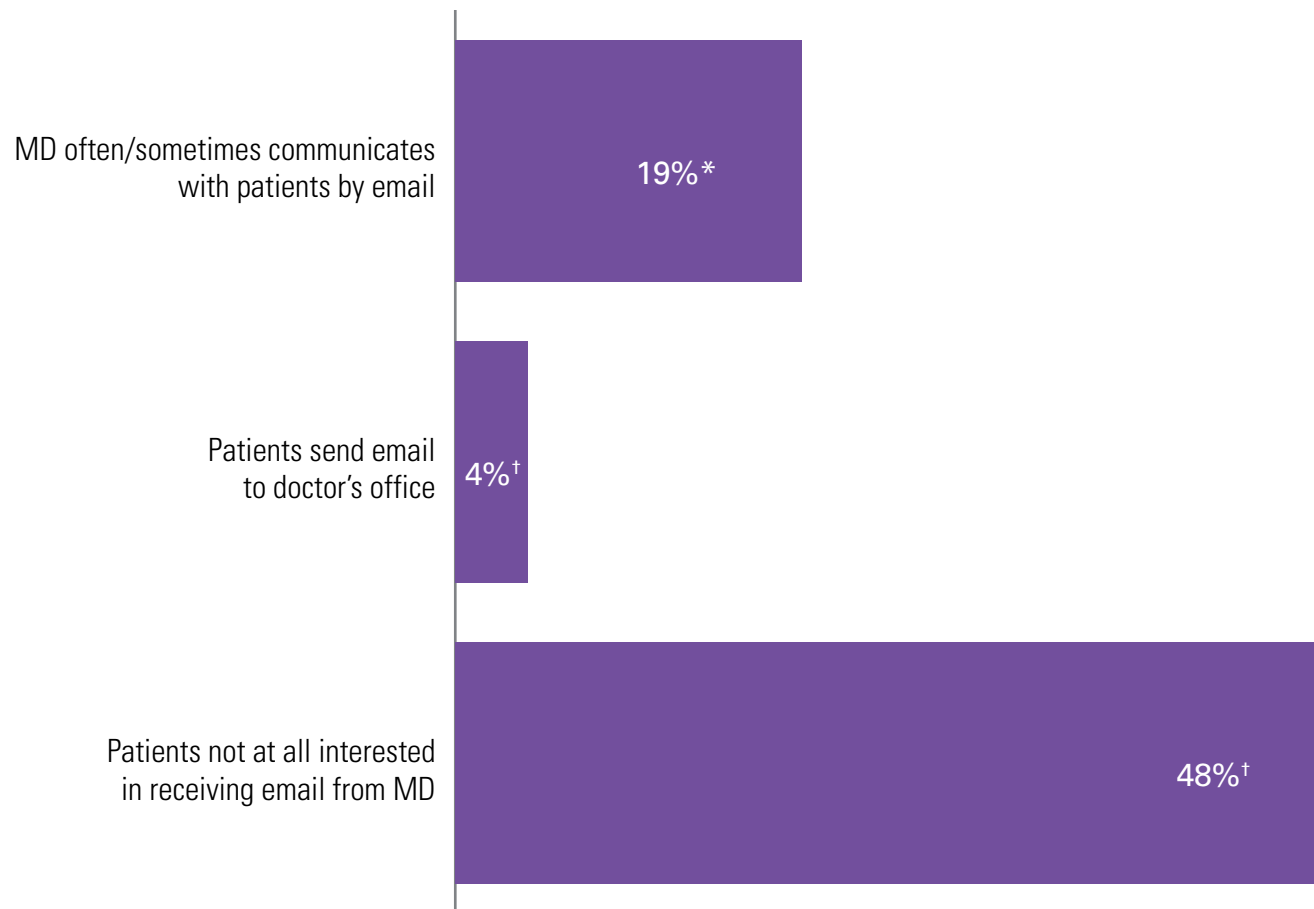


Health Information Technology Physicians

About one-quarter of California physicians reported that they routinely use electronic alerts/reminders for at least one of the three purposes cited. Only 12 percent reported routine use for all three purposes, compared to 7 percent of physicians in other states (not shown).

Source: *Health Perspectives in California. 2007 Survey of Primary Care Physicians.* Harris Interactive. June 2007.

Use of Email Between Physicians and Patients, California, 2007



Sources:

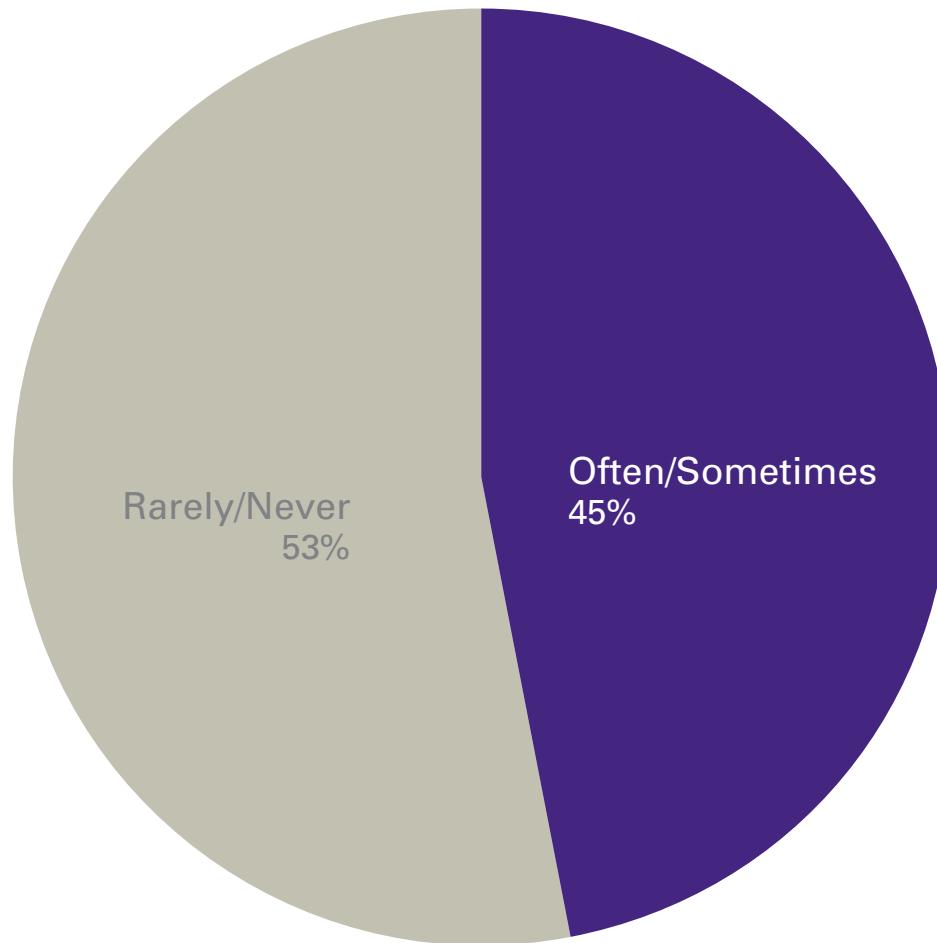
**Health Perspectives in California. 2007 Survey of Primary Care Physicians.* Harris Interactive. June 2007.

†*Custom Study for California HealthCare Foundation.* Manhattan Research. 2006/2007.

Health Information Technology Physicians

While 19 percent of physicians reported that they often or sometimes communicate with patients by email, only 4 percent of patients reported that they communicate with physicians electronically. Furthermore, nearly half of patients indicated they were “not at all interested” in receiving email from their doctor’s office.

Physician Use of Email/Web Communications with Other Physicians, California, 2007



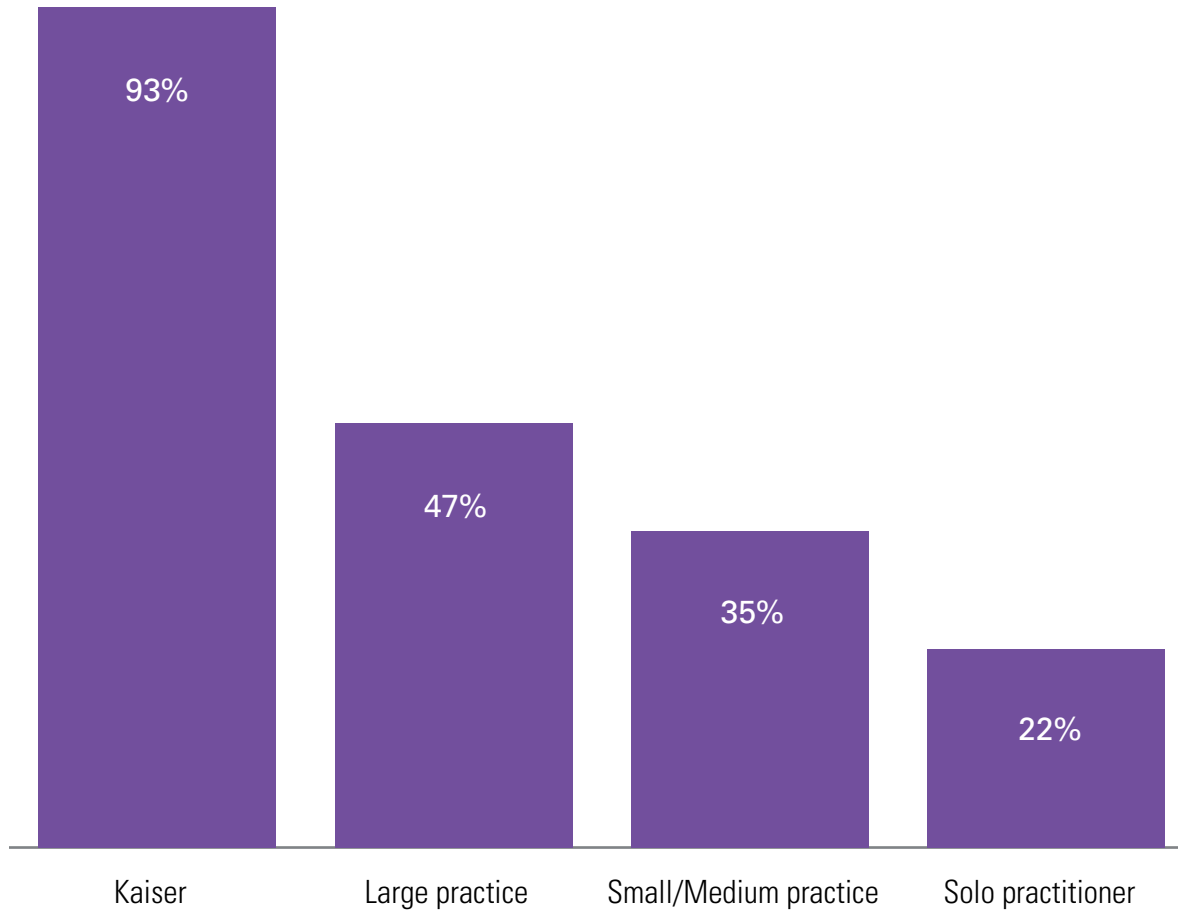
Note: Percentages do not add to 100 percent due to rounding.

Source: *Health Perspectives in California. 2007 Survey of Primary Care Physicians.* Harris Interactive. June 2007.

Health Information Technology Physicians

Fifty-three percent of physicians reported that they rarely or never communicate with other doctors by email or a Web-based messaging system.

MDs Who Often/Sometimes Communicate Electronically with Other MDs, by Practice Type, California, 2007

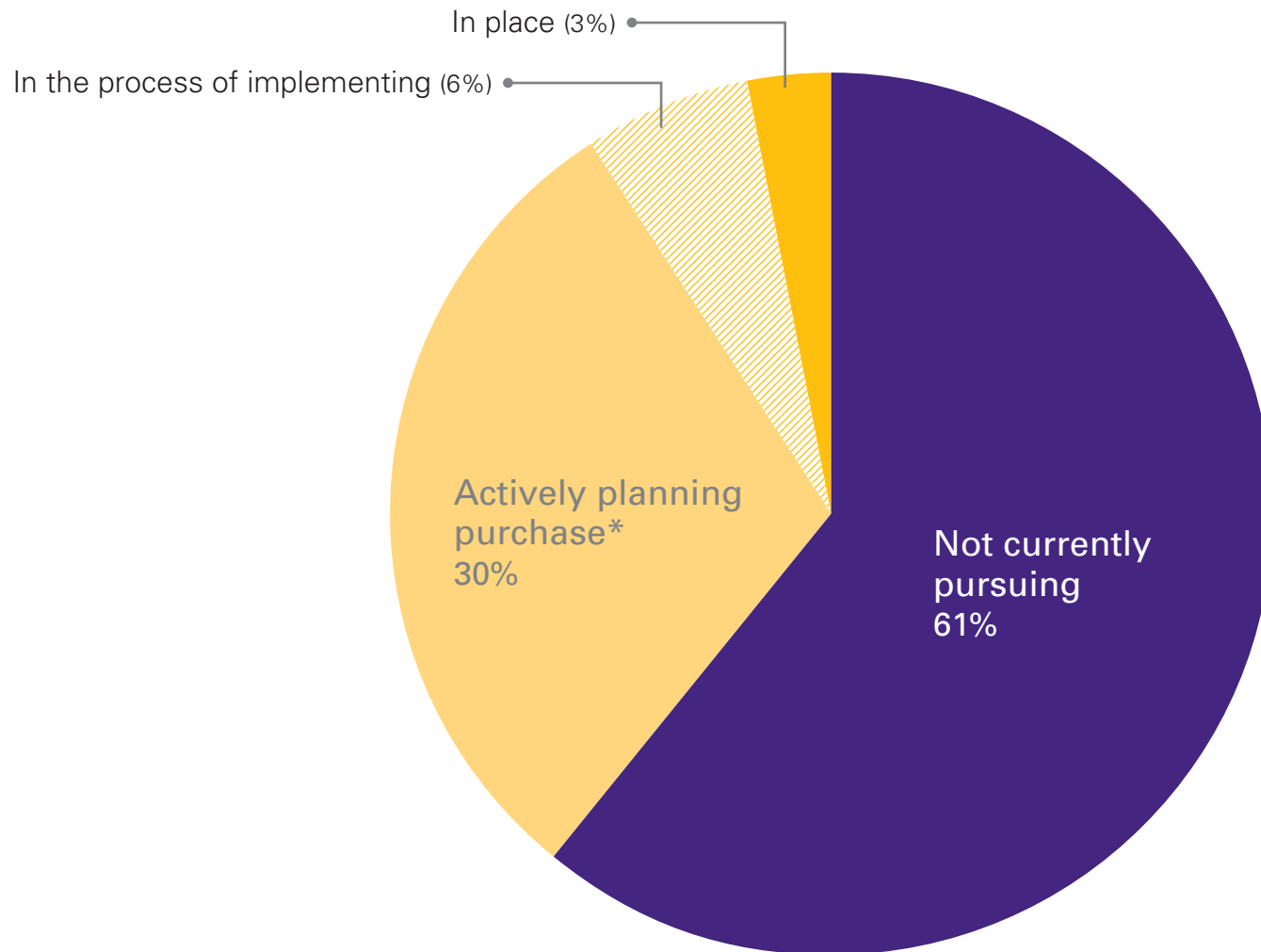


Source: *Health Perspectives in California. 2007 Survey of Primary Care Physicians.* Harris Interactive. June 2007.

Health Information Technology Physicians

Physicians who often or sometimes communicate with other physicians by email or a Web-based messaging system are more likely to be at Kaiser Permanente or in a large practice.

Use of EHRs at Community Clinics, California, 2005



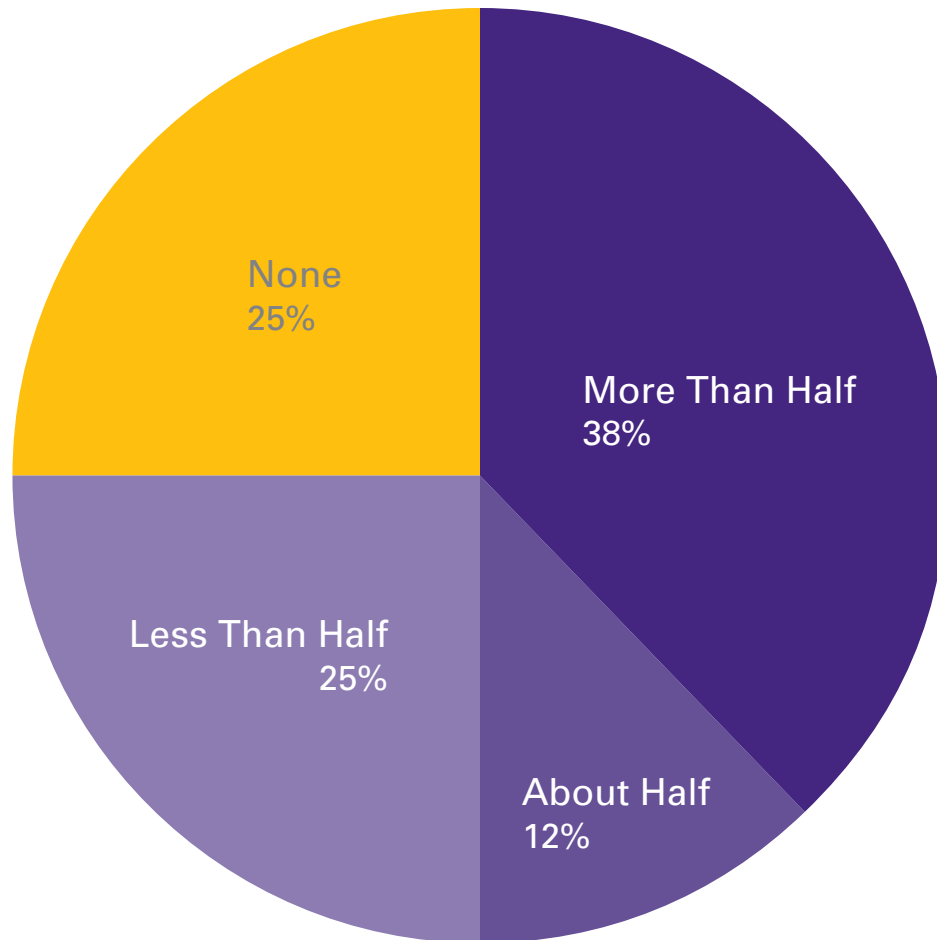
Very few community clinics reported that they have electronic health records (EHRs) in place. Sixty-one percent of clinics said they are not pursuing the implementation of EHRs.

*E.g., has an operating EHR planning committee, is writing a request for proposals (RFP) from EHR vendors, or has issued an RFP.

Source: 2005 Information Management Assessment. Medical Director Survey. Community Clinics Initiative.

Use of PDAs Among Providers in Community Clinics to Check Prescription or Drug Interaction Information, California, 2005

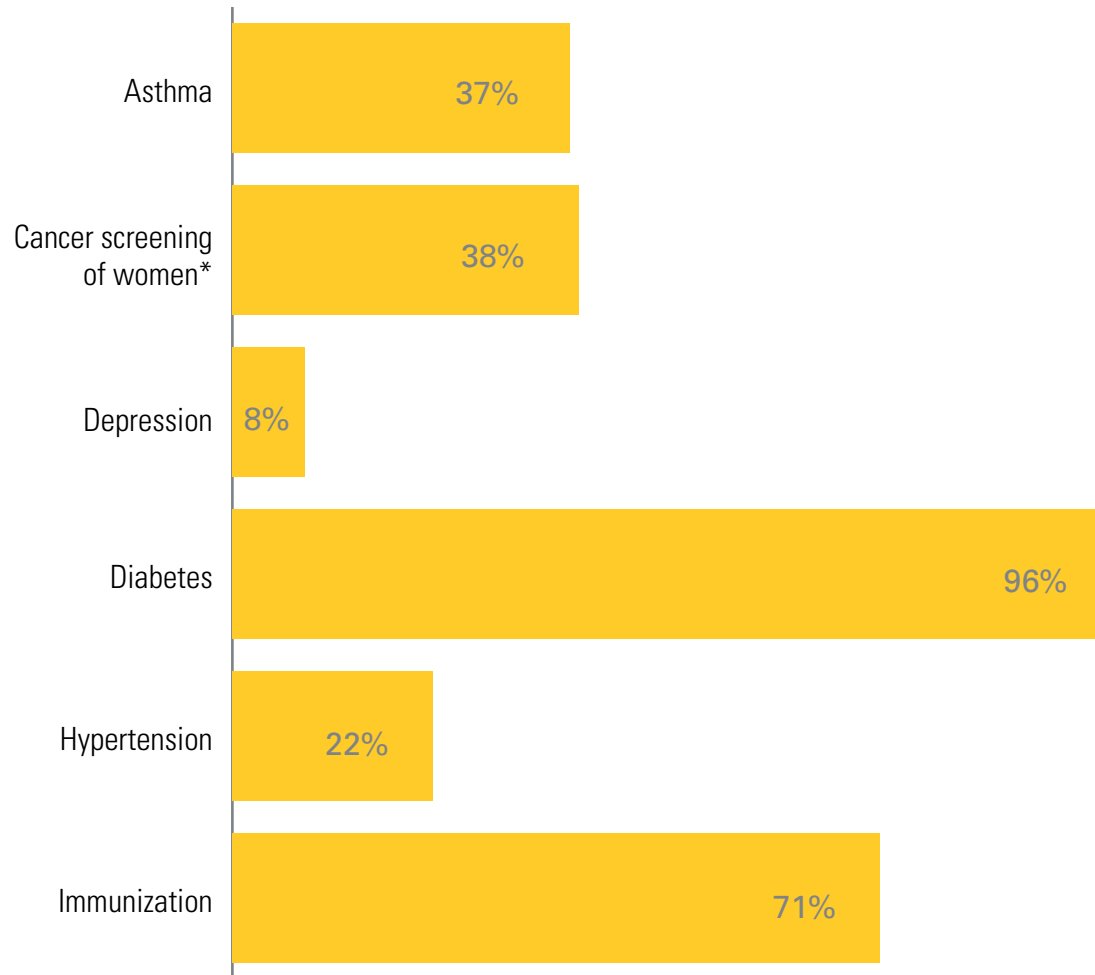
Proportion of Providers Using PDAs



Source: 2005 Information Management Assessment. Medical Director Survey. Community Clinics Initiative.

In half of community clinics, 50 percent of providers use a personal digital assistant (PDA) to check prescription or drug interaction information.

Community Clinics with Disease Registries in Place, California, 2005

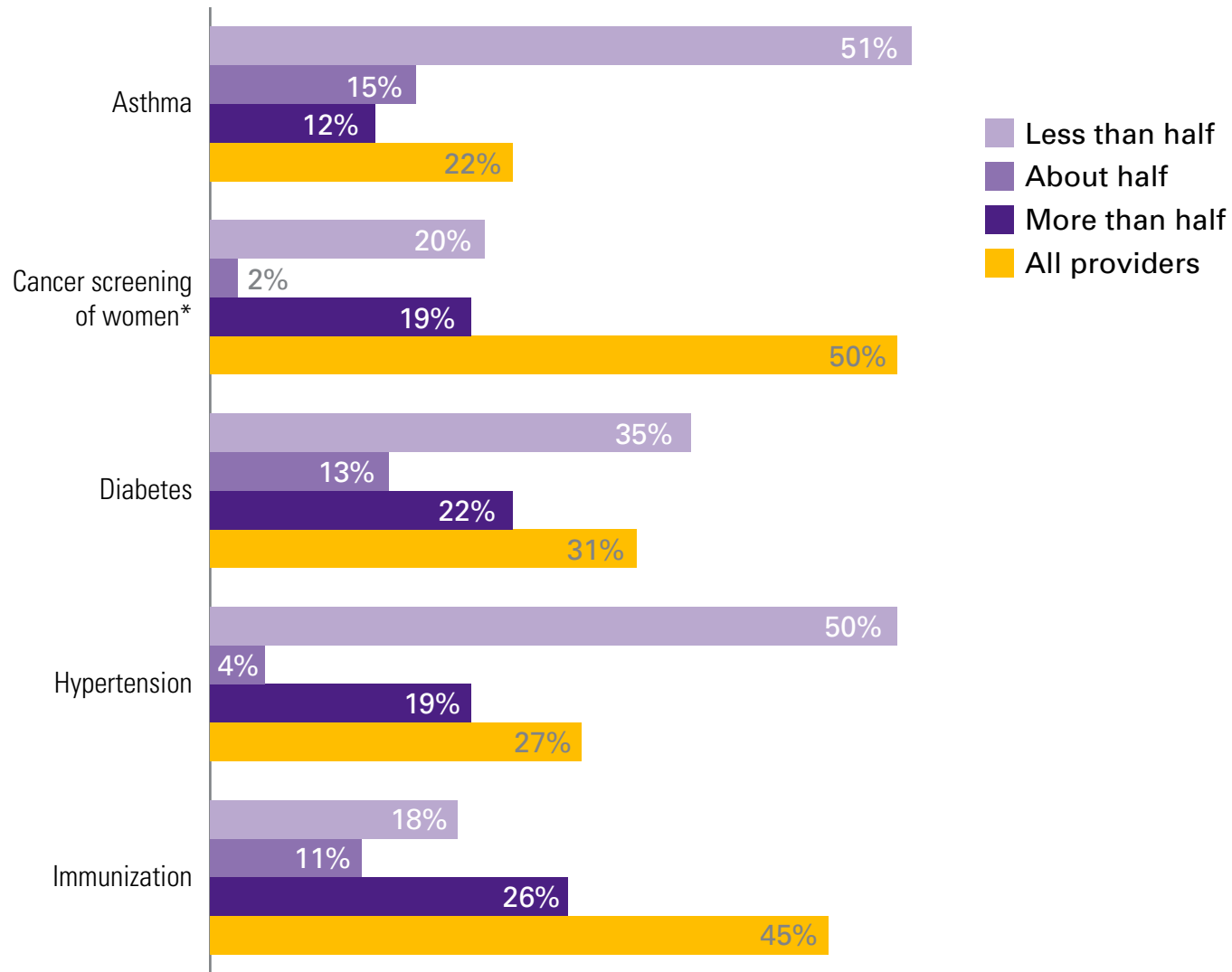


*E.g., Pap smears.

Source: 2005 Information Management Assessment. Medical Director Survey. Community Clinics Initiative.

Although a majority of community clinics reported that they maintain a registry for diabetes and immunization; lower percentages report having registries for asthma, cancer screening of women, depression, or hypertension.

Proportion of Providers at Community Clinics Actively Using Disease Registries, California, 2005

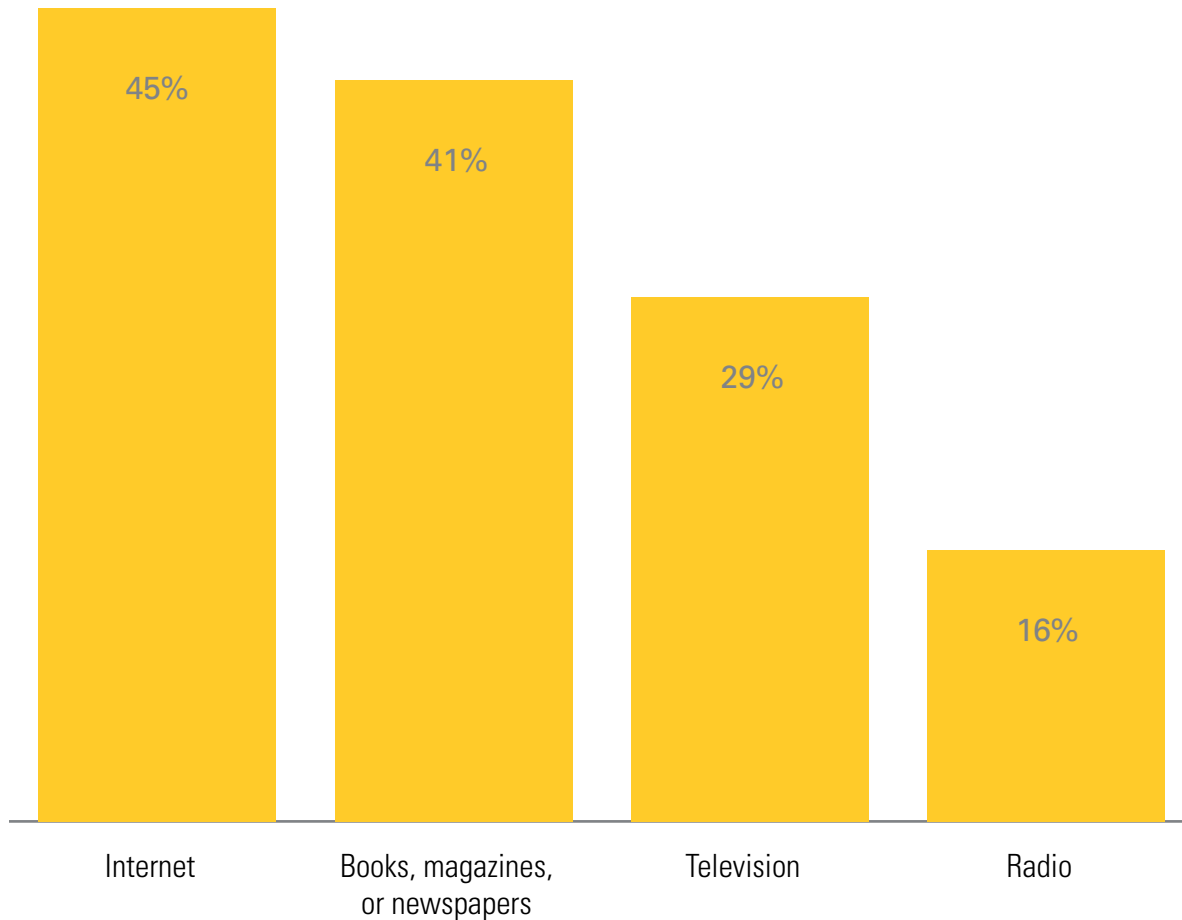


*E.g., Pap smears.

Source: 2005 Information Management Assessment. Medical Director Survey. Community Clinics Initiative.

Community clinics reported relatively low use among their providers of disease registries for diabetes, even though they also reported relatively high implementation of such registries.

Consumers' Sources of Health/Medical Information, California, 2006/2007

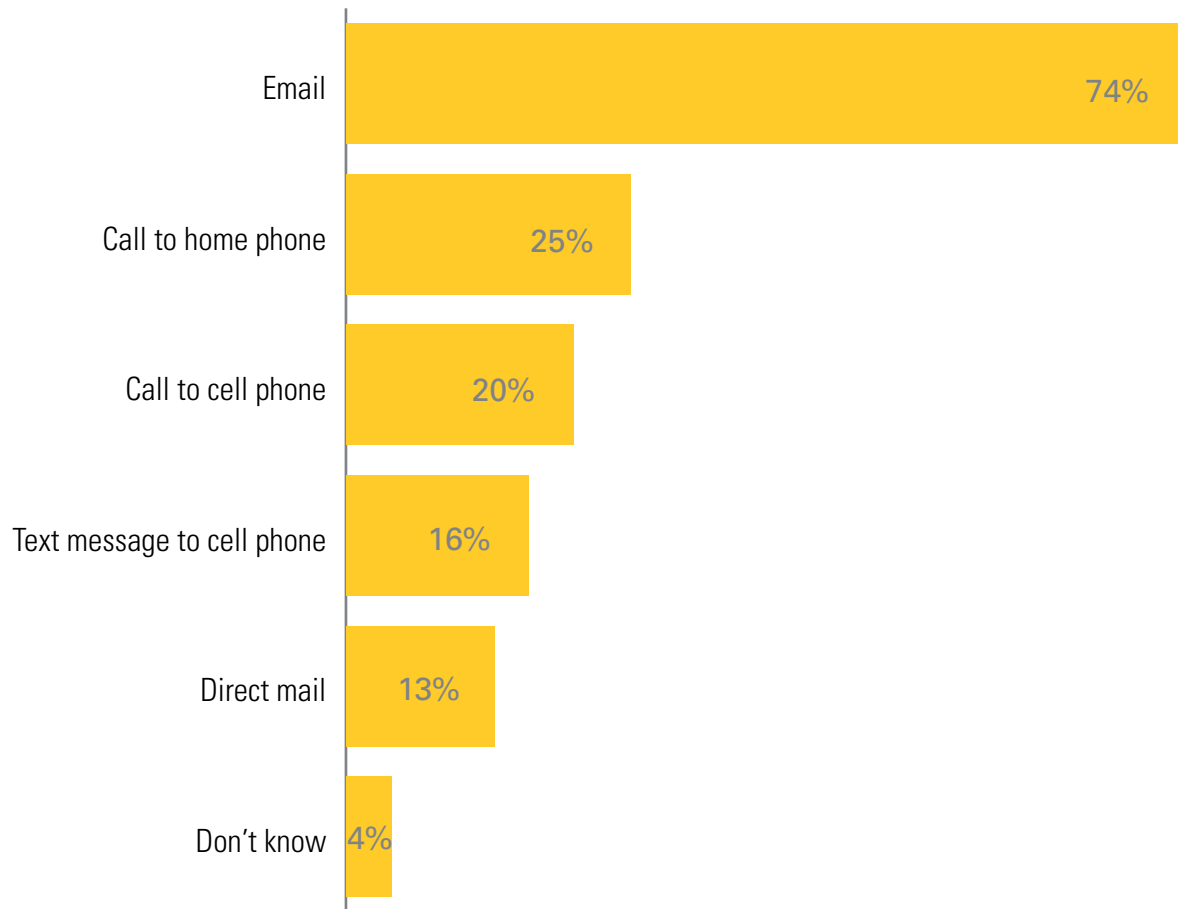


Source: Custom Study for California HealthCare Foundation. Manhattan Research. 2006/2007.

Health Information Technology Consumer Attitudes

Nearly half of consumers reported that, within the last 12 months, they obtained health or medical information on the Internet.

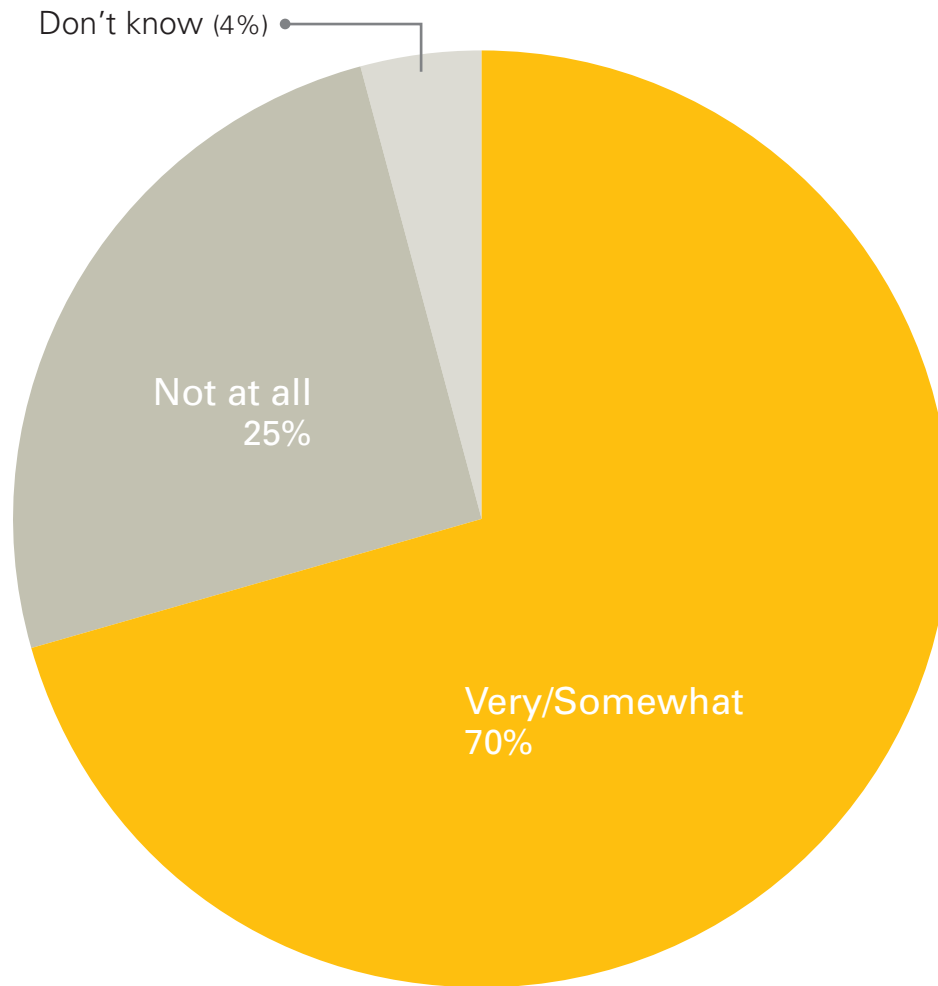
Consumers' Interest in Receiving Prescription Refill Reminders Electronically, California, 2006/2007



Source: Custom Study for California HealthCare Foundation. Manhattan Research. 2006/2007.

Nearly three-quarters of consumers who expressed interest in prescription refill reminders said they are interested in receiving such reminders by email.

Importance to Consumers of Technology in Physician Office, California, 2006/2007



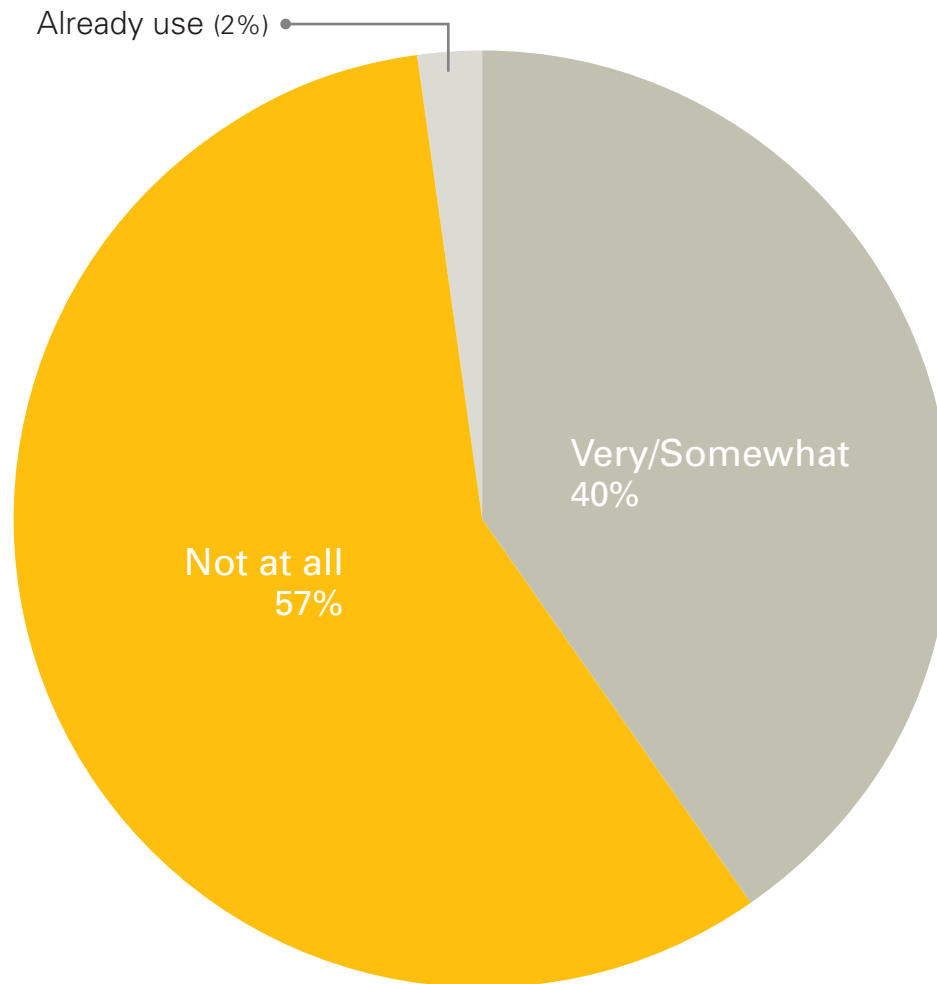
Note: Percentages do not add to 100 percent due to rounding.

Source: Custom Study for California HealthCare Foundation. Manhattan Research. 2006/2007.

Health Information Technology Consumer Attitudes

Seventy percent of consumers said that when choosing a physician, it is “very important” or “somewhat important” that the doctor’s office incorporates technology, such as an electronic system to file medical records, into its practice.

Consumers' Interest in Accessing PHRs Online, California, 2006/2007

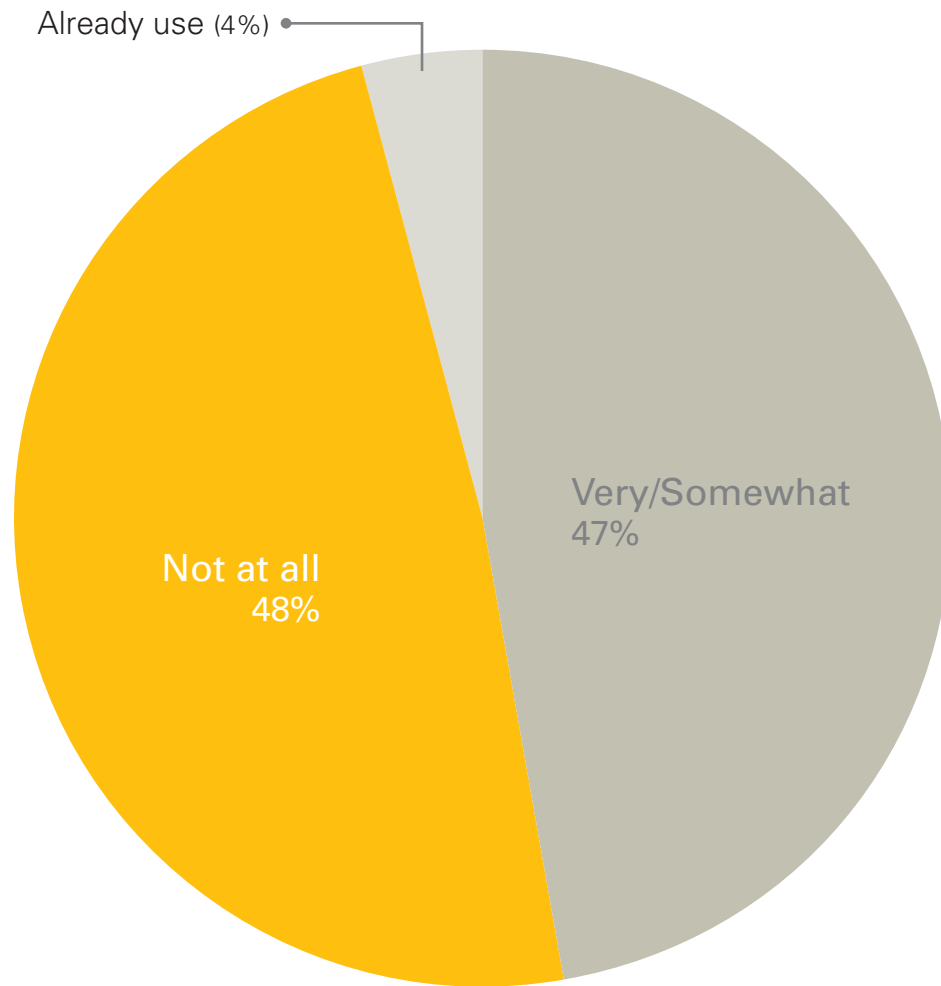


Note: Percentages do not add to 100 percent due to rounding.

Source: Custom Study for California HealthCare Foundation. Manhattan Research. 2006/2007.

A majority of consumers said they were “not at all interested” in accessing personal health records (PHRs) online. Only 2 percent already do.

Consumers' Interest in Receiving Email from Physician, California, 2006/2007

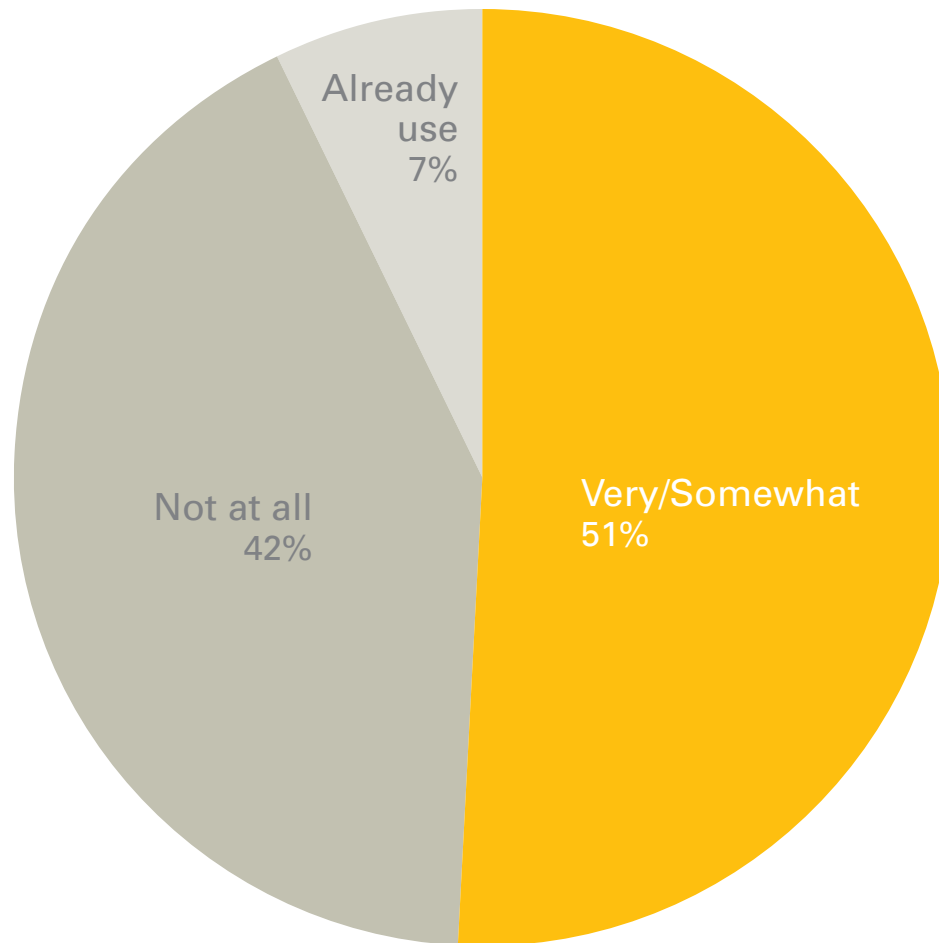


Note: Percentages do not add to 100 percent due to rounding.

Source: Custom Study for California HealthCare Foundation. Manhattan Research. 2006/2007.

Nearly half of consumers said they were “not at all interested” in receiving email from their doctor’s office.

Consumers' Interest in Scheduling an Appointment Online, California, 2006/2007



Health Information Technology Consumer Attitudes

More than half of consumers said they were either "very interested" or "somewhat interested" in scheduling a medical appointment online. Only 7 percent have scheduled an appointment this way.

Source: Custom Study for California HealthCare Foundation. Manhattan Research. 2006/2007.

Activities That Elicit Security/Confidentiality Concerns Among Non-Users of Health Information Technologies, California, 2006/2007

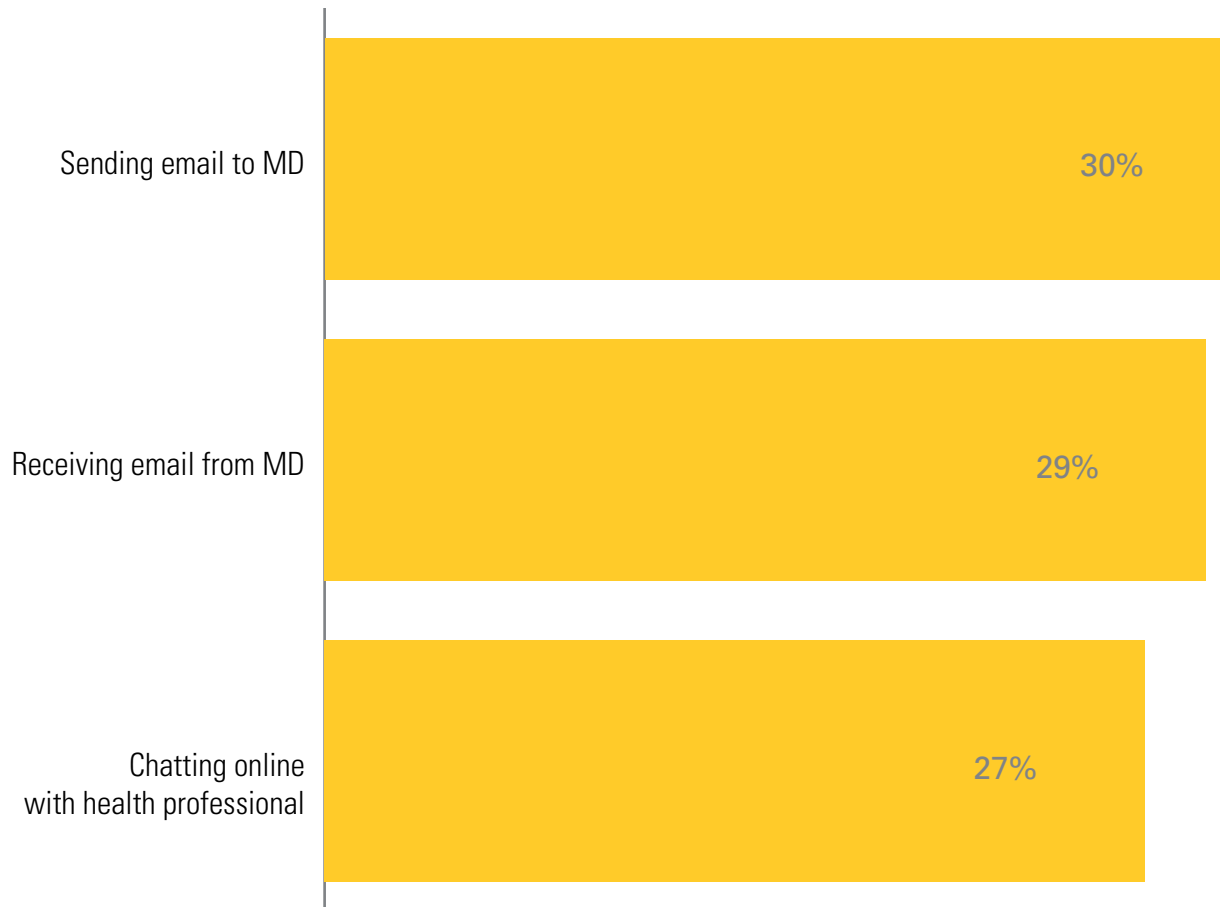


Note: Non-users don't access personal health records or lab tests online, they do not store personal health information on an electronic card, and their doctors don't store patient records electronically.

Source: Custom Study for California HealthCare Foundation. Manhattan Research. 2006/2007.

Among non-users, accessing of personal health records raised the greatest concerns about security and confidentiality.

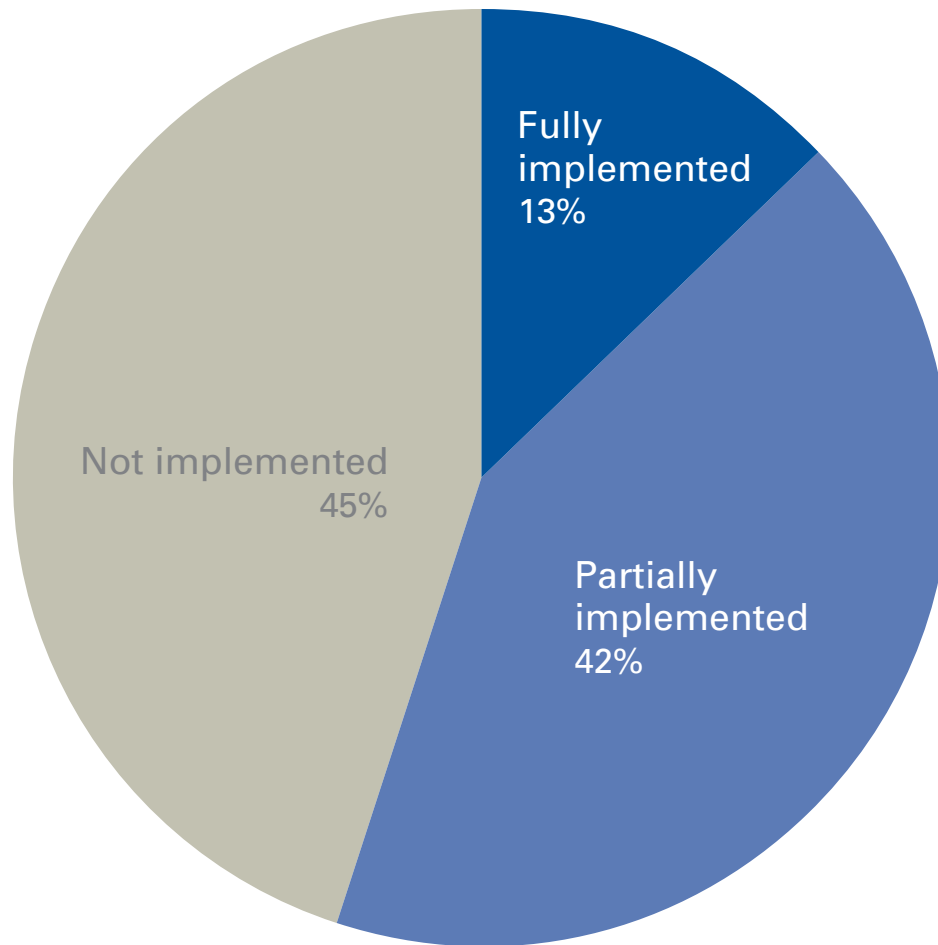
Activities That Elicit Security/Confidentiality Concerns Among Non-Users of Online Communication with a Health Professional, California, 2006/2007



Source: Custom Study for California HealthCare Foundation. Manhattan Research. 2006/2007.

Among non-users of online communication with a health professional, sending email to their doctor raises the greatest security or confidentiality concerns.

Use of EHRs at Hospitals, California, 2006/2007



Health Information Technology Hospitals

Thirteen percent of hospitals reported that they have fully implemented an electronic health record (EHR) system.

Source: American Hospital Association and California Hospital Association Health Information Technology Surveys. 2006/2007.

Use of Bar Coding at Hospitals, California, 2006/2007

USE	IMPLEMENTED		CONSIDERING IMPLEMENTING	
	FULLY	PARTIALLY	YES, WITHIN NEXT 3 YEARS	NO
Lab specimens	25%	44%	25%	6%
Tracking pharmaceuticals	12%	34%	43%	6%
Pharmaceutical administration	11%	7%	73%	5%
Supply chain management	13%	13%	63%	9%
Patient identification	19%	35%	35%	7%

Health Information Technology Hospitals

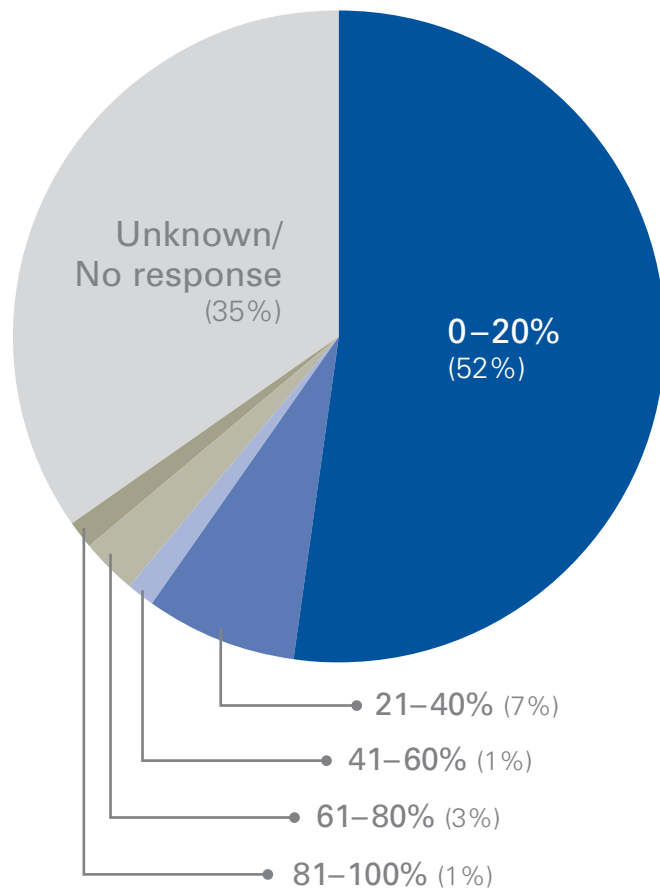
Twenty-five percent of hospitals reported that they have fully implemented bar coding for laboratory specimens. Fewer hospitals are using bar coding for pharmaceuticals or patient tracking.

Source: American Hospital Association and California Hospital Association Health Information Technology Surveys. 2006/2007.

Capital Investment and Spending for IT in Hospitals, California, 2006/2007

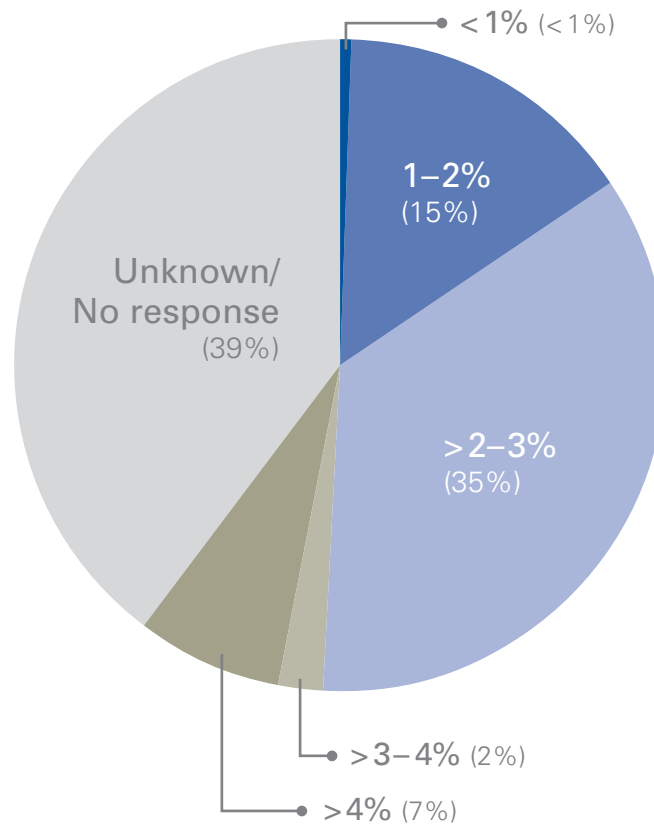
Total Capital Investment

percentage ranges for prior calendar year



Total Expenditures Projected

percentage ranges for next calendar year



Most hospitals reported that they spent up to 20 percent of all their capital investment on information technology (IT) in the last fiscal or calendar year.

Most hospitals reported that they expect to spend 2 to 3 percent of their total expenditures on information technology operations (non-capital costs) in the next calendar year.

Note: Percentages do not add to 100 percent due to rounding.

Source: American Hospital Association and California Hospital Association Health Information Technology Surveys, 2006/2007.

Barriers to Information Technology Adoption at Long Term Care Facilities, California, 2007

	SNF (multifacility, n=32)	SNF (free-standing, n=27)	RCFE (>75 beds, n=13)
Lack of capital resources	44%	78%	54%
Lack of professional IT staff	31%	44%	62%
IT product not integrated with other systems	56%	44%	85%
Staff lack computer skills	53%	48%	85%
Lack of reimbursement for using IT	17%	60%	29%

Health Information Technology Long Term Care

Fifty-six percent of skilled nursing facilities with more than one facility, and 85 percent of residential care facilities for the elderly cited “IT product not integrated with other systems” as being among the most significant barriers to information technology adoption.

Notes: SNF is a skilled nursing facility; RCFE is a residential care facility for the elderly.

Source: *Health Information Technology: Are Long Term Care Providers Ready?* California HealthCare Foundation, 2007.

Sources, Methodologies, and Definitions

The slides in this presentation are based on data from eight independent sources, which used diverse methodologies to collect the data between 2005 and 2007.

In 2005, the **Medical Group Management Association**, in collaboration with the University of Minnesota, surveyed medical group practices in the United States. It drew a stratified random sample of group practices—defined as three or more physicians practicing together with a common billing and medical record system—from a national database of 34,490 practices it had assembled for previous research. MGMA placed the sample into 16 cells (four regions and four practice sizes) and then randomly selected 50 percent of group practices in each cell. MGMA surveyed these practices in three stages: (1) It sent a Web-based survey to all of those that had an email address; (2) it sent a paper survey to those that did not have an email address and to those that did not respond to MGMA's request to complete the Web survey; and (3) it later conducted a shorter telephone survey of 749 group practices, randomly selected from the 16 cells to identify potential biases in the responses of participants in the Web-based and paper surveys. The telephone response rate, after three callbacks, was 94 percent. The total number of Web-based, paper, and telephone responses was 3,358, 177 of which were from group practices in California.

Harris Interactive, a market research firm, surveyed primary care physicians and pediatricians by mail on behalf of the California HealthCare Foundation between February and May of 2007. Harris drew a sample of 1,000 physicians from the current American Medical Association master file of all doctors practicing in California. Of the survey forms sent to these physicians, 119 were returned due to invalid addresses or ineligibility; Harris sent 49 replacement forms to physicians, which yielded a valid sample of 930. Harris received 361

completed surveys, a 39 percent response rate. It weighted the data by gender, years in practice, office or hospital setting, and specialty to come up with a representative statewide sample. It compared the California-only data to a national sample it had drawn in 2006 using the same methodology. The national survey took place from February to June of 2006 and obtained a 51 percent response rate. Throughout this report, Harris data include responses from California physicians in both the 2006 and 2007 surveys.

Manhattan Research, which focuses on the health care market, surveyed 601 California adults (ages 18 and older) on behalf of the California HealthCare Foundation between August and September 2007. Manhattan aggregated these data with 407 responses obtained from its 2006 CyberCitizen® Health survey, for a total sample of 1,008. The survey entailed an in-depth, random-digit-dial telephone interview. Manhattan told participants it was researching their use of the Internet and other communication tools. It weighted the data for—and benchmarked them to—age, gender, education, and region using normative data from the latest U.S. census. The survey data are representative of both online and offline adults.

In 2006, **Cattaneo & Stroud**, a health care consulting firm, surveyed 302 medical groups in California. "Medical group" was defined as six or more primary care physicians contracting directly with an HMO. Two hundred and forty-seven groups, or 82 percent, responded. The survey asked about the implementation status of electronic health records and chronic disease registries.

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Thank you.

Sources, Methodologies, and Definitions, continued

In December 2005, the **California Medical Association** surveyed the use of information technology by physicians in the state. CMA broadcast its survey via email, fax, and placement on the association's Web site, giving physicians one month to respond to 212 items, which took about 20 minutes to complete. Three hundred fifty-nine physicians or physician staff responded. Because CMA broadcast the survey to a nonrandom sample of unknown size, it is not possible to compute a response rate. While most of the respondents (59 percent) were in practices comprising one or two physicians, practices of all sizes responded. Roughly equal proportions of primary care physicians and medical and surgical specialists participated.

Evaluators for the **Community Clinics Initiative**, a grant-making program that supports community health clinics in California, conducted an email survey in 2005 of clinic medical directors and executive directors to assess clinics' information technology capabilities. The survey gathered data from 177 California clinics, a 77 percent response rate.

In 2006, the **California HealthCare Foundation** supported research to better understand the health information technology (HIT) readiness of skilled nursing facilities (SNFs), residential care facilities for the elderly (RCFEs), and community-based service providers in the state. This research included a literature review, nonrandom surveys, and focus groups. The survey of long term care providers was conducted in collaboration with the California Association of Health Facilities and Aging Services of California, which distributed the survey form to a select list of HIT decision-makers at facilities with an interest in HIT. Two hundred forms went to 150 SNFs and to 50 RCFEs with more than

75 beds. The SNF and RCFE response rates were 47 percent and 24 percent, respectively. Participants completed 82 of 103 forms electronically; the other 21 were completed on paper at the end of five focus groups. The researchers gathered additional qualitative information in the focus groups, which included administrators, nursing directors, and care managers who convened in Los Angeles, Sacramento, and Fremont in October 2006.

The **American Hospital Association** surveyed about 4,000 hospitals in the fall of 2006. More than 1,500 hospitals—about 31 percent of all community hospitals in the United States—responded. The AHA sent its survey form via email and fax to chief executive officers, who could complete it on paper or on a secure Web site. Seventy-one California hospitals participated, a state-level response rate of about 20 percent. To supplement these data, between July and September of 2007 the **California Hospital Association** contacted 414 hospitals in the state that did not respond to the earlier AHA survey. CHA received 76 additional responses, increasing the total response rate among California hospitals that participated in both the AHA and CHA surveys to 30 percent.

FOR MORE INFORMATION



CALIFORNIA
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FOUNDATION

California HealthCare Foundation
1438 Webster Street, Suite 400
Oakland, CA 94612
510.238.1040
www.chcf.org