

2002 HIMSS/AstraZeneca Clinician Survey

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1. Executive Summary

This HIMSS/AstraZeneca Clinician Wireless Survey explores the use of computers and information technology in outpatient clinical settings. The survey was created by HIMSS, sponsored by AstraZeneca and supported by MGMA (the Medical Group Management Association), AMGA (the American Medical Group Association) and AMDIS (the Association of Medical Directors of Information Systems). A total of 453 responses were received.

- **Technology in the physician office.** Nearly all of the physician offices in this sample have at least one desktop or laptop computer. And almost three-quarters of the locations indicated that they have handheld technology—such as a PDA—in place. Respondents most frequently cited computers/servers as the technology they will purchase in the next year.
- **Software usage:** Technology in physicians' offices most frequently is used for administrative functions rather than for clinical purposes. The top three reported locations for desktop/laptop computers are in reception/front office, in the back office/billing and in administration. Drug reference, scheduling and charge capture are the top three uses for handheld technology. Only 30% of respondents indicated that an Electronic Medical Records system (EMR) was in place at their facility.
- **Internet connections:** Almost every respondent indicated that their facility has an Internet connection, and nearly 75% have a 24-hour-a-day, seven-day-a-week connection. Despite the rise in Internet connectivity, only 20% of offices use e-mail to communicate with patients about clinical issues.
- **Technology costs limiting automation.** To use technology more efficiently at their facilities, respondents would like to see more software (46%) and hardware (36%) offered that fits within their budget. Conversely, almost 16% of respondents indicated that no changes are needed for improvement.

Other notable findings:

- The primary individuals entering data into medical records are physicians (54%) and nurses (13%).
- Although almost all respondents reported that they would buy hardware, software or other technology in 2002, slightly more than half indicated that they would make purchases totaling less than \$50,000.

2. Methodology

Data was collected for this survey from August 8 to 26, 2002. Two separate audiences were invited to participate in this survey—physicians, including approximately 800 AMDIS members; and practice managers and executives who are members of MGMA (Medical Group Management Association) and AMGA (American Medical Group Association). A total of 453 useable responses were received.

3. Profile of Survey Respondents

Survey respondents were asked to provide two kinds of information about their organizations. First, they were asked for demographic information about the entire organization. Second, physician respondents were asked to identify specific demographic information about the location in which they practice; practice managers and executives were asked about the location at which the majority of their physicians practice. In this report, this location will be called the primary facility.

Respondents were asked to identify the number of full-time equivalent (FTE) physicians who practice in their organization. Slightly more than 61% of respondents indicated that their organizations have nine physician FTEs or fewer; the median number (the midpoint of all responses) of physician FTEs is seven. For the most part, respondents' organizations aren't large—slightly more than half of respondents said their organizations had revenue of less than \$5 million in their most recent fiscal year; only 6.9% of respondents said their organizations had revenue in excess of \$50 million in the past fiscal year.

Respondents also were asked how many physician FTEs practice at the primary location. Almost 20% of respondents reported that one or two physician FTEs practice at the primary location, while 25% reported that their primary location had 10 or more physician FTEs. The median number of physician FTEs was five. Total medical revenue for primary facilities are also fairly small—20% of the respondents indicate that the primary facility had less than \$1 million in medical revenue in their most recent accounting year, while half of all respondents said their primary facility had less than \$3 million in revenue. Only 13% of respondents reported that the primary facility had more than \$10 million in revenue.

An overwhelming 81% of survey respondents said physicians are the majority owner of the primary facility. Another 11% of the practices are owned by hospitals or integrated healthcare delivery systems, and 2% of practices are owned by a university or medical school. The remainder of the practices are owned and operated by the government, insurance companies and practice management companies.

With respect to medical specialty, 39% of respondents represent a single specialty practice, such as OB/GYN, dermatology or gastroenterology. Family practice offices comprise another 32% of the sample. Rounding out the sample are multispecialty practices, 12%; internal medicine, 7%; and pediatrics, 3%.

Table 1

Table 2

Table 3

Table 4

4. Desktop and/or Laptop Computers

About 31% of the respondents indicated that the primary office has more than 30 desktop or laptop computers. Almost one-quarter of the respondents—23.3%—indicate that their primary location has nine or fewer computers. Only 1.3% of respondents said their practice location has no computers. Of the six respondents who said their primary location did not use computers, only one indicated that they planned to purchase computers in the future.

There does seem to be a correlation between the medical revenue a facility collects and the number of computers in that facility. Approximately 65% of the respondents who reported medical collections of less than \$1 million indicated that their primary facility has nine or fewer desktop or laptop computers. In comparison, 89% of respondents whose primary facility has revenue of \$10 million or more have more than 30 computers.

Respondents indicated that computers are most commonly located in administrative locations. Almost 98% of respondents reported that their facility had a computer located in at least one administrative location. Specifically, 92% of respondents say their primary facility has desktop or laptop computers in their reception or front office area. Some 89% of respondents indicate that their back office/billing area has at least one desktop or laptop computer, while 84% of practices have a desktop or laptop computer that is used by administrative staff.

Beyond those areas in which computers traditionally have been used for a while, there's less penetration of technology in clinical areas. Only 68% of respondents said they use desktop or laptop computers in at least one clinical area. In clinical areas, computers are most widely found in laboratories (49%), radiology (30%) and examination rooms (16%).

Some 48% of respondents said their primary location has desktop or laptop computers in four or five of the nine areas identified above. Only 7% of practices use computers in only one or two of the nine areas; at the other extreme, only 5% of respondents say there are desktop or laptop computers in eight or all nine of the areas covered by the survey.

Table 5

Table 6

5. Internet Connectivity

The vast majority of respondents reported that their primary facility has an Internet connection; only 2% of the respondents say they do not have an Internet connection. Among those who are able to use the Internet, almost 75% have a continuous, round-the-clock connection. The most popular method of connection is a T-1 or partial T-1 line, used in almost 45% of respondents' offices. Rounding out the types of Internet connections are digital subscriber lines, or DSL, used by 36%; dialup connections, used by 13%; and cable modem, in place at 12% of primary locations. The remaining 3% of respondents said their office uses another type of connection.

With respect to organization's revenue, all seven respondents who indicated that their primary facility did not have an Internet connection reported total medical revenue of less than \$1 million. Additionally, although the majority of all practices have a continuous Internet connection, continuous 24-hour, seven-day-a-week connections are more common in larger practices. Responses showed that 31% of primary locations with less than \$1 million in medical revenue had intermittent Internet connections, compared with 15% of respondents who reported medical revenue of more than \$10 million.

Table 7

Table 8

6. Handheld Technology

Some 72% of respondents said handheld technology is used at their primary facility. The most popular type of technology used is the personal digital assistant (PDA), used at 64% of respondents' facilities. Rounding out the types of handheld technology in use are two-way pagers, 26%; and tablet computers and other technology, each of which were identified by 7% of respondents. Among respondents using handheld technologies, 53% report that their facility is using only one of the types of technologies identified in the survey. Slightly more than 17% use two technologies, and 2% use three technologies.

As with other types of information technology, practices with less medical revenue are less likely to use handheld technology than large practices. About 66% of facilities with medical revenues of less than \$1 million use handheld computers, compared with 78% of facilities with \$10 million or more in revenue.

Most physicians with handheld devices are using them as a portable drug reference resource. Almost 70% of respondents say they use handhelds to get information on pharmaceuticals. Scheduling is the next most popular use for handheld devices—approximately 41% of respondents say they use handheld devices for scheduling purposes. Interfacing to hospital data (12%) and downloading lab values (9%) were the least frequent uses for handheld devices. More than two-thirds of respondents—70%—reported that handheld technology is used in only one or two of the areas. Only 3% of respondents say they use handheld technology in eight or nine of the areas (out of 10), and no respondents use the technology in all identified areas.

Table 9
Table 10

7. Electronic Medical Records

Almost three-quarters of the respondents indicate that their ambulatory care facility does not have an electronic medical records system. Among those facilities that do have electronic medical records systems, there is a correlation between medical revenue and use of electronic medical records—facilities that collect have higher annual revenue are more likely to have an electronic medical record than are facilities with lower annual revenue. Specifically, 20% of respondents who reported medical revenue of less than \$1 million indicated they have an electronic medical records system. By contrast, 36% of facilities with revenue of \$5 million to \$10 million and 28% of facilities with revenue in excess of \$10 million have some type of electronic medical records system.

Although the sample sizes for some medical specialties are small, data suggest that the penetration of electronic medical records systems varies by the specialty of the practice. Some 42% of respondents who report that they work in an internal medicine setting use an electronic medical records system. By contrast, only 8% of respondents who work in a pediatric practice say they have an electronic medical record. In other types of practices, penetration of electronic medical records system are: multispecialty practice, 33%; family practice, 30%; and specialty practice (e.g. dermatology, gastroenterology), 27%.

Among those practicing at facilities with an electronic medical records system, 21% of respondents report using the system across all of the departments/services in the facility. The remaining 8% of the sample indicates that the electronic medical record at their facility is available for only some departments and services.

Among facilities that have an electronic medical records system in either some or all departments, more than half—54%—of the respondents indicate that physicians primarily enter the data into the medical record. Another 13% of respondents say the nursing staff is primarily responsible for entering data into the electronic medical record. Rounding out the responses are transcriptionists, 12%; office managers/administrative staff, 11%; and other personnel, 10%.

Table 11
Table 12

8. E-Mail Utilization

Almost 79% of respondents indicate that their practice does not use e-mail to communicate clinical information to patients. Respondents gave a variety of reasons why their staffs do not use e-mail for discussing clinical issues. The most frequently cited reason was legal issues, identified by 17% of respondents. Another 11% of respondents indicated that the lack of reimbursement was the reason why they don't use e-mail communication with patients. Rounding out the responses are concerns about HIPAA, 15%; lack of time, 15%; a poor fit with current practice workflow, 15%; patients don't use e-mail, 13%; and practitioners' comfort level with using technology, 12%.

However, when the responses from physicians are separated from the responses by practice administrators/executives, a slightly different picture emerges. Almost 38% of physicians reported that they use e-mail to communicate with patients on clinical issues, 16% more than the entire sample. Of physicians who don't use e-mail communication, some 47% say the reason is their patients do not use e-mail. About one-third of physician respondents also cite legal concerns, lack of time and reimbursement issues as reasons for not using e-mail. Practice administrators and executives, on the other hand, are more likely to cite legal issues (55%) and HIPAA concerns (44%) as reasons why communication with patients does not take place with patients.

Table 13

Table 14

9. Future Spending

Almost all of the respondents—91%—indicated that they would make some information technology purchases in 2002. Slightly more than half of the respondents, 57%, said their practice would spend \$50,000 or less on technology in the upcoming year. Only 9% of respondents said their practices would spend more than \$500,000 on technology in the next year.

The survey revealed a relationship between a practice's revenue and the amount of money it spends on information technology. Some 45% of respondents from practices with revenue of less than \$1 million said they would spend less than \$10,000 on technology in 2002. By contrast, 42% of respondents representing organizations with more than \$10 million in revenue said they would spend more than \$500,000 on technology in 2002.

Technology plans in ambulatory care settings suggest that hardware purchases gets more attention than software. Almost 43% of respondents said their practices will purchase computers and/or servers in the next year. Additionally, 28% of respondents reported that they will purchase PDAs, and 27% report that they would purchase networking equipment. The most frequently cited software purchases are electronic medical records systems, mentioned by 38% of respondents. Rounding out software purchases are registration and scheduling systems, 20%; billing/claims submission applications, 17%;

and clinical and administrative software, at 16% each. Only 13% of respondents indicated that they would not purchase any software, hardware or networking equipment.

Respondents from ambulatory practices with less than \$2 million in revenue were most likely to report that they were not going to purchase hardware, software or networking technology; 58% of respondents from practices of this size said they had no purchasing plans. Respondents from larger practices are somewhat more likely to report that their organizations plan to purchase computers or servers; one-quarter of respondents from organizations with revenue of more than \$10 million reported plans to purchase registration/scheduling software, billing claims software and/or clinical software.

Table 15

Table 17

10. Technology Improvement

Respondents were asked to identify the areas in which hardware and software vendors could expand the use of technology. The top two responses involve budget issues—46% of respondents said they would like to see more software offered that they could afford given their budget constraints, and 36% said they would like to see more hardware offered that is within their budgetary limits. Rounding out the improvements are end-user training, 31%, and turnkey software offerings, 21%. Only 16% of respondents indicated that no changes are needed and that vendors are meeting all their needs.

Budgetary concerns are universal—respondents from all practice sizes said they needed to see more software and hardware that they could afford under their budgets as the prime way to make technology more effective. Respondents from smaller practices are more likely to respond that they do not believe that any changes are necessary to meet their needs—almost 65% of those who responded that no technology changes are necessary work for practices with revenue of \$3 million or less.

Table 16

11. Conclusion

Physicians' offices appear to be increasing their investment and use of information technology. The fact that computers are widely used is illustrated by the fact that nearly all respondents say their practices have at least one desktop or laptop computer. Handheld devices also are gaining acceptance, as nearly three-fourths of survey respondents say their practice has at least one handheld device.

As with inpatient facilities, software in ambulatory care settings is used more frequently for administrative purposes than it is for clinical purposes. Fewer than one-third of respondents have electronic medical records software in some or all of their departments, and only 20% of respondents report that their practice uses e-mail to communicate with patients on clinical issues.

Most respondents indicated that their practices would purchase some type of new technology in 2002. However, almost half indicated that the use of technology could be more effective if software and hardware products were more affordable. Further, smaller practices may not be ready to take the plunge into technology. Respondents from practices with smaller annual revenue totals are less likely than larger practices to purchase software or hardware in the next year. They are also less likely to believe that more products need to be made available to enable their facility operate more effectively.

12. About HIMSS

The Healthcare Information and Management Systems Society (HIMSS) provides leadership in healthcare for the advancement and management of information technology. Headquartered in Chicago, HIMSS provides services to more than 13,000 members, including IT healthcare corporations, firms and professionals from around the globe. Through the collaboration of 41 chapters and 20 special interest groups, HIMSS directs and shapes the healthcare industry, encourages emerging technology and promotes public policies that will improve healthcare delivery. For more information, visit HIMSS at www.himss.org.

13. About AstraZeneca

AstraZeneca (NYSE:AZN) is a major international healthcare business engaged in the research, development, manufacture and marketing of ethical (prescription) pharmaceuticals and the supply of healthcare services. It is one of the top five pharmaceutical companies in the world with healthcare sales of \$15.8 billion and leading positions in sales of gastrointestinal, oncology, anesthesia (including pain management), cardiovascular, central nervous system (CNS), and respiratory products. In the United States, AstraZeneca is an \$8 billion healthcare business with more than 10,000 employees.

14. How to Cite This Study

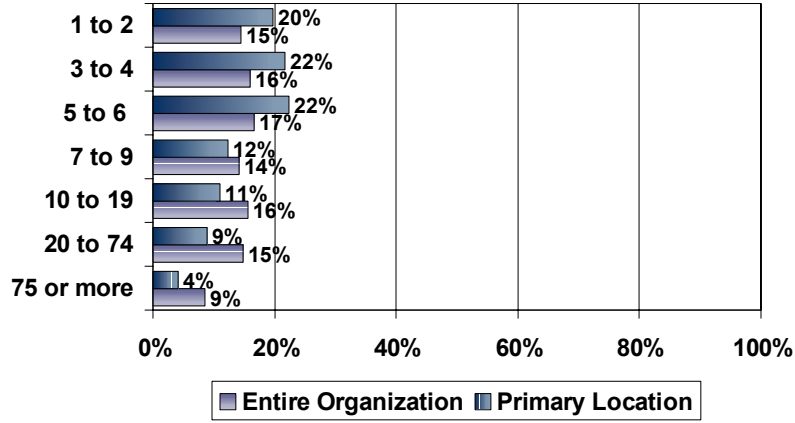
Individuals are encouraged to cite this report and any accompanying graphics in printed matter, publications, or any other medium, as long as the information is attributed to the HIMSS/AstraZeneca Clinician Wireless Survey.

15. For More Information

Tarsis Lopez
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HIMSS
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tlopez@himss.org

Number of Physicians

Figure 1

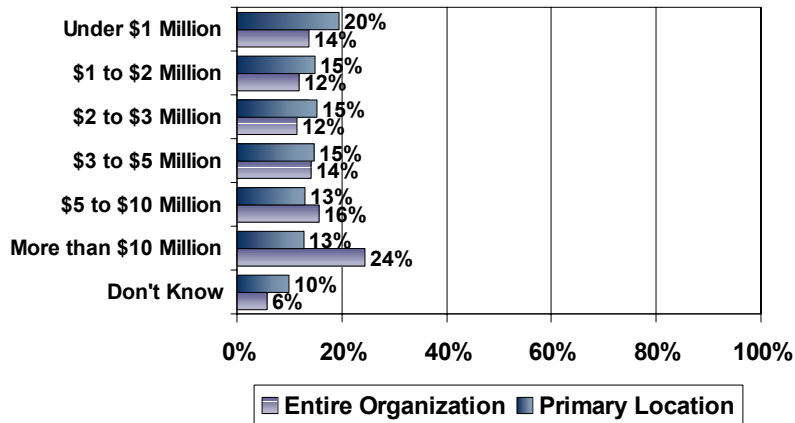


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Total Medical Revenue

Figure 2

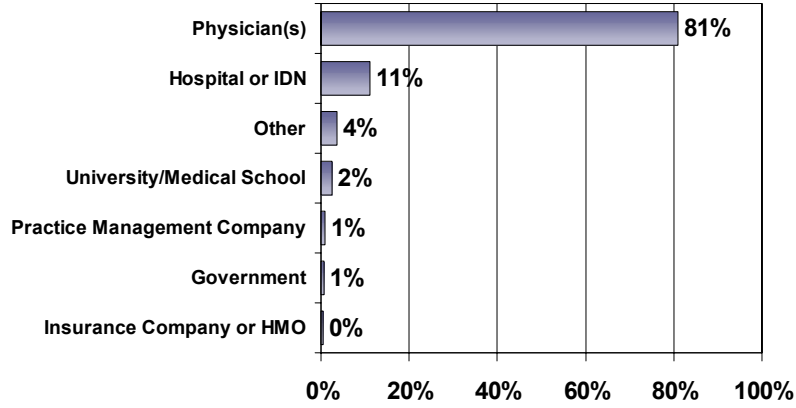


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Majority Owner of Practice

Figure 3

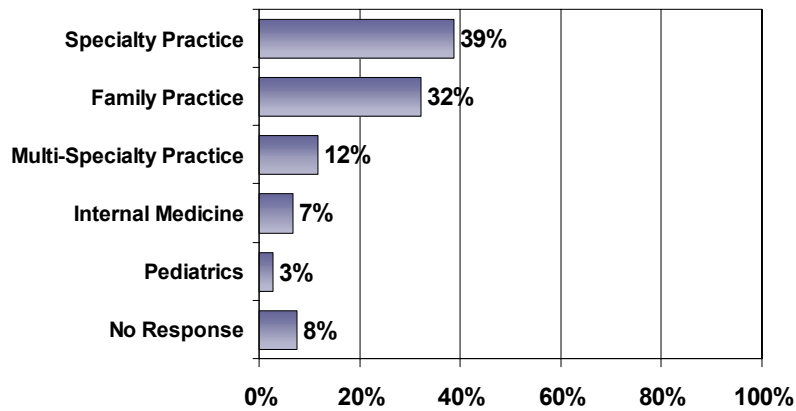


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Primary Medical Specialty

Figure 4

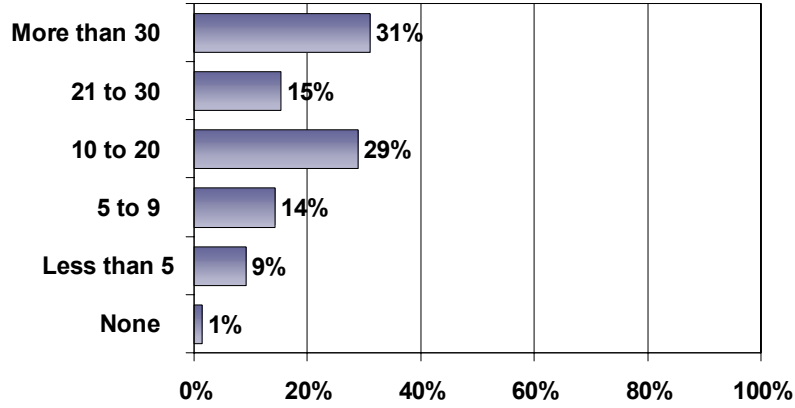


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Number of desktop/laptop Computers

Figure 5

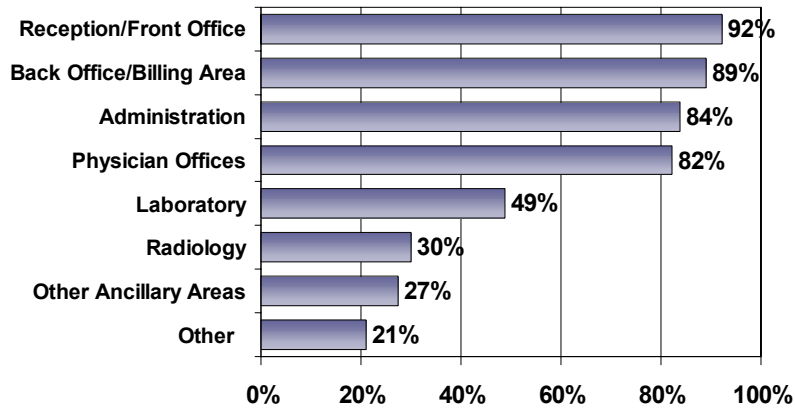


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Where are the desktops?

Figure 6

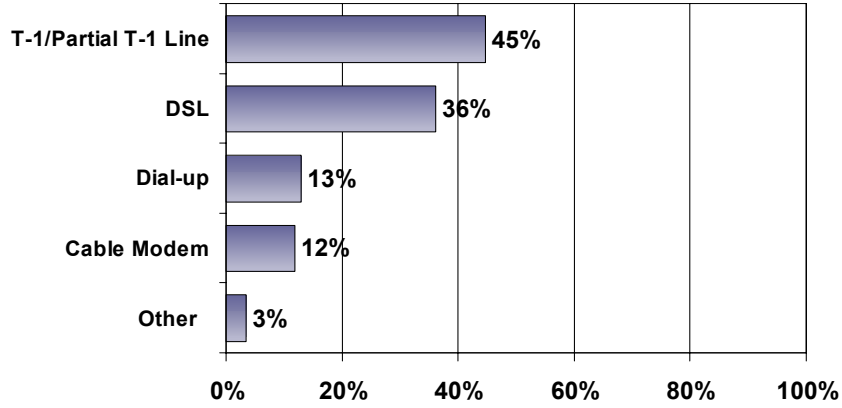


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Internet Connection Type

Figure 7

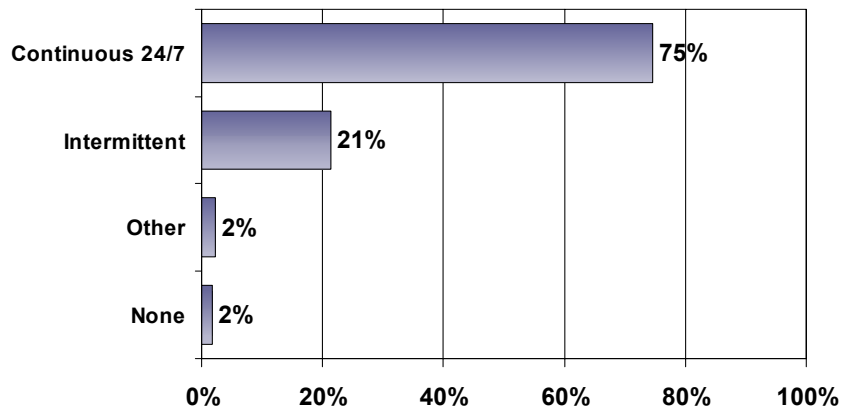


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Internet Connection Frequency

Figure 8

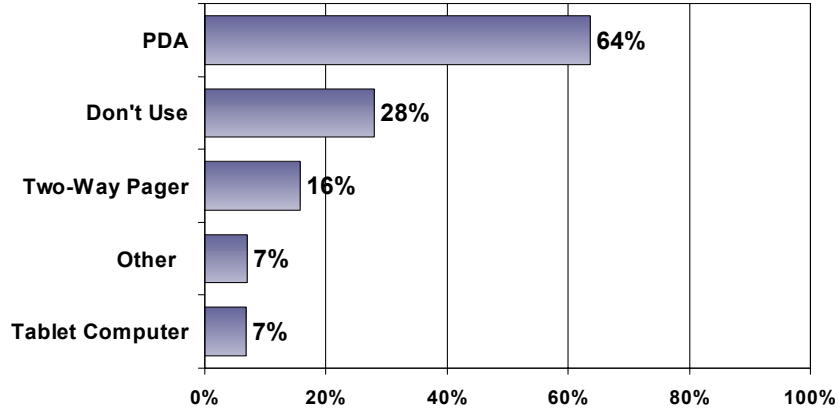


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Types of Handheld Technology

Figure 9

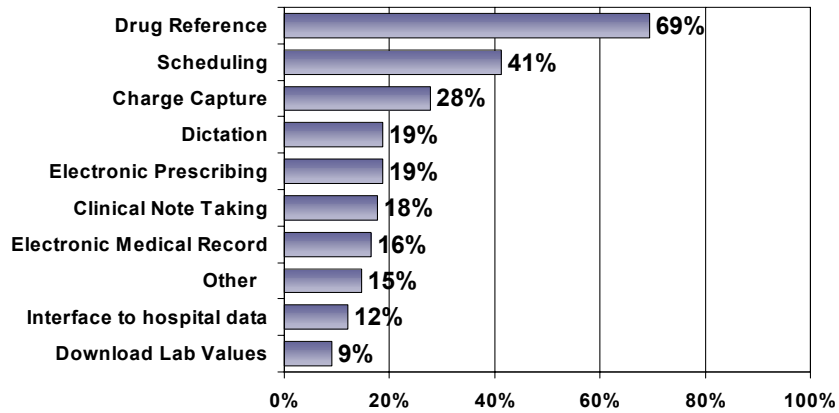


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Use of Handheld Technology

Figure 10

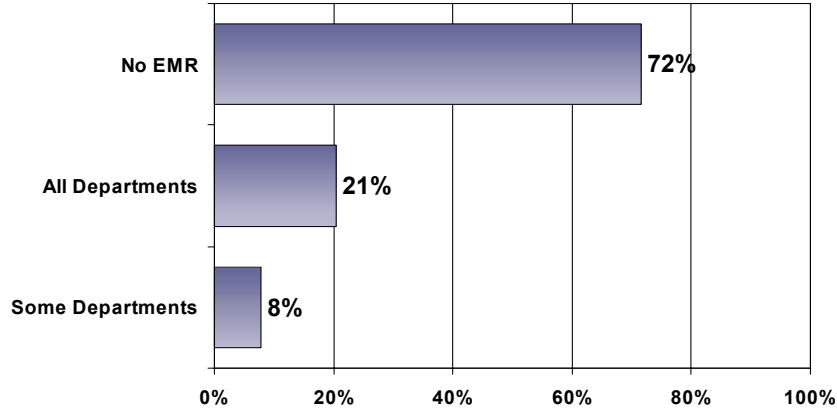


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Use of Electronic Medical Record

Figure 11

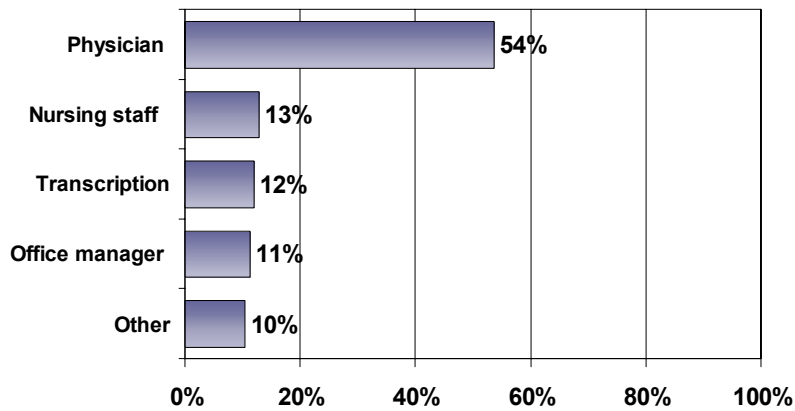


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Who Enters Data into Facility's EMR?

Figure 12

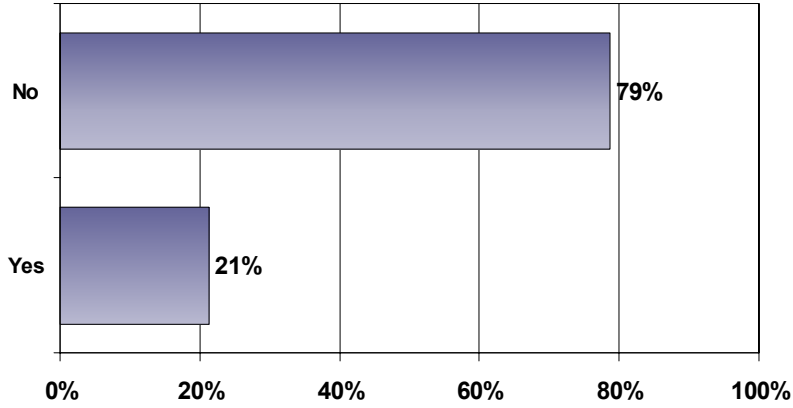


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Communication with Patients via E-Mail

Figure 13

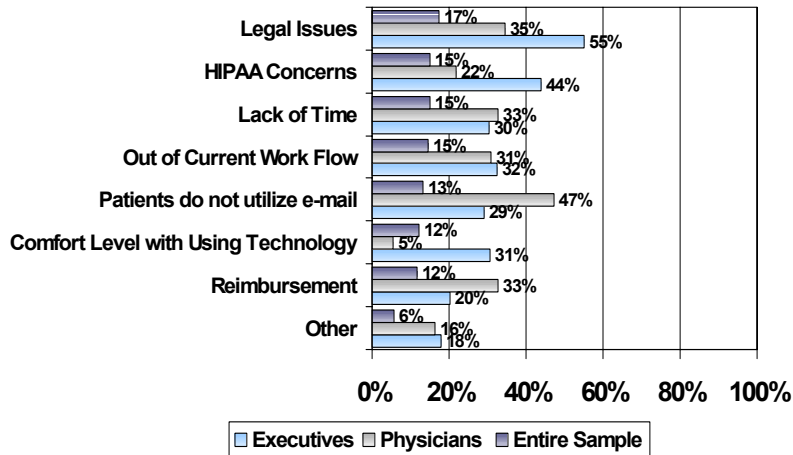


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Why don't (physicians) communicate with their patients by e-mail?

Figure 14

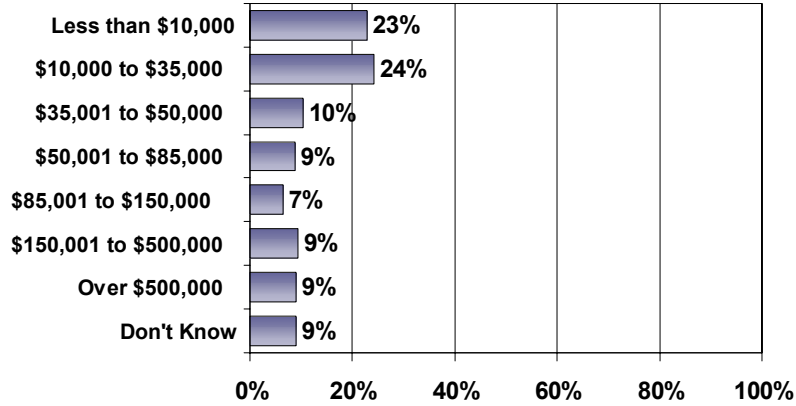


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Planned 2002 IT Spending

Figure 15

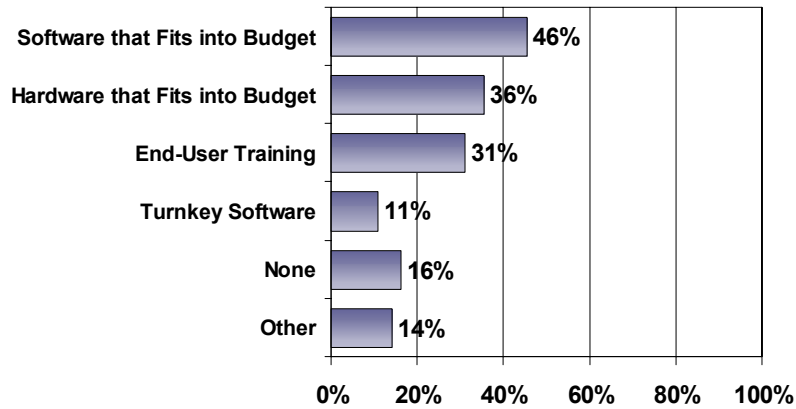


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Areas for Improvement

Figure 16

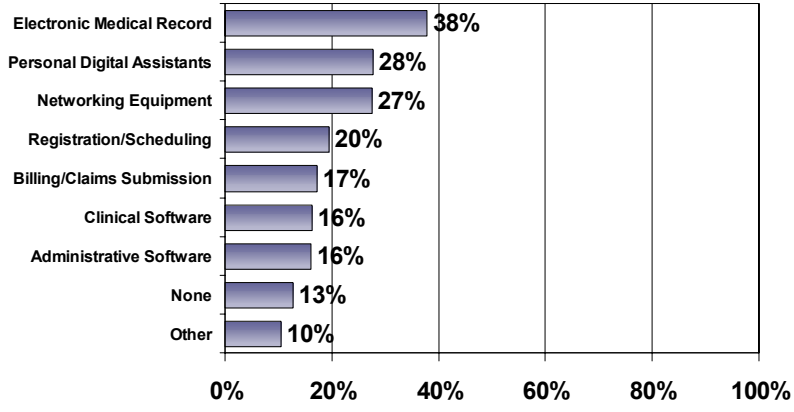


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Planned Purchase Areas (in Next Year)

Figure 17



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