

An EHR User-Satisfaction Survey: Advice From 408 Family Physicians

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Deciding whether to move to an electronic health record (EHR) system and which system to choose can be paralyzingly difficult questions. We hope this article can help. In the February 2005 issue of *Family Practice Management*, we published a survey instrument designed to elicit advice from family physicians already using EHR systems,¹ and over the past several months we have collected more than 400 usable responses. The results offer help with both questions.

Because respondents were self-selected, the results of the survey do not necessarily reflect the state of EHR use in family medicine, but for physicians contemplating the purchase of an EHR, they may be even more useful. The results constitute the kind of advice you would get if you could ask 408 colleagues how they feel about the EHR systems they use.

About the respondents

The EHR marketplace is notoriously fragmented, with many small vendors in competition and few clear market leaders. Our results are certainly consistent with that picture. The 408 respondents reported on 77 different EHR systems, nine of which are noncommercial systems developed mostly for particular institutions – clinics, universities, the military, the Department of Veterans Affairs, etc. Of the 77 systems, 56 are used by no more than three respondents each. On the other hand, the 11 most commonly reported systems, each reported by nine or more respondents, account for over two thirds of responses (69 percent; N = 283). In the analysis below, we report system-by-system results for these 11 systems, using data from all 408 respondents as a point of reference against which to view the individual-system results. We chose to report on these 11 systems because they offer enough responses to ensure a reasonable

spread of opinions where respondents' opinions differed. (For more on these 11 systems, see "EHR systems reported on in this article," page 31.)

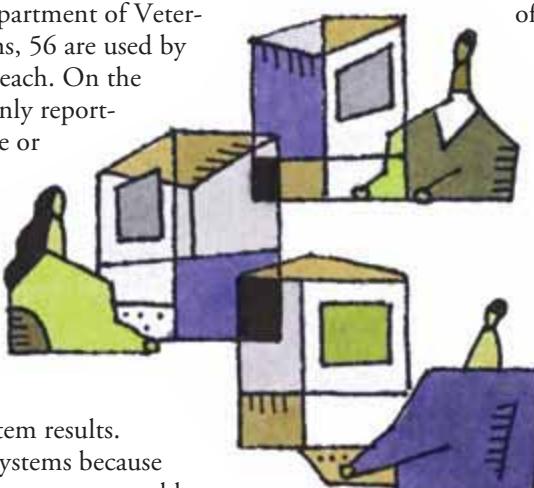
Respondents to the survey are generally pleased with the EHR systems they use. Whether they thought the system they use was a bad choice or a good choice to begin with, 76 percent (312) now think it a good choice. The fact that 66 percent (269) either made the final choice of system or had significant input into the decision may mean that a majority of respondents want to believe they made good choices even if they didn't, but it could also mean that the more input a physician has into the decision, the more likely he or she is to be happy with the outcome. In any case, only a minority of those who made the final decision think now that it was a bad one (see "Respondent attitudes and degree of involvement in choice of EHR system," page 32).

The survey asked respondents to use a seven-point scale ranging from Novice to Expert to rate their expertise as computer users "in general, and not just in terms of this EHR system." Responses were skewed strongly toward the high end of the scale, with 78 percent rating themselves as above average and only 22 percent average or below. The survey did not specify behaviors or capa-

bilities corresponding to the seven levels of expertise, so the reported levels should be taken as indications of the respondents' confidence in their abilities rather than their actual abilities.

In addition to collecting limited information about respondents and their practices, the survey covered several topic areas, including these:

- Functionality,
- Overall ease of use and flexibility,
- Ongoing service and support,
- Cost,
- Overall satisfaction. ▶



Functionality

The functionality section of the survey contained 12 subsections eliciting user satisfaction with a variety of EHR functions. For instance, the first subsection asked about satisfaction with “the way your EHR allows you to perform the following chart review functions.” It went on to list eight separate functions such as “obtain and review lab results” and “review prior vital signs,” along with a summary item: “review chart information (overall).” Respondents were asked to rate each *Very satisfied*, *Satisfied*, *Neutral*, *Dissatisfied* or *Very dissatisfied*, or to check *Function not installed* or *Function installed but not used*.

■ Most respondents were satisfied or very satisfied with the functionality of their EHRs.

■ Satisfaction varied among the 11 systems we analyzed, with five falling below the overall level of satisfaction reported.

■ Bar charts in the article are designed for easy visual comparison of percentages of positive and negative responses.

“Functionality rankings for 11 EHR systems,” page 33, shows how the 11 systems ranked in each of the subsections, with rankings determined by percentage of *Satisfied* and *Very satisfied* responses combined. As you will see, e-MDs (formerly TopsChart) was ranked first in five areas, while Centricity (formerly Logician) and Alteer Office received three first-place rankings each, and EpicCare and HealthMatics received one each. For a different perspective on responses in this realm, see “Overall satisfaction with functionality of 11 EHR systems,” page 33. For each of the 11 systems, the chart represents the percentage distribution of responses to the 13 items represented in the “Functionality rankings” table. Bars to the right of the center line represent responses of *Satisfied* and *Very satisfied*, while those to the left represent dissatisfaction and other responses. The results for all 408 respondents as a group are plotted separately for comparison. Both sides of the center line are important. For instance, e-MDs has the highest rating for overall satisfaction with functionality, followed by Centricity, eClinical-Works and EpicCare. But some of the systems toward the bottom of the chart have relatively low dissatisfaction scores despite their relatively low satisfaction scores. In the cases of Amazing

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ADDITIONAL SURVEY RESULTS

To see more detailed information on respondents and their practices, the EHR systems they reported, and their overall satisfaction with EHRs, see “Appendix: Additional Survey Results,” which you can download from the online version of this article at <http://www.aafp.org/fpm/20051000/29aneh.html>. Among other things, the appendix includes a chart showing the number of users reporting each of the 77 EHR systems mentioned, tables showing how many software interfaces are present in the reported EHR installations, and system-specific responses to the statement, “If I could go back to paper-based records with no financial penalties, I would do so.”

Charts and SOAPware especially, this seems to be accounted for by large percentages of *Function not installed* responses. Such responses may of course reflect dissatisfaction with the EHR, but not necessarily.

A word about this chart format, which is used often in the article: By displaying the four “satisfaction/dissatisfaction” bars in characteristic colors and arranging them around the center line, the chart gives you a way to compare those ratings at a glance. And by including bars for other responses, it gives you a more complete picture of the data collected. The total length of each bar represents 100 percent of responses, with some slight variation because of rounding and a handful of blank responses. Just remember that the less colorful bars for *Neutral*, *Function not installed*, etc. are not necessarily measures of satisfaction or dissatisfaction; they could as easily be shown on the right as on the left of the “satisfaction/dissatisfaction” bars.

Overall ease of use and flexibility

The survey included four items in this general area, asking the respondent to indicate his or her level of agreement or disagreement with these statements:

- This EHR allows individual user-specific customization.
- This EHR minimizes user data input.
- This EHR offers multiple note creation options.
- This EHR is fast (minimal wait between

screens, minimal boot-up time, etc.).

Summarizing the results in one chart, as we did for overall satisfaction with functionality, produced the chart in "Overall ease-of-use ratings for 11 EHR systems," page 34. The chart shows the percentage distribution of responses to the four items above. The higher the *Agree* and *Strongly agree* percentages, the more flexible and easy to use the system is considered by respondents. As you can see, e-MDs got the highest rating, with SOAPware, Amazing Charts, Practice Partner and Centric-

ity following. The rest of the 11 systems all fell below the average for all responses, with Misys EMR bringing up the rear.

Given that the functionality of an EHR system is enhanced by the presence of software interfaces with related systems, the survey asked about interfaces with the practice management system (PMS), a laboratory system, a radiology system, a hospital information system and the information systems of commercial pharmacies. The PMS and lab interfaces are present in a majority of the

EHR SYSTEMS REPORTED ON IN THIS ARTICLE

Company, Web address and telephone	Estimated size of current user base*
Alteer Office http://www.alteer.com 949-789-0500	350 family physicians in 250 practices; 70 percent of users are solo physicians; the main company focus is now California
Amazing Charts http://www.amazingcharts.com 866-903-0821	> 725 practices, perhaps one third of which are family medicine practices
Centricity (Logician) http://www.gehealthcare.com/usen/img_info_systems/centricity_clin_info/products/emr.html 800-558-5120	> 10,000 physicians, of which more than 30 percent are family physicians
eClinicalWorks http://www.eclinicalworks.com 866-888-MY-CW	3,600 practices, of which 120-130 are family medicine practices
e-MDs (TopsChart) http://www.e-mds.com 888-344-9836	730 family medicine practices
EpicCare http://www.epiccare.com 608-271-9000	80 clients representing 2,400 sites and > 66,000 physicians; 51 of the clients (1,790 sites, > 47,200 physicians) fully operational
HealthMatics EMR http://www.a4healthsystems.com 888-672-3282	250 family medicine clients representing nearly 400 sites
Misys EMR http://www.misyshealthcare.com/Products/product+portfolio/misys+emr/index.htm 866-MISYS-US	18,000 practices with 92,000 physicians; family medicine the largest specialty segment
NextGen EMR http://www.nextgen.com/pro_emr.asp 215-657-7010	Approximately 200 family medicine practices
Practice Partner http://www.pmsi.com 800-770-7674	450 family medicine practices
SOAPware http://www.docs.com 800-455-SOAP	7,000-8,000 sites; 1,922 family-physician users, more than from any other specialty

 e-MDs had the highest rating for overall ease of use.

 The majority of respondents reported having a software interface between their EHR and their practice management and lab systems.

*Information in this column is supplied by spokespersons for the vendors; while we attempted to obtain figures for family physician users, some vendors were unable to supply specialty-specific information, some could supply numbers of physicians and some could supply only numbers of practices.

EHR installations respondents reported on, and the average number of interfaces present varied from less than one with SOAPware and Amazing Charts to 3.7 with EpicCare.

Ongoing support

The survey asked respondents to indicate their agreement or disagreement with the statement, "Our EHR company provides excellent ongoing support and service." Some 61 percent said they agreed or strongly agreed, although the distribution of responses varied a good deal from one system to the next in the 11 systems most commonly reported (see "Ongoing support and service," page 34). The highest rated system in this category was Alteer Office, with e-MDs, Amazing Charts, SOAPware and eClinicalWorks following.

■ Respondents were generally happy with the support and service provided by their EHR companies.

■ Cost estimates supplied were variable enough to seem untrustworthy.

■ To judge user satisfaction, we asked respondents how they perceived the value of their EHRs and whether they would recommend them.

year, while the rest have costs ranging upward from \$9,000 per physician per year.

One cost-related item may well give more insight into the respondent's subjective evaluation of the value of his or her EHR system than into the actual cost. We asked respondents to indicate agreement or disagreement with the statement, "This EHR cost more than it's worth," with the results shown in "Perceived value," page 35. Given the format of the statement, greater percentages of disagreement with it imply a higher ratio of benefits to cost. Thus, Amazing Charts comes out on top in this analysis, with 100 percent of respondents (11) indicating that they *do not* agree that the system costs more than it's worth. Misys EMR again falls to the bottom of the pile, with 50 percent of respondents (8) agreeing that the system cost more than it's worth.

Another indicator of satisfaction, and a finding that is encouraging for EHR use in general, is that 87 percent of respondents disagreed or strongly disagreed with the statement, "If I could go back to paper-based records with no financial penalties, I would do so." Generally speaking, they like their EHRs.

To get another perspective on satisfaction, the survey asked respondents to indicate their agreement or disagreement with statements recommending the EHR system they use to practices of three size ranges and to any physician. Ranking the systems separately for each of the four questions, with ranking based on the sum of *Agree* and *Strongly agree* percentages, yields the table shown in "Respondent recommendations" on page 35. Percentages are given alongside the rankings because percentage differences between

RESPONDENT ATTITUDES AND DEGREE OF INVOLVEMENT IN CHOICE OF EHR SYSTEM

- Favored initially; still consider it a good choice
- Opposed initially; now think it a good choice
- Favored initially; now think it a bad choice
- Opposed initially; still think it a bad choice

Made the final decision (N = 212)



Had significant input (N = 57)



Relatively uninvolved (N = 38)



Had no input (N = 86)



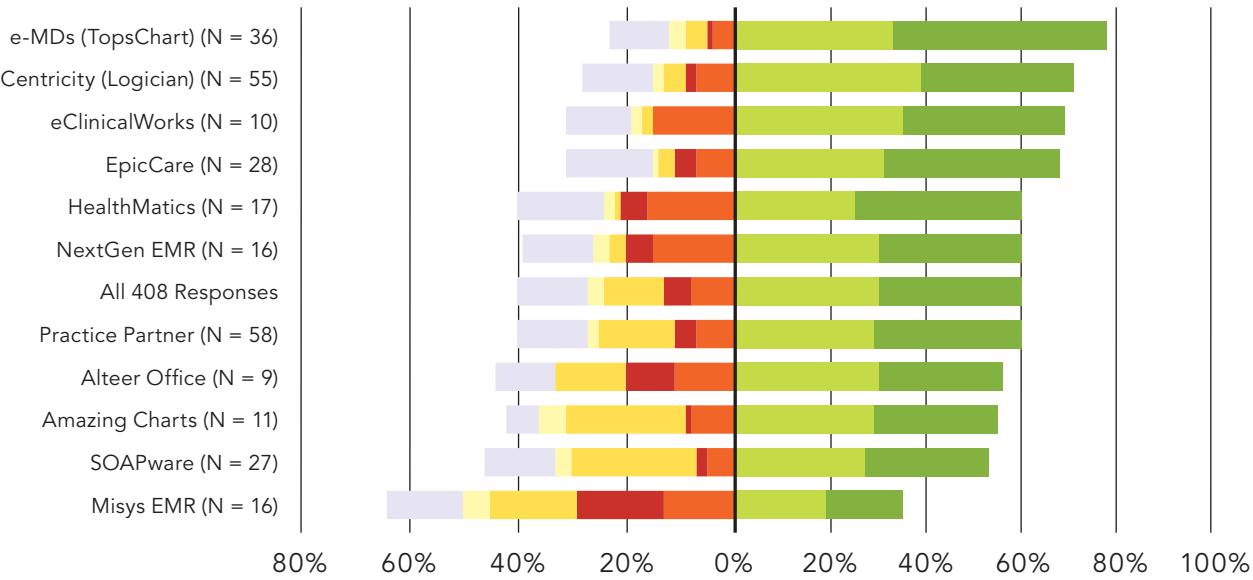
0% 20% 40% 60% 80% 100%

FUNCTIONALITY RANKINGS FOR 11 EHR SYSTEMS

Rankings are based on the combined percentages of *Satisfied* and *Very satisfied* responses to summary questions about functionality subcategories, except for "Maintain security related to patient information" and the three right-most columns, which are from subsections that did not include summary items. The highest rank for each item is highlighted.

EHR systems	Items in survey												
	Review chart information (overall)	Document patient care (overall)	Track, preventive care (overall)	Manage prescription writing (overall)	Enter orders (overall)	Manage referrals (overall)	Communications and remote access (overall)	Provide patient education (overall)	Maintain security related to patient information	Coding and charge capture (overall)	Analyze outcomes of care	Find patients with certain characteristics	Work without paper
Practice Partner (N = 58)	3	5	5	7	11	10	6	4	4	10	3	2	4
Centricity (Logician) (N = 55)	6	6	1	3	6	3	5	3	2	5	1	1	5
e-MDs (TopsChart) (N = 36)	1	1	2	1	3	9	3	1	3	1	6	3	2
EpicCare (N = 28)	4	4	4	5	4	8	1	5	7	8	2	6	7
SOAPware (N = 27)	7	3	7	9	8	7	7	9	8	9	10	10	6
HealthMatics (N = 17)	10	10	10	8	1	5	4	2	5	3	7	8	9
NextGen EMR (N = 16)	9	9	3	6	7	4	8	6	6	7	5	7	8
Misys EMR (N = 16)	11	11	8	10	10	6	11	10	11	11	9	9	11
Amazing Charts (N = 11)	2	7	9	4	5	11	9	8	9	6	8	5	10
eClinicalWorks (N = 10)	8	2	6	2	2	2	10	7	10	2	4	4	3
Alteer Office (N = 9)	5	8	11	11	9	1	2	11	1	4	11	11	1

OVERALL SATISFACTION WITH FUNCTIONALITY OF 11 EHR SYSTEMS

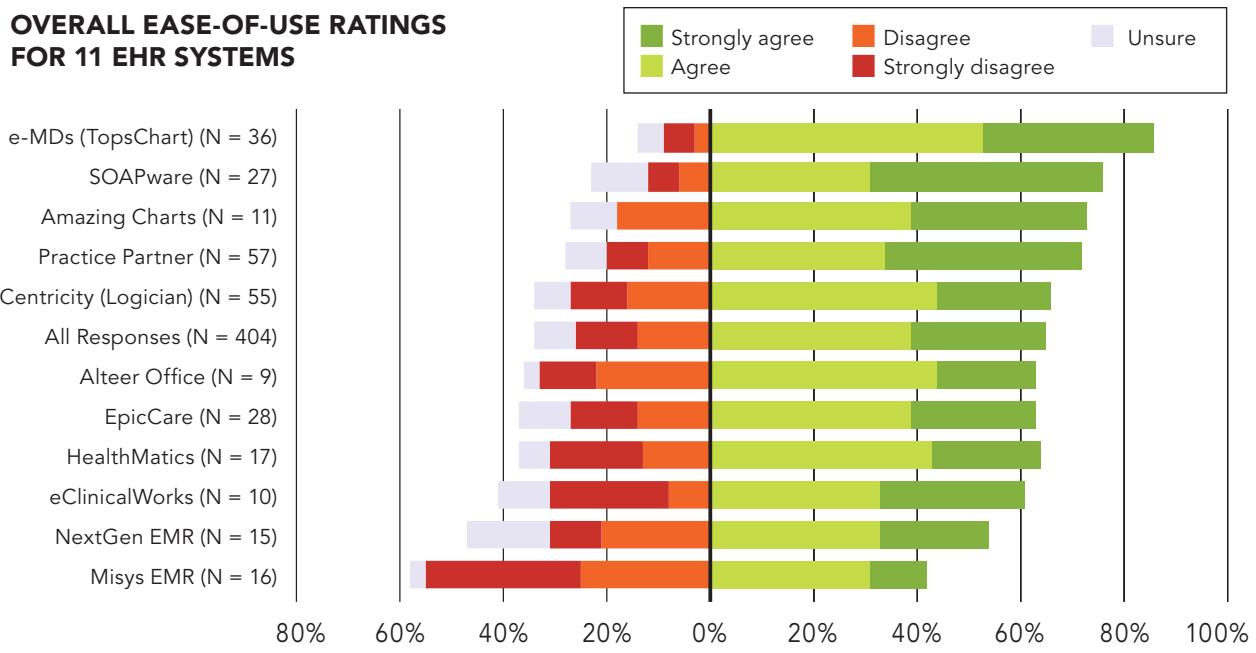


systems with adjacent rankings were quite small in some cases. The top four systems for small practices formed a tight group ranging from 92 percent down to 90 percent: e-MDs, SOAPware, Amazing Charts and eClinical-Works. In the other categories, one or two systems stand out – e-MDs and Centricity for mid-size practices, EpicCare and Centricity for large practices, and e-MDs for any physician.

Proceed with caution

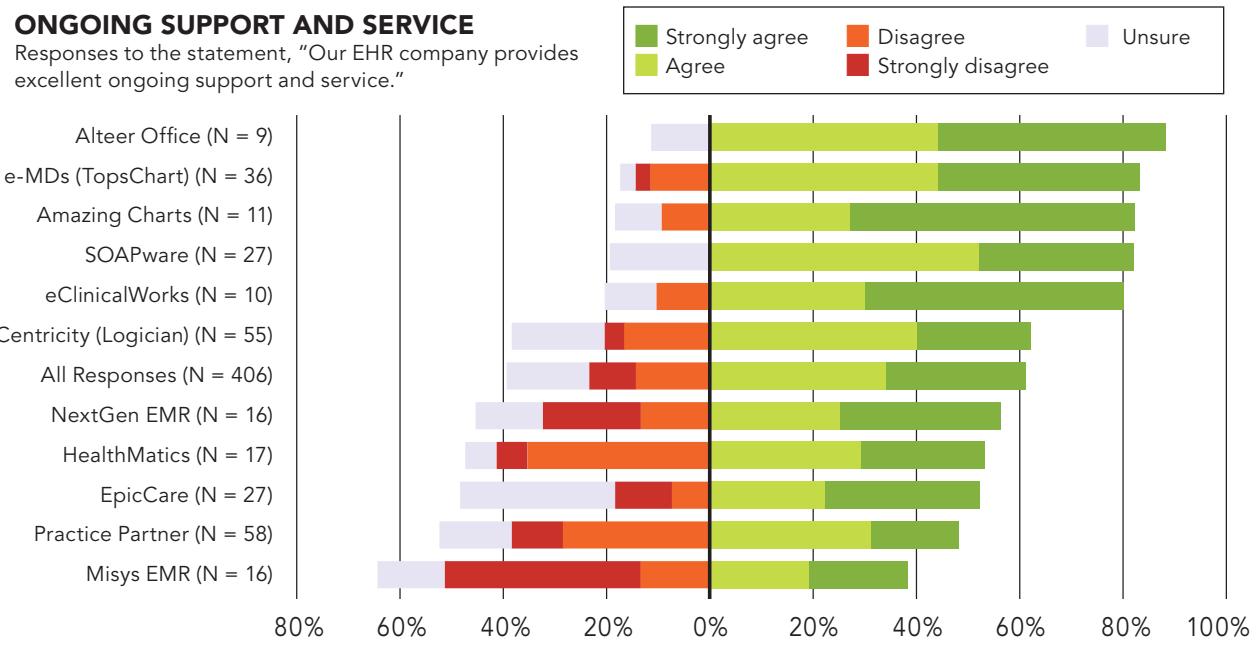
While we believe you will find the results of this survey useful in deciding whether to move to an EHR system and which system to select, we urge you to keep in mind several limitations. First, the small number of respondents for many EHR systems may mean that many potentially excellent systems aren't evaluated adequately. Moreover, even for systems included in the 11 we

OVERALL EASE-OF-USE RATINGS FOR 11 EHR SYSTEMS



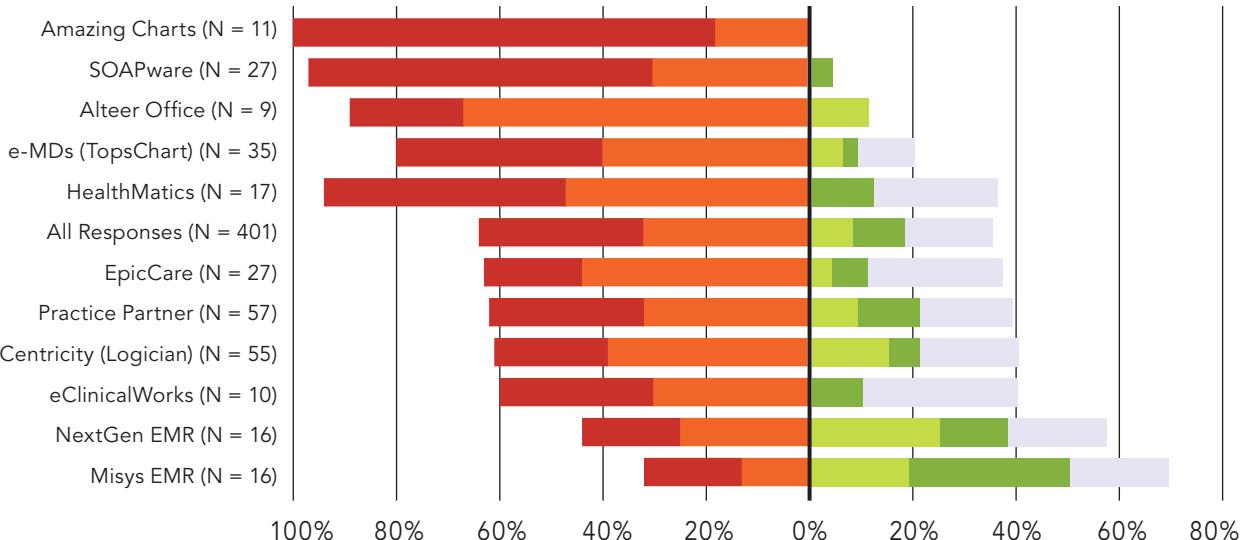
ONGOING SUPPORT AND SERVICE

Responses to the statement, "Our EHR company provides excellent ongoing support and service."



PERCEIVED VALUE

Responses to the statement, "This EHR costs more than it's worth."



RESPONDENT RECOMMENDATIONS

EHR name	Solo and small group practices (1-5 physicians)		Mid-size practices (6-30 physicians)		Large group practices (> 30 physicians)		Any physician	
	Rank	%	Rank	%	Rank	%	Rank	%
e-MDs (TopsChart) (N = 36)	1	92	1	89	4	58	1	83
Amazing Charts (N = 10)	2	90	10	27	11	9	2	73
SOAPware (N = 26)	1	92	8	50	9	27	3	68
Practice Partner (N = 58)	3	69	3	76	3	62	4	66
Centricity (Logician) (N = 55)	6	58	2	82	2	82	5	65
Alteer Office (N = 9)	4	67	6	56	7	44	7	56
NextGen EMR (N = 16)	7	50	8	50	5	56	6	56
eClinicalWorks (N = 10)	2	90	4	60	10	20	8	50
HealthMatics (N = 17)	5	65	5	59	6	53	9	47
EpicCare (N = 28)	9	25	7	54	1	86	10	46
Misys EMR (N = 16)	8	44	9	44	8	31	11	44

Results are ranked by "I would recommend this EHR to any physician" percentage

■ Recommended by ≥ 90 percent of respondents for the EHR ■ Recommended by > 80 percent of respondents for the EHR

analyzed, small cell sizes mean that even one additional response might have changed results considerably. To take an extreme example, consider that each of the nine respondents for Alteer Office accounts for roughly 11 percent of the results, and a 10th respondent could have moved the results by 10 percent. Finally, the fact that respondents were self-selected opens the possibility of selection bias. To repeat what we said at the outset, the

best way to interpret the data is to regard it as advice you might get from 408 colleagues who volunteered to report on their experience with their EHR systems. **FPM**

Send comments to fpmedit@aafp.org.

1. Adler KG, Edsall RL. Electronic Health Records: A User-Satisfaction Survey. *Fam Pract Manag*. February 2005: 47-51.