

HEALTH INFORMATION TECHNOLOGY

CHARTBOOK VOLUME 1 MAINE AMBULATORY PROVIDER SURVEY



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Health Information Technology Maine Ambulatory Provider Survey Chartbook Volume I

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Introduction

Electronic Health Records (EHRs) have not yet been widely adopted in ambulatory practices across the U.S. despite their significant potential for improving the quality and efficiency of health care.¹ To encourage wider use, Congress passed the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH) to authorize Medicaid and Medicare incentive payments to eligible providers and hospitals that use certified EHRs to achieve specified improvements in health care delivery. In the following year, the federal Department of Health and Human Services (DHHS) issued draft and final rules specifying annual sets of “meaningful use” goals for 2011 and 2012 that eligible professionals and hospitals must meet to qualify for incentive payments.

In Maine, responsibility for health information technology (HIT) planning activities rests with the Office of the State Coordinator (OSC) for Health Information Technology and the Office of MaineCare Services (the State’s Medicaid agency). To inform the planning process, these two offices contracted with the Muskie School at the University of Southern Maine (USM) to perform an environmental assessment of the current status of HIT adoption and use in Maine among three types of providers eligible for Medicare and Medicaid incentive payments under HITECH: ambulatory primary care and specialty practices, dental practices, and acute care hospitals. To complete this assessment the Muskie School conducted surveys of practices and providers in each of these sectors.

This Chartbook presents our findings from the 2010 Maine Ambulatory Practice Site Survey on the status of EHR adoption, implementation, and meaningful use. The Office of MaineCare Services has used this information to plan the administration of

Medicaid incentive payments. The Office of the State Coordinator for HIT and HealthInfoNet, in its role as the Regional Extension Center (REC),* are using the data to identify and offer technical assistance to providers to adopt, upgrade, or implement certified HIT systems, and to assist providers in achieving the annual goals for HIT meaningful use. The availability of these estimates provide a baseline for measuring Maine’s progress in meeting statewide goals for HIT adoption and use.²

Description of the Survey

Survey Development

Muskie School researchers reviewed the literature and consulted with stakeholders including personnel from the Office of MaineCare Services and the Office of the State Coordinator for HIT, to develop a set of domains to be included in the survey. Researchers also reviewed HIT surveys used in Maine and other states. For efficiency and relevance, a decision was made to incorporate much of Minnesota’s HIT ambulatory practice survey into the final survey instrument used in Maine. Survey questions covered the following domains:

- Medical Records
- Electronic Practice Management Systems
- Patient-Specific Information
- Electronic Health Records
- EHR Capabilities
- Decisions Support Tools
- Privacy and Security
- Quality Improvement Functions
- Meaningful Use
- Information Exchange
- Telemedicine

* RECs were established to support providers in adopting and becoming meaningful users of health information technology

Sample Development

Although the HITECH Act specifies that individual eligible professionals can apply for HIT ambulatory care incentives, the researchers followed the advice of stakeholders who recommended that the ambulatory provider survey be administered at the practice-site level to avoid placing undue burden on providers and to achieve higher survey response rates.

Because no single comprehensive inventory (complete with appropriate contact information) of all Maine ambulatory practices exists, researchers combined several sources to create an email invitation list. These sources included both the outgoing and newer MaineCare claims systems, the Maine Medical Association's provider list, and the MaineCare primary care case management provider list.

Invitations, including a link to the online web-based survey, were emailed to the primary contact person at each practice site. In cases where the researchers had a single email address for a provider organization that operated in more than one practice location, the organization was asked to forward the invitation to the most appropriate person at each practice site. If a practice site's correct email address was missing from the invitation list, Muskie School staff telephoned the organization to request a contact name and email address.

Survey Administration

The survey was administered by the Muskie School's Survey Research Center, using Survey Monkey®, an internet-based survey tool. An initial cover letter with a link to the survey website was

e-mailed in April 2010 and reminders were e-mailed a week later. Because the initial response rate was very low, the Survey Research Center and MaineCare staff made follow-up phone calls through June, 2010 to practice sites that had not yet completed the survey. Several provider organizations and OMS encouraged survey participation in newsletters and other communication with providers.

Response Rate

Of the 1,311 eligible practice sites that received a survey, 544 responded for a survey response rate of 41.5%. A total 418 practice sites remained for inclusion in the analysis after excluding incomplete surveys (n=4) and sites that said 90% or more of their services were performed in a hospital setting (n=122).

Analyses were performed to compare responders and non-responders. Practice sites that responded to the survey were larger on average than non-responding sites (means of 3,037 versus 581 patients). Responding practices also had larger MaineCare volumes than non-responding practices.

Data Collection and Analysis

Survey results were initially downloaded from Survey Monkey® to Microsoft Excel®. Surveys that did not answer whether the practice site had purchased and installed an EHR were excluded from the analysis. The data were then analyzed using Statistical Analysis Software® (SAS) and Microsoft Access®. Geographical data maps were prepared using ESRI ArcMap®.

Limitations

The 2010 Ambulatory Practice Health Information Technology (HIT) Survey was administered in the spring of 2010, and therefore provides a baseline of the status of health information technology at that point in time.

Survey questions were developed before the final “meaningful use” regulations were announced. Therefore the analysis presented in this Chartbook is limited in several ways. First, since the final meaningful use regulations are more relaxed and easier to achieve than the draft regulations in place at the time of the survey, the results presented here may underestimate the proportion of practices that intend to apply for incentive payments for meaningful use of certified EHR technology. Also, because the wording of the survey was based on draft regulations, we estimated the proportion of practices meeting some meaningful use criteria (see Section III). In addition, because of the survey’s focus on HIT, responding practices are probably more likely to have EHRs than non-respondents.

Results in Brief

EHR Adoption among Maine Ambulatory Practices

In 2010, more than half (53%) of the ambulatory practice sites surveyed were using or installing Electronic Health Record systems. Larger practice sites report higher rates of adoption than smaller practice sites. Seventy percent of all practices with 10 or more providers (compared with 25% of practices with one provider) have EHRs in use in some or all practice areas. The adoption rate also varies considerable by practice type.

Most practice sites (70%) that had not yet adopted EHR technology report that they are planning to implement an EHR within five years. Practices cited cost (to acquire and to maintain an EHR) and concerns about return on investment as the most common barriers to adoption.

Additional analyses found statistically significant differences between practices with a higher and lower volume of MaineCare patients and claims. Practice sites with larger MaineCare patient volume and claims were more likely to have adopted an EHR and were, not unexpectedly, more likely to indicate that they intend to apply for the Medicaid incentive payments. Eligible providers must have a Medicaid volume of 30% (20% for pediatricians) to qualify for incentive payments. In contrast, practice sites with smaller MaineCare patient volume and claims were significantly more likely to cite cost to acquire, cost to maintain, and concerns about return on investment as barriers to EHR adoption.

EHR Use among Maine Ambulatory Practices

EHRs are rapidly replacing paper charts.³ Practice sites with EHRs report widespread use among their providers and clinical staff with 89% of all practices reporting nearly all providers and clinical staff routinely use EHRs. Among practice sites that had an EHR, four of five said they have and use a computerized provider order entry system. Also, three-quarters of EHR-equipped ambulatory practice sites report that they routinely use clinical decision support systems for medication guidance and alerts.

Meaningful EHR Use among Maine Ambulatory Practices

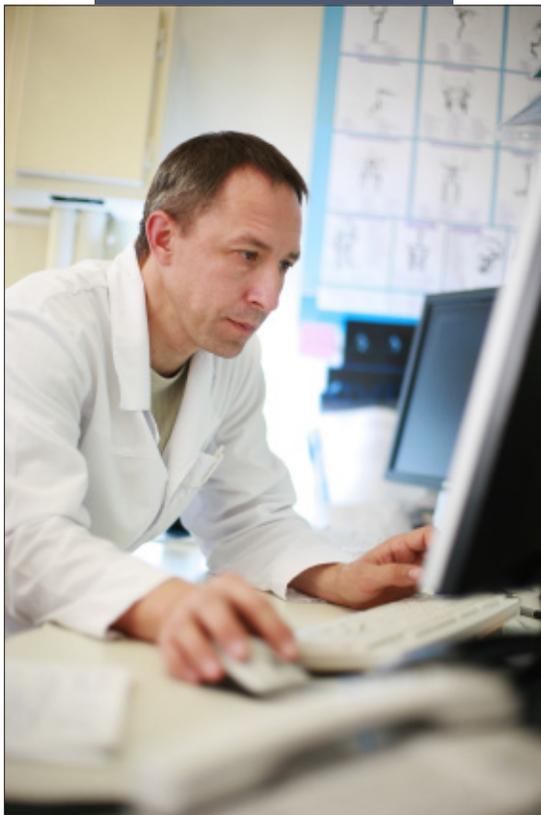
More than half of the practice sites report that they intend to apply for at least one of the HIT incentives for meaningfully using certified EHRs. This rate was much higher among practice sites that had already installed EHRs. It is important to note, however, that because the survey was administered before the meaningful use criteria were relaxed and modified, the survey results may understate intent to apply for the incentives.

At the time of the survey, practice sites appeared to have a long way to go to meet the criteria for Stage I meaningful use. Practice sites appear to be better prepared to meet meaningful use core criteria related to improving quality, safety, efficiency, and reducing health disparities than they are to meet requirements for the other four priorities.

1. DesRoches CM, Campbell EG, Rao SR, et al. Electronic Health Records in Ambulatory Care--A National Survey of Physicians. *N Engl J Med.* 2008; 359:50-60

2. *Maine Statewide Health Information Exchange Strategic and Operational Plans: A Strategy to Create an Infrastructure That Preserves and Improves the Health of Maine People.* (Revised). Augusta, ME: Maine Office of Health Information Technology; October 2010.
<http://www.maine.gov/hit/privacy-security/Revised-Plan-10-1.pdf>

3. Hsiao C-J, Hing E, Socey TC, Cai B. *Electronic Medical Record/Electronic Health Record Systems of Office-based Physicians: United States, 2009, and Preliminary 2010 State Estimates.* [Web Page]. 2010, December. Available at: http://www.cdc.gov/nchs/data/hestat/emr_ehr_09/emr_ehr_09.pdf. Accessed July 18, 2011.



Section I

EHR Adoption

EHR Adoption Among Maine Ambulatory Practices

Nearly half of ambulatory practices have adopted and begun using EHRs.

- 43% of responding practices indicate that they have adopted EHR technology and are using EHRs in all areas of their practices.
- 6% indicate that have adopted EHR technology and are using them in some areas of their practices.
- 4% have begun installing an EHR.
- Nearly half of the practices (47%) report that they do not have an EHR.

Larger practices have higher EHR adoption rates than smaller practices.

- Practices with more than 10 providers have a rate of adoption of 70% whereas practices with one provider have an adoption rate of 25%.
- The average adoption rate among all practices is 49%.

The adoption rate by practice type shows considerable variation.

- Solo practices have the lowest adoption rates (17% for solo specialty care practices and 28% among solo primary care practices).
- The adoption rate among primary care group practices and community health centers [(Federally Qualified Health Center (FQHC), FQHC Look Alike, Rural Health Center (RHC)] is more than twice that of the solo practices.

- Primary care group practices and community health centers have a 70% adoption rate and multi-specialty group practices have an adoption rate of 67%. (Single specialty group practices have an adoption rate of 40%).

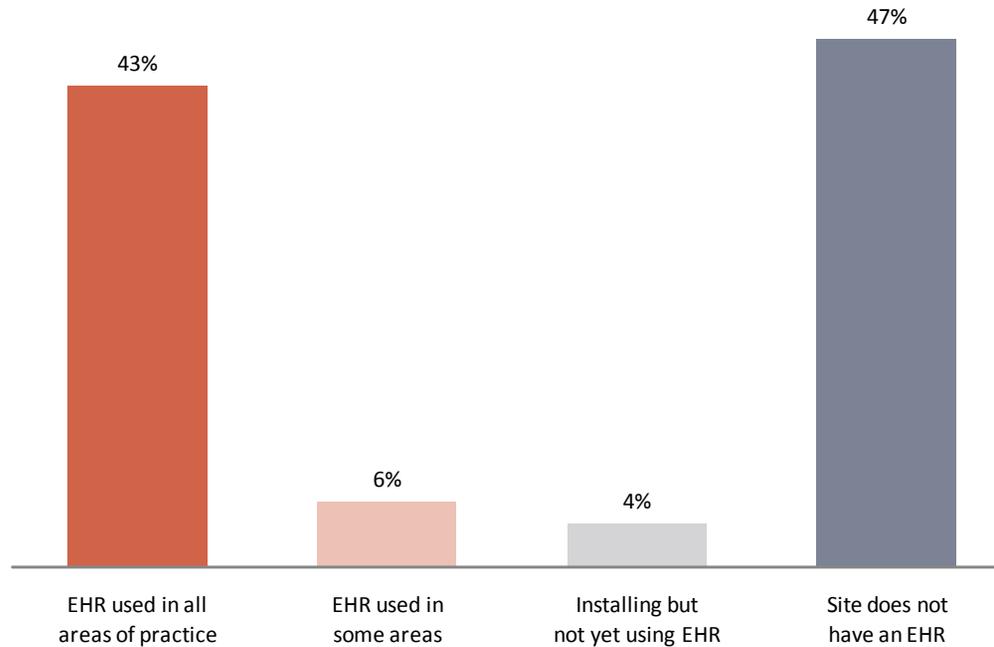
Most responding practices without an EHR plan to implement in the near future.

- 56% plan to implement a system within the next 3 years (17% within 12 months, 39% within 1 to 3 years). Another 13% would like to implement a system in the next 4-5 years.
- However, 30% of the practices responding to the survey do not have plans to implement an EHR.

The most common barriers to adoption include cost (to acquire and to maintain an EHR) and concerns about return on investment.

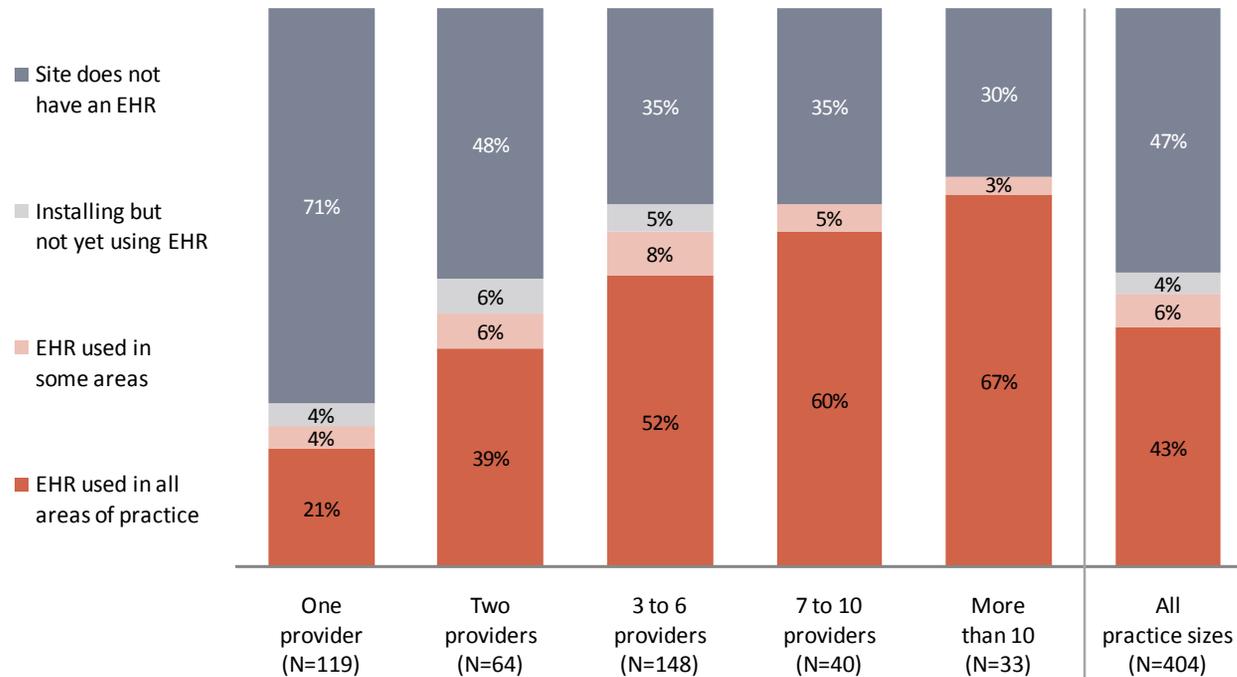
- Of practices without an EHR, 66% cite cost to acquire, 45% cite cost to maintain, and 33% cite concerns about return on investment as significant barriers to EHR adoption.
- Practices providing primary care were more likely to cite cost as barriers to EHR adoption than specialty practices.

More than half of Maine ambulatory practices have adopted EHRs.



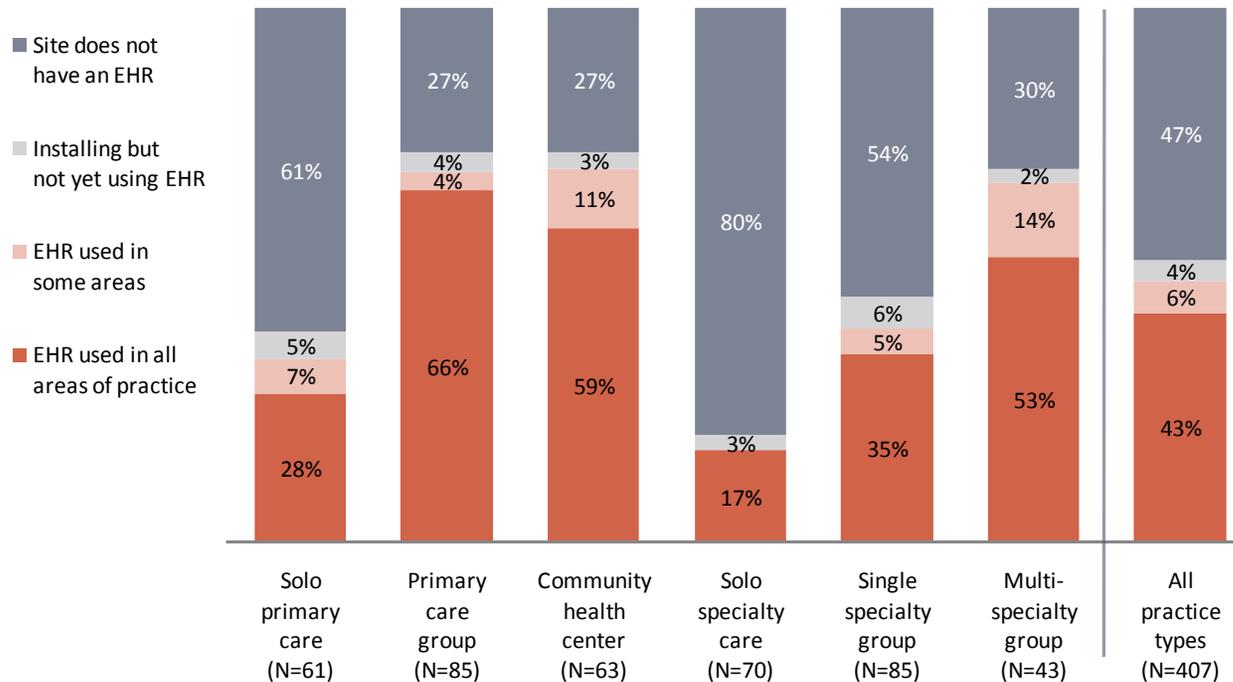
- 53% of practices responding to the survey are installing, using in some areas, or using EHR systems in all areas of their practice.
- Nearly half (47%) of the practices responding to the survey do not have an EHR system.

Larger practices are more likely to have adopted EHRs.



- Larger practices are more likely to have adopted EHRs and use them in all areas of their practices.
- 70% of all practices with 10 or more providers (compared with 25% of practices with one provider) have EHRs in use in some or all practice areas.

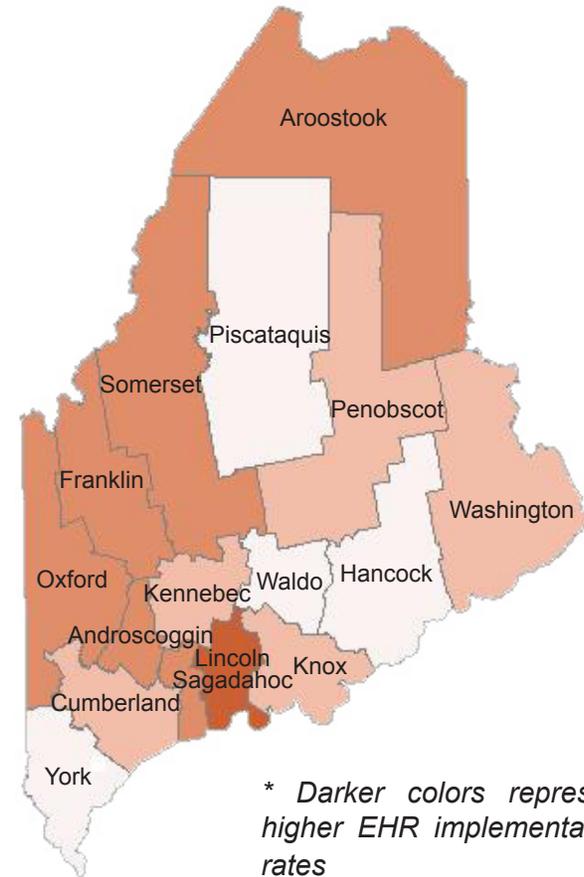
Community health centers and primary care group practices are more likely to have adopted EHRs.



- Adoption rates vary by practice type.
- Rates are highest among primary care group practices and lower among solo specialty care practices and solo primary care practices.

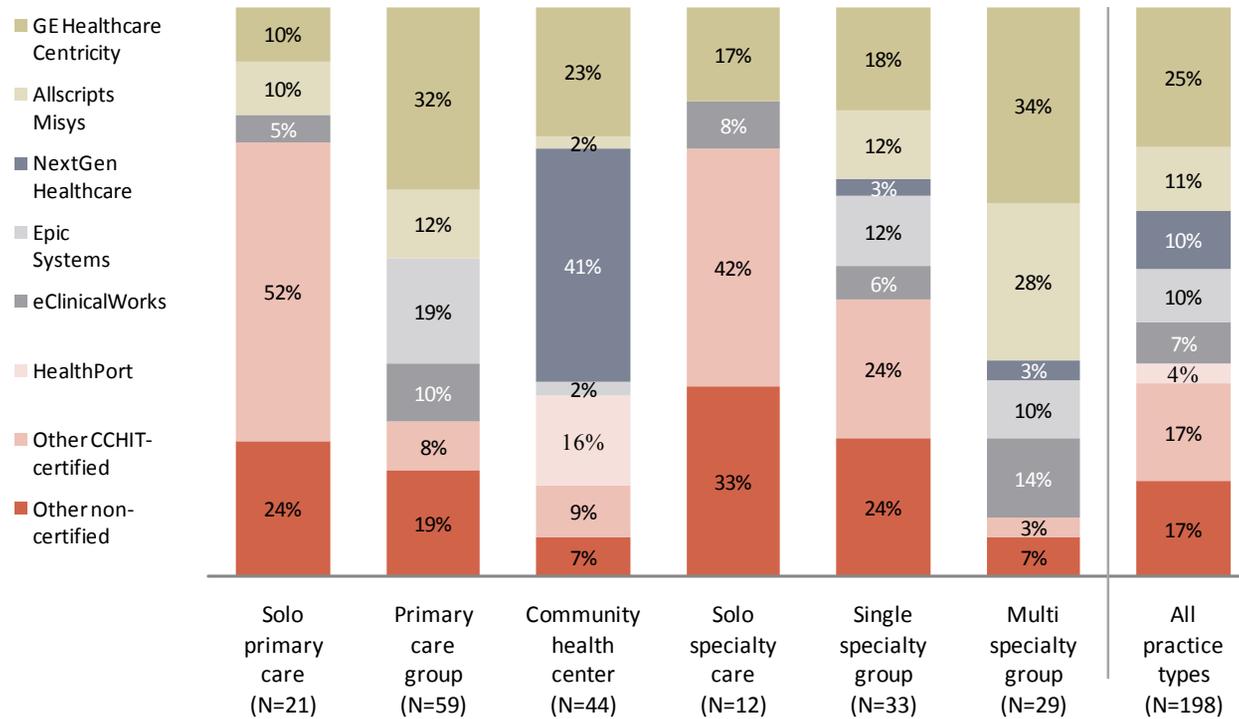
EHR Implementation Rates by County

County	Number of surveyed provider sites:		Percent of sites that used an EHR*
	using an EHR in some or all areas of the practice	responding to the survey	
Androscoggin	16	24	67%
Aroostook	16	24	67%
Cumberland	49	101	49%
Franklin	7	13	54%
Hancock	2	10	20%
Kennebec	22	44	50%
Knox	5	11	45%
Lincoln	9	11	82%
Oxford	6	9	67%
Penobscot	35	71	49%
Piscataquis	1	8	13%
Sagadahoc	3	5	60%
Somerset	9	15	60%
Waldo	2	9	22%
Washington	6	15	40%
York	10	36	28%
Statewide	198	406	49%



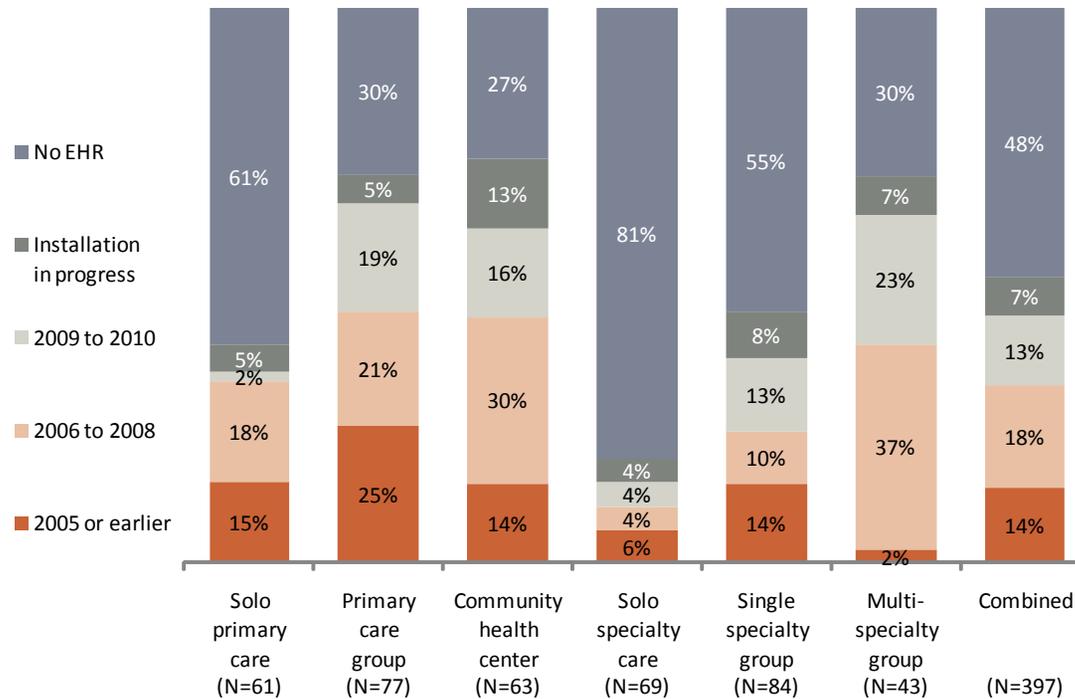
- Lincoln (82% of practice sites), Androscoggin (67%), Aroostook (67%) and Oxford (67%) counties report the highest EHR implementation rates.
- Piscataquis County reports the lowest EHR implementation rate (13%).

Ambulatory practices use a variety of EHR systems.



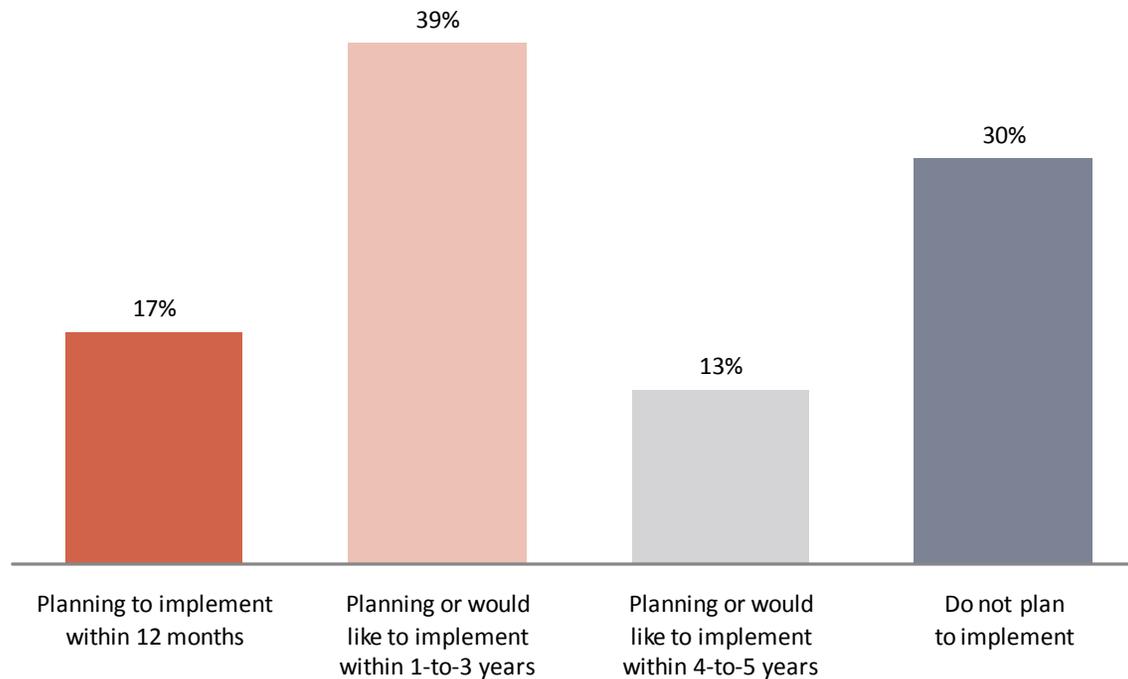
- Practices use a variety of certified and non-certified systems. To qualify for the federal incentives, a provider’s practice must use a certified EHR.
- While GE Healthcare Centricity has been the overall leading brand, EHR systems vary widely by practice type.

Primary care practices tend to be earlier adopters of EHR systems.



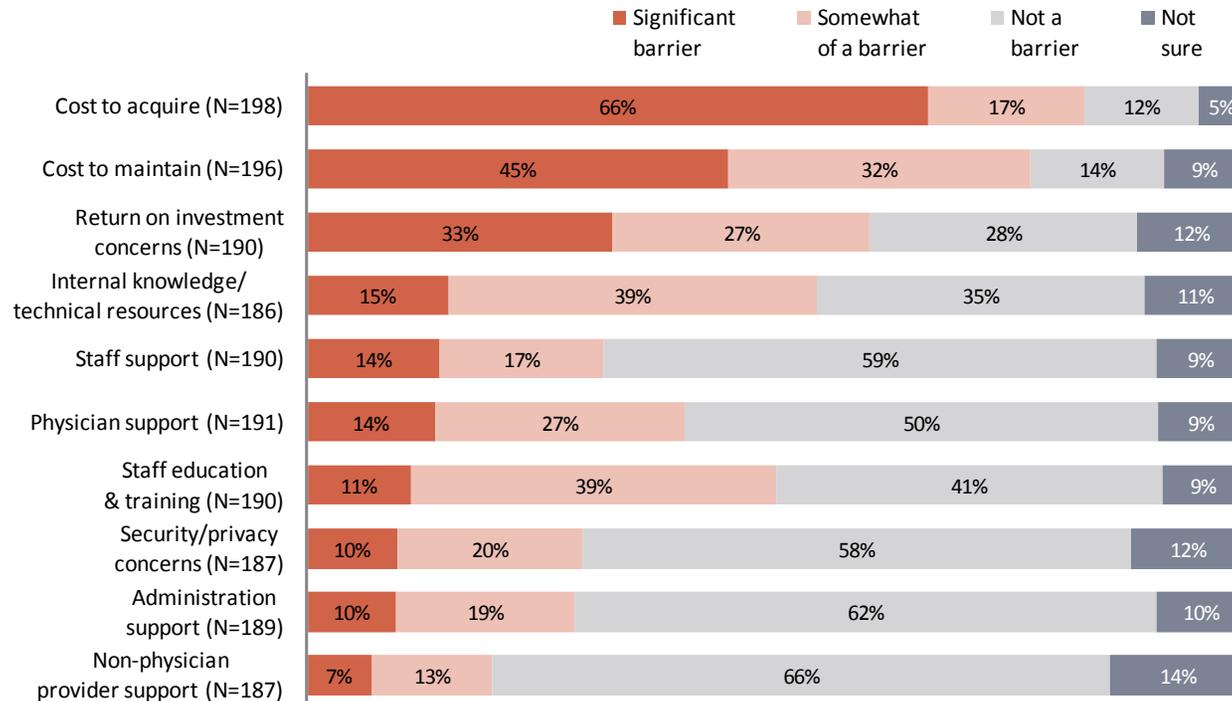
- 14% of all non-hospital-based ambulatory care practice sites had installed an EHR before 2006, 32% had done so before 2009, and 52% had either purchased or begun using a system by mid-2010.
- One-quarter of primary care group practice sites installed an EHR prior to 2006, marking them as early adopters, while only 6% of solo specialty care sites and just 2% of multi-specialty group practice sites had installed an EHR before 2006.
- By the end of 2008, the multi-specialty group practice adoption rate (39%) had matched or exceeded most other practice types, while single specialty groups (24%) and solo specialists (10%) remained far behind.

Seventy percent of ambulatory care practice sites without EHRs have plans to implement within five years.



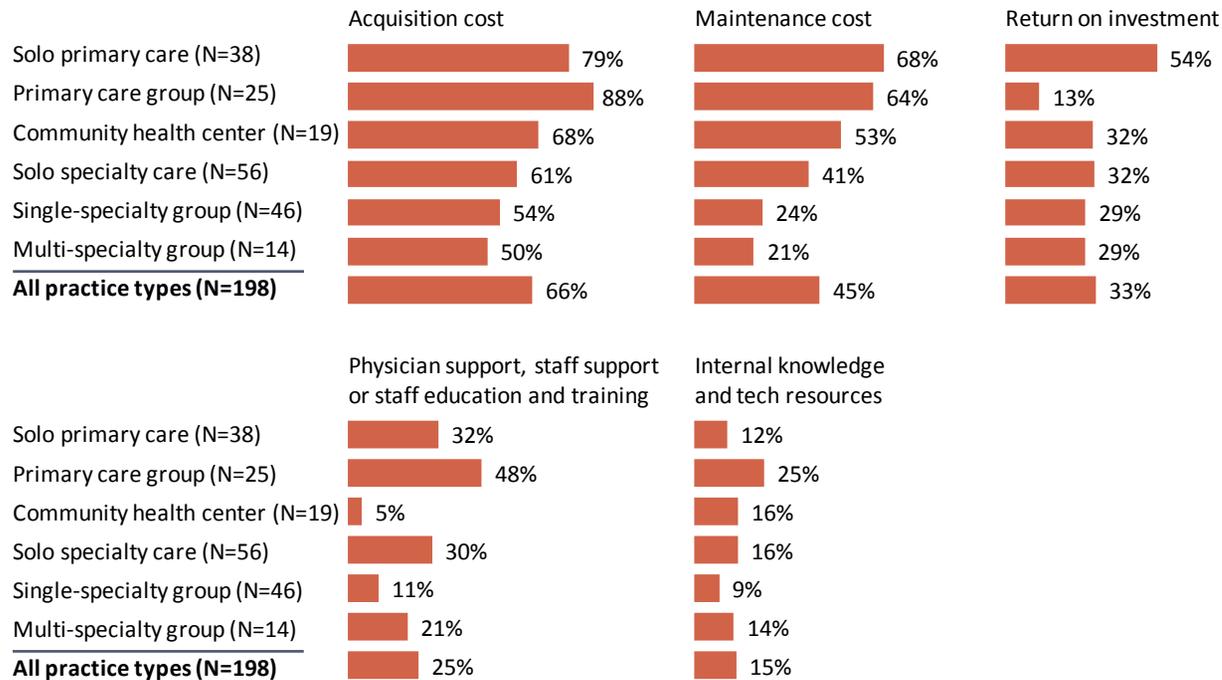
- Most practices without an EHR (56%) plan to adopt within 3 years.
- 30% of practice sites report no intention to implement an EHR.

Cost concerns topped the list of “significant” barriers to EHR adoption.

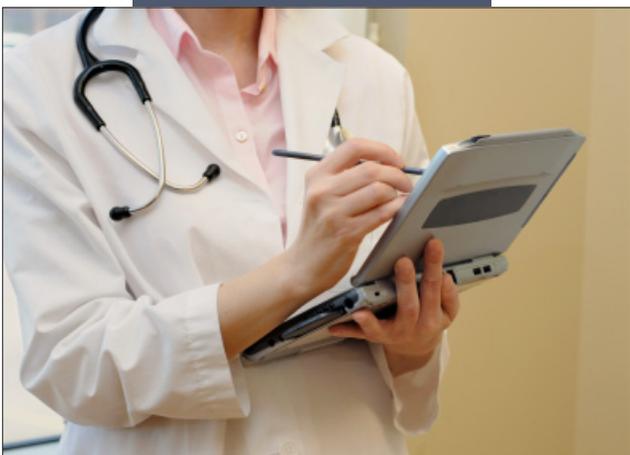


- Ambulatory care practices (that still do not have EHRs) cite cost and investment concerns as “significant” barriers to implementation:
 - cost to acquire (cited by 66%);
 - maintenance costs (45%); and
 - concerns about return on investment (33%).
- Ambulatory practices do not commonly cite data security and privacy concerns as barriers to adoption.

“Significant” barriers to EHR adoption differ somewhat by ambulatory care practice type.



- Primary care practices commonly cite cost to acquire, cost to maintain and concerns about return on investment as “significant” barriers to EHR adoption. Cost to acquire and to maintain are cited more frequently.
- Half or more of the specialty practices cite EHR acquisition cost as a “significant” barrier to EHR adoption.
- Primary care practices are more likely than specialty practices to cite EHR maintenance and acquisition costs as “significant” barriers to EHR adoption



Section II

EHR Use

EHR Use among Maine Ambulatory Practices

Among practice sites reporting that they had an EHR, actual EHR use by providers and clinical staff is high.

- 89% of practices with an EHR report that their EHR is used routinely by nearly all (more than 90%) of their providers and clinical staff.

EHRs are rapidly replacing paper charts.

- A full two-thirds of practice sites that have an EHR have already done away with paper charts, while only 7% rely primarily on paper.
- Group practices are more likely than solo practices to have done away with paper charts.
- Less than half of solo primary care sites (48%) and just over half of solo specialty practice sites (54%) have entirely replaced paper charts with an EHR.
- Among large group practice sites, those with more than ten providers, nearly nine-out-of-ten (87%) have ceased using paper charts.

Among practices sites that have an EHR, four-out-of-five (82%) said they have and use a Computerized Physician Order Entry system (CPOE).

CPOE is a meaningful use measure and allows physicians and other licensed professionals to enter medical orders for patient care directly into a computer. CPOE can either be a stand-alone software module, or an integrated part of an EHR system. CPOE can reduce the frequency of medical errors by eliminating mistakes due to handwriting misinterpretation. Quality of care can

often be improved, and medical errors and costs further reduced, by connecting the CPOE with a computerized Clinical Decision Support (CDS) system. CDS systems offer physicians a variety of tools from aiding in the interpretation of clinical data and diagnosis, to retrieving patient-specific clinical guidelines and issuing patient care reminders.

- The CPOE usage rate is high among primary care group practices and community health centers (both 93%).
- The CPOE rate is lower among primary care solo practices (67%) and solo specialists (50%).

Clinical Decision Support (CDS) systems are used routinely for medication guidance and alerts by three-quarters of EHR-equipped ambulatory practices.

Other commonly used CDS functions include:

- chronic care plan development (routinely used by 55% of the practices),
- patient-specific/condition-specific reminders (52%), and
- reminders for preventive care (50%).

Survey data show some variation by practice type, with solo specialty care practices reporting lower CDS use rates and primary care practices reporting higher rates for some CDS features.

- Overall, 75% of the responding practices with EHRs said they routinely use electronic medication guides and alerts, 42% of the solo specialty care practices routinely use that feature.
- Similarly, while 55% of all practices with EHRs said they routinely use chronic care plans and flow sheets, fewer solo specialty care practices routinely use that feature.

- While 52% of all practice types indicate that they routinely use patient-specific/condition-specific reminders, just 8% of solo specialty care practices report using this CDS feature.
- Primary care practices are the most common users of their EHR's clinical guideline features. Half of all responding practices with EHRs routinely use their EHR's clinical guideline features, while more than half of the three primary care practice types use those features and fewer than half of the specialty care practice types use the clinical guideline features.
- Primary care practices (and multi-specialty group practices) most commonly use EHR reminders for preventive services, with half or more of those practice types reporting routine use of the feature.

A minority of practices use certain CDS functions routinely. Of all practices with EHRs responding to the survey,

- 25% routinely use and another 21% occasionally use their EHR to generate automated reminders for missed labs and tests. Twenty-two percent report that this capacity was not in use and 32% indicate that the practice EHR do not have this capability.
- For each practice type, only 33% indicate they routinely use their EHR to generate automated reminders for missing labs and tests and a large majority within each practice type indicate that this capacity is in use only occasionally, not in use, or not available to them.
- Fifteen percent of the practices report routine use of CDS capacity and another 16% report occasional use. About half of the practices indicate that their EHR does not have the capacity for diagnostic imaging decision support tools and about a quarter indicate that this capacity was not in use at their practice.

Other EHR functions

The survey included questions about the use of other EHR functions including quick electronic access to lab and diagnostic test results, tracking patient diagnoses, and keeping a history of each patient's blood pressure, height, weight, body mass index and tobacco use.

Overall, a majority (62%) of ambulatory practices with an EHR regularly access lab and diagnostic test results by computer and another 19% do so occasionally.

- However, 13% access lab and test results primarily by paper, fax, and phone calls.
- Multi-specialty group practices and primary care group practices are about twice as likely as solo practices to use this feature.

Overall 80% of all practice types indicate that they have at least one coded entry for active diagnoses for nearly all (80% or more) of their patients. The survey found greater use of this feature by primary care solo and group practices.

Practices with EHRs are using them to track and record vital signs, a feature most often used by primary care practices and community health centers.

- 78% of practices with an EHR use it to record and track blood pressure for all or nearly all of their patients.

Among EHR-equipped practice sites, 75% use their EHR to record patient weight. 68% record patient height, and 60% to record body mass index.

Involving patients in their own healthcare

EHRs can help keep patients more involved and better informed about their care by providing them greater access to their personal health information

- Only 9% of practices report that they provide patients with direct electronic access to their health information.
- 28% of the practice sites report that they routinely provide patients with a copy of their health information within 48 hours of a request.

Quality improvement functions

Many ambulatory practices use their EHR for a variety of quality improvement functions. For example,

- 52% use their EHR data to create benchmarks and clinical priorities for internal quality improvement efforts. This feature is most often used by community health centers (80%) and multi-specialty group practices (66%).
- 61% report that they use their EHR data to set goals for how often they use and followed clinical guidelines. This function, too, is in use most often by community health centers (80%) and multi-specialty group practice sites (72%).
- 75% of practices with EHRs share data from their EHR with other providers for internal quality improvement efforts, a common practice among all practice types.
- 48% of practice sites that have implemented an EHR use it to routinely identify and remind at least half of their patients over age 50 when they are due for preventive care. Primary care group practices and multi-specialty group practices lead the other practice types in their use of this feature.

- 54% said that they routinely send follow-up care reminders to at least half of their patients. Solo specialists (75%), multi-specialty groups (72%), and single specialty groups (59%) are most likely to say that they send follow-up care reminders to over half of their patients.
- 70% of practices with EHRs use their EHR to collect health-care quality data for submission to outside organizations like the National Committee for Quality Assurance or the Maine Health Management Coalition. Group practices and community health centers are far more likely to say they submit quality data than are solo practitioners.
- 83% of the EHR-equipped practices have the capacity to generate at least one list of patients with a specific condition for a disease registry. Primary care practices and community health centers are more likely report that they have this capacity than specialists.
- Nearly all practices use their EHRs to record some types of patient demographic data, gender, age and type of insurance. Practices are much less likely to use their EHR to record race (51%), ethnicity (42%), primary language (41%), or country of origin (18%).

Medications and E-prescribing

EHRs can help reduce medication errors in a variety of ways. Entering prescription orders into an EHR or a stand-alone computerized medication ordering system avoids errors that can result from poor handwriting. These systems can also prevent errors by alerting physicians to potential harm from interactions with a patient's other drugs, from a patient's allergies to particular types of medication, or when a selected medication is inappropriate given the patient's age or medical condition.

EHRs can also reduce prescription costs to patients and insurers by alerting the physician when a drug is excluded from an insurer's formulary, by providing information about lower-cost generic alternatives, or by displaying cost comparisons for different medications.

- 83% of the practice sites that had an EHR said that their providers order medications by entering prescription orders into their EHR. For community health centers, primary care group practice sites and multi-specialty group practice sites, the proportion is 91%.
- 51% of practice sites with EHRs said they electronically generate and transmit at least 75% of their permissible prescriptions¹ electronically; another 10% also did so, but for fewer than 75% of their permissible prescriptions.
- 23% of the practice sites without an EHR reported they use some type of electronic system (also called e-prescribing) to write and transmit prescriptions; this rate was 58% among the responding primary care group practices that do not have an EHR.

Nearly three-quarters of the practices with an EHR report prescription medication safety alert capacities, but less than half report having the capacity to alert physicians of cost and coverage information.

- 72% report that their system could alert a physician to potential conflicts with the patient's other medications.
- 70% said their system could alert a physician to the patient's possible allergic reaction to the medication.
- 41% report that the system could alert the physician to an appropriate generic alternative.

- 36% report that the system could alert the physician if the chosen medication was not included on the insurer's list of covered medications.
- 11% said their system could provide the physician with a cost comparison to other appropriate medications.

About half (53%) of the practices with EHRs perform medication reconciliation at least occasionally. About a third (38%) do so for at least 80% of all patient transfers and referrals.

Medication reconciliation is the systematic review of the patient's entire medication list whenever a patient is transferred to the care of a different doctor or different facility. EHRs can make it much easier to perform medication reconciliation by allowing the electronic transfer, look-up, or updating of the patient's full medication list. When a patient is referred to a specialist, enters a hospital, or transfers to some other type of health care facility, the different doctors involved in the patient's care often lack a complete list of medications prescribed by other doctors. This can lead to harmful interactions between different drugs, prescriptions filled for more than one medication that serves the same purpose, or cases where a hospitalized patient stops receiving an important medication that they used to take at home. A review of numerous medical studies revealed that this lack of communication at the time of hospital admission is responsible for more than a quarter of all hospital prescribing errors.²

1. "Permissible prescriptions" are prescriptions for any medications that do not appear on the U.S. Department of Justice list of controlled substances.

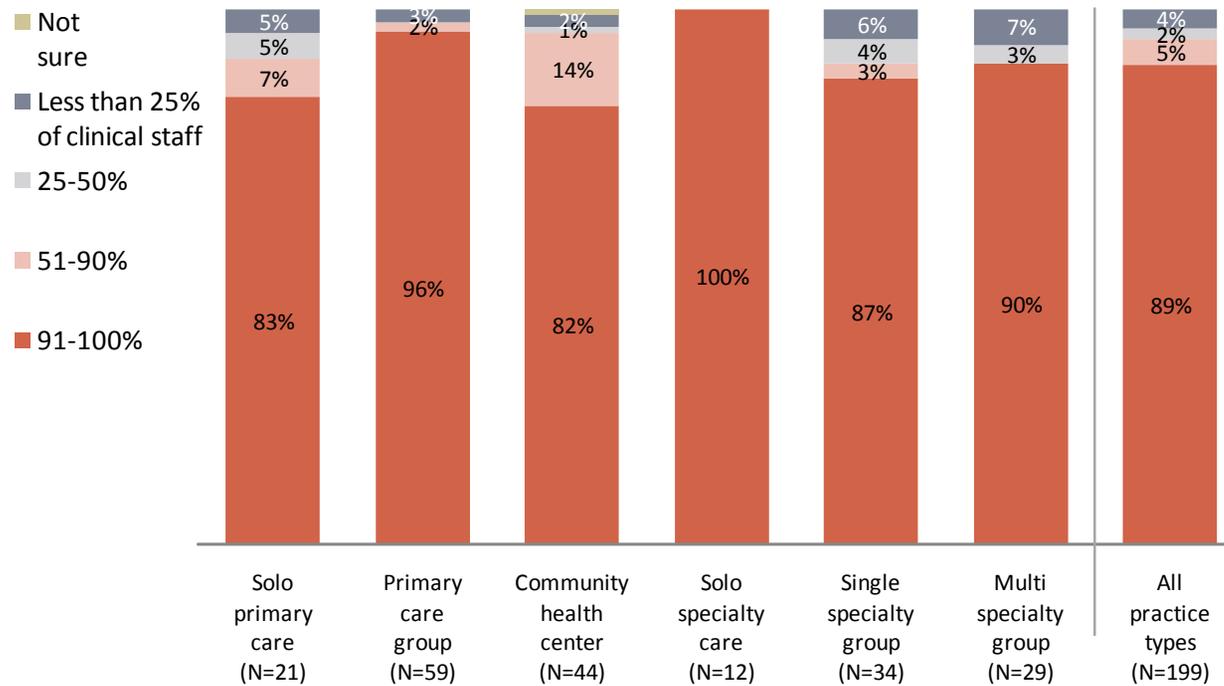
Information Exchange

Baseline rates for electronic health information exchange are quite low. Practices cite privacy, legal, and security concerns as a significant barrier to secure information exchange with other practices or outside organizations.

- 28% of practice sites with an EHR report that they electronically receive patient data from an affiliated hospital.
- 22% report that they electronically share EHR data with an affiliated hospital.
- 21% transmit patient data to a patient's other physicians.
- 8% said they electronically share patient data with state immunization registries.
- 4% electronically transmit data to or receive data from the Maine Center for Disease Control (CDC).

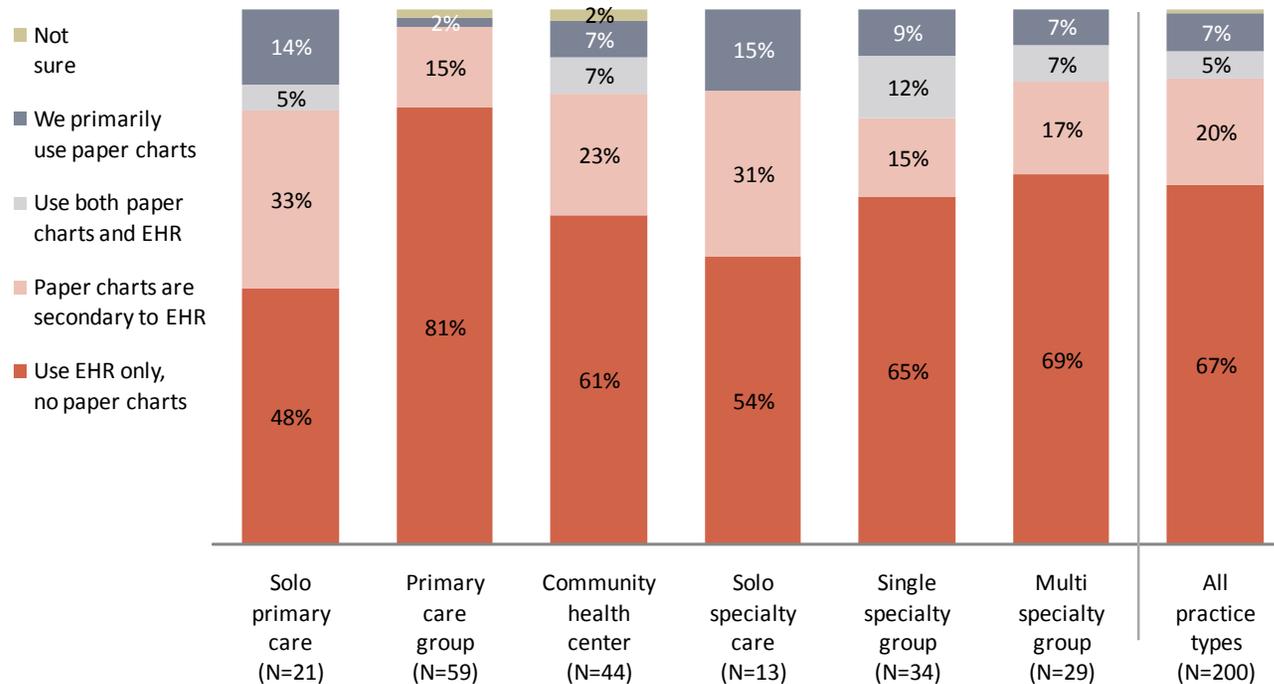
2. Tam VC, Knowles SR, Cornish PL, et al. Frequency, Type and Clinical Importance of Medication History Errors at Admission to Hospital: a Systematic Review. *CMAJ*. 2005 Aug 30; 173:510-5.

Practices with EHRs report widespread, routine use by providers and clinical staff.



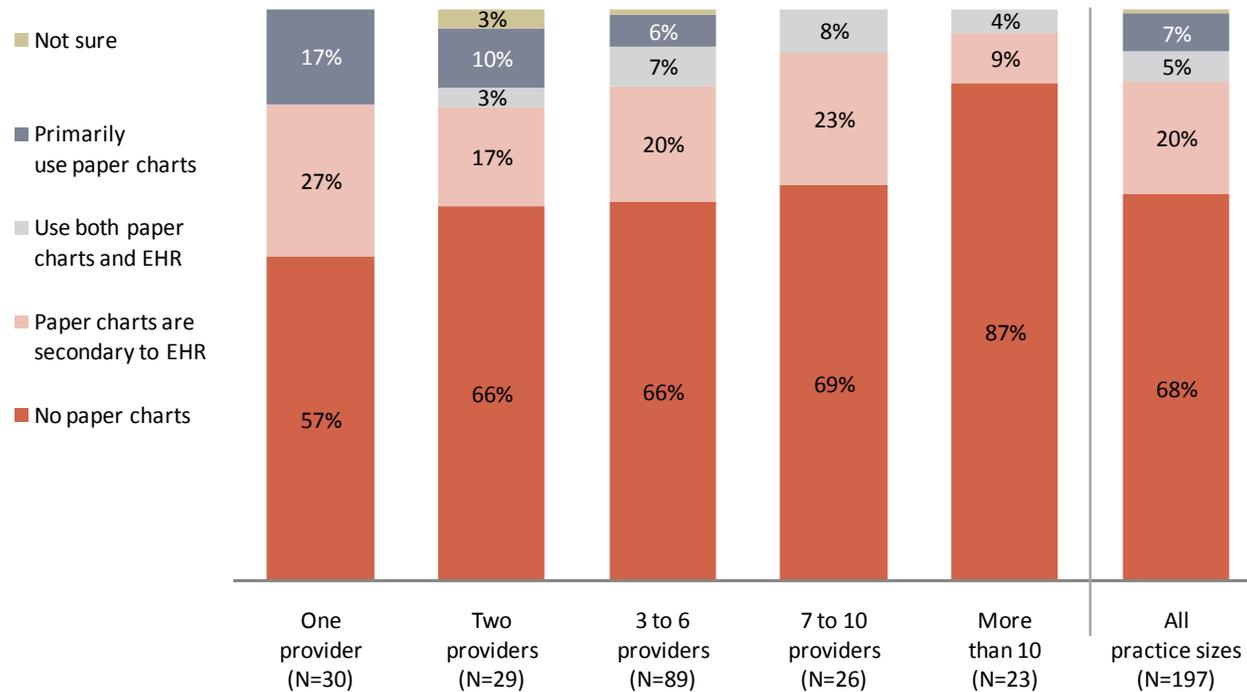
- Practices with EHRs report that all or nearly all providers and clinical staff routinely use them.
- All practice types report high levels of EHR use by providers and clinicians.

Nearly three-quarters of all practices with EHRs use electronic patient charts exclusively compared to paper charts.



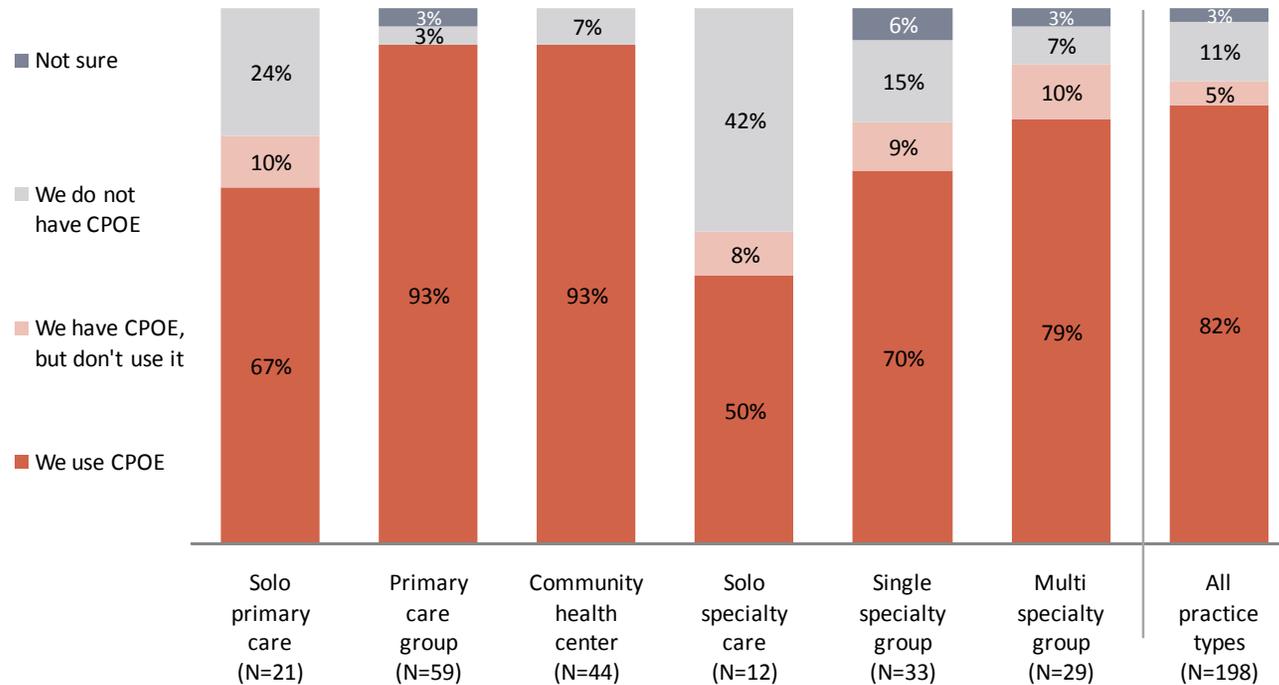
- Of all practices, 67% rely solely on the EHR; 20% rely primarily on the EHR; 5% use both the EHR and paper; and 7% primarily use paper for patient charting.
- Primary care group practices are more likely than other practice types to rely solely on the EHR for patient charting.

Larger practices are more likely to use EHRs for patient charts.



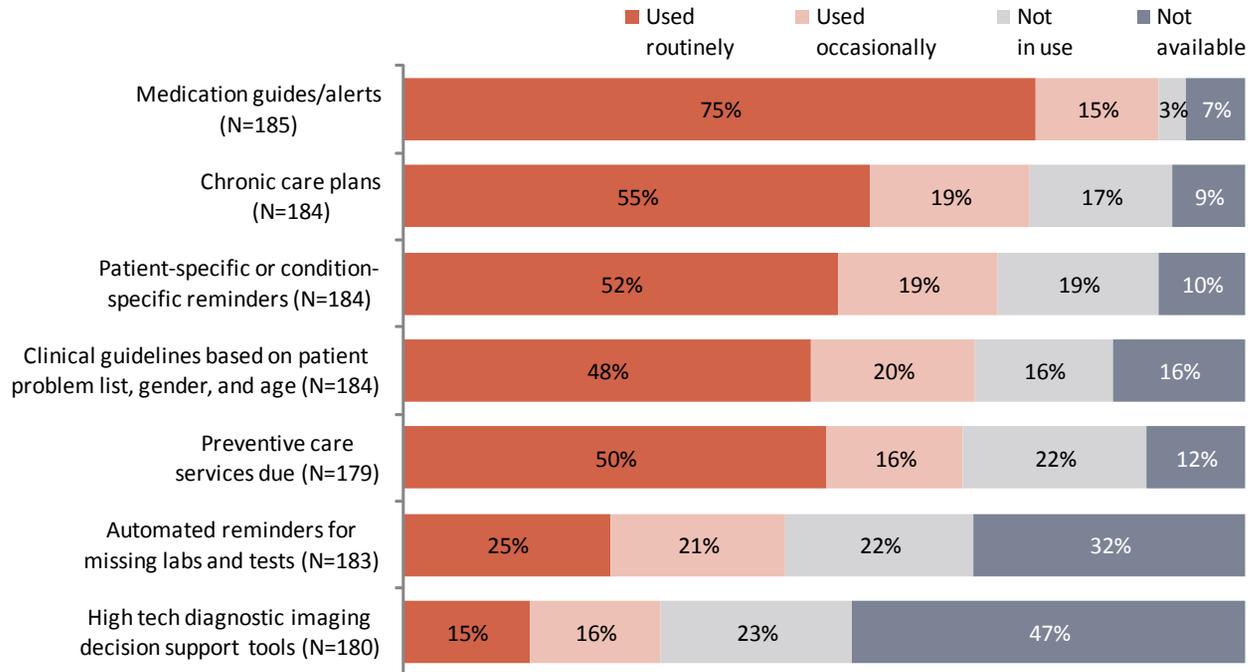
- Overall, of the practices with an EHR, 68% use only the EHR for patient charts, 20% use primarily the EHR; 5% use both paper charts and the EHR; and 7% use only paper charts.
- 87% of the largest practices only use the EHR; 57% of the smallest practices only use the EHR for patient charts.

Eighty percent of practices with EHRs use Computerized Provider Order Entry (CPOE).



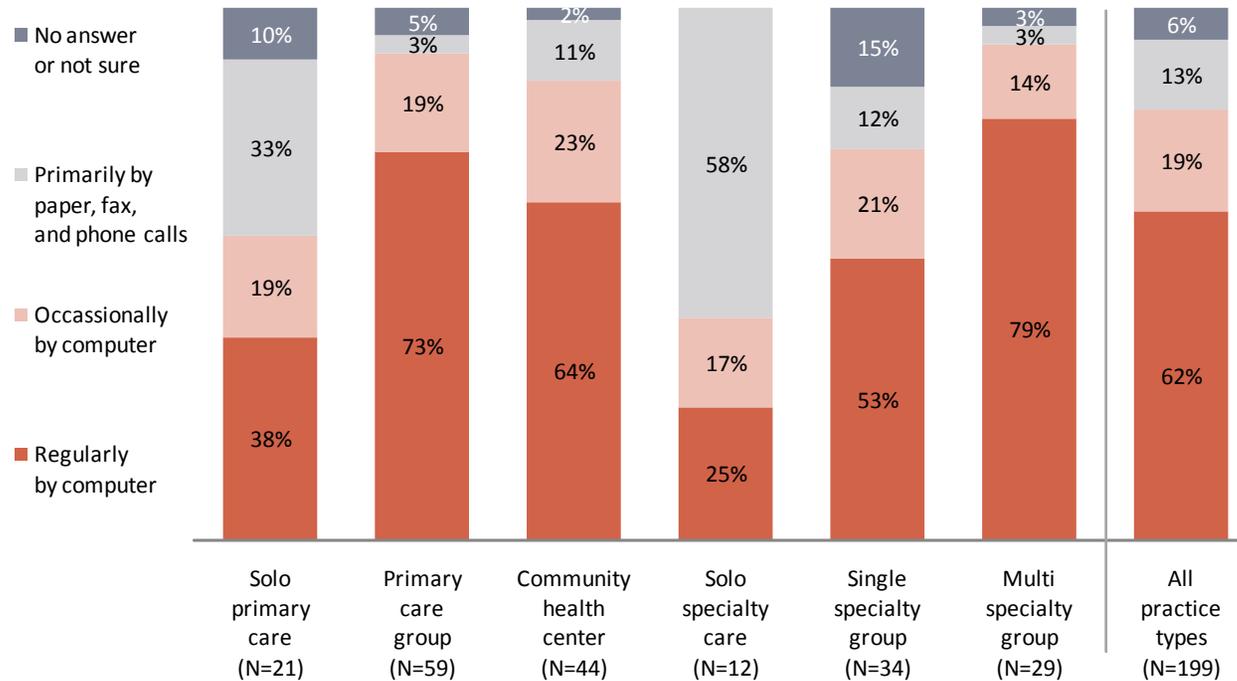
- Primary care practices are more likely to use CPOE than specialty practices.
- Virtually all responding practices that did not have an EHR also do not have or use CPOE.

Practices with EHRs use a variety of the system’s clinical decision support tools.



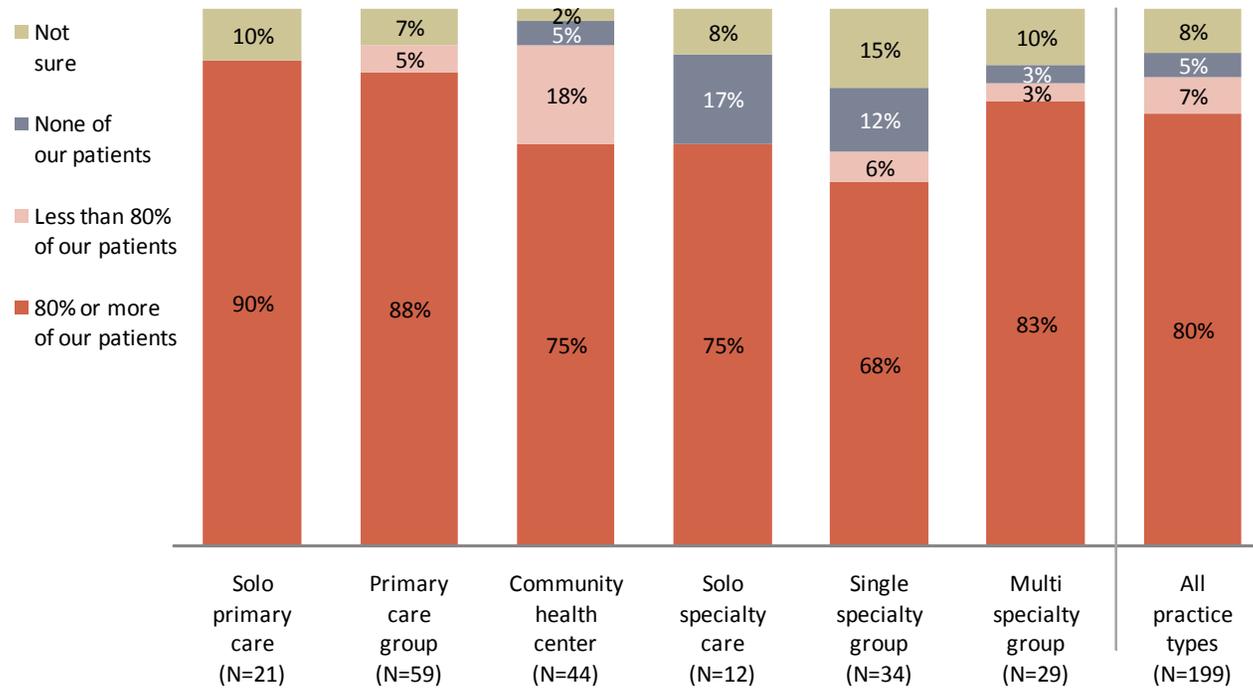
- About three-quarters of the practices with EHRs report either routine or occasional use of the following decision support tools: medication guides/alerts (90%), chronic care plans (74%), patient- or condition-specific reminders (71%), clinical guidelines based on patient problem list, gender, or age (68%), and preventive care services due (66%).
- Fewer than 50% of the practices with EHRs report routine or occasional use of automated reminders for missing labs and tests (46%) and high tech diagnostic imaging decisions support tools (31%).
- Practices that provide primary care tend to use EHR clinical decision support tools more than specialty practices. For more detail on the use of clinical decision support tools by practice type, please see the Appendix.

Over half of practices with EHRs report that providers regularly access lab and diagnostic test results by computer.



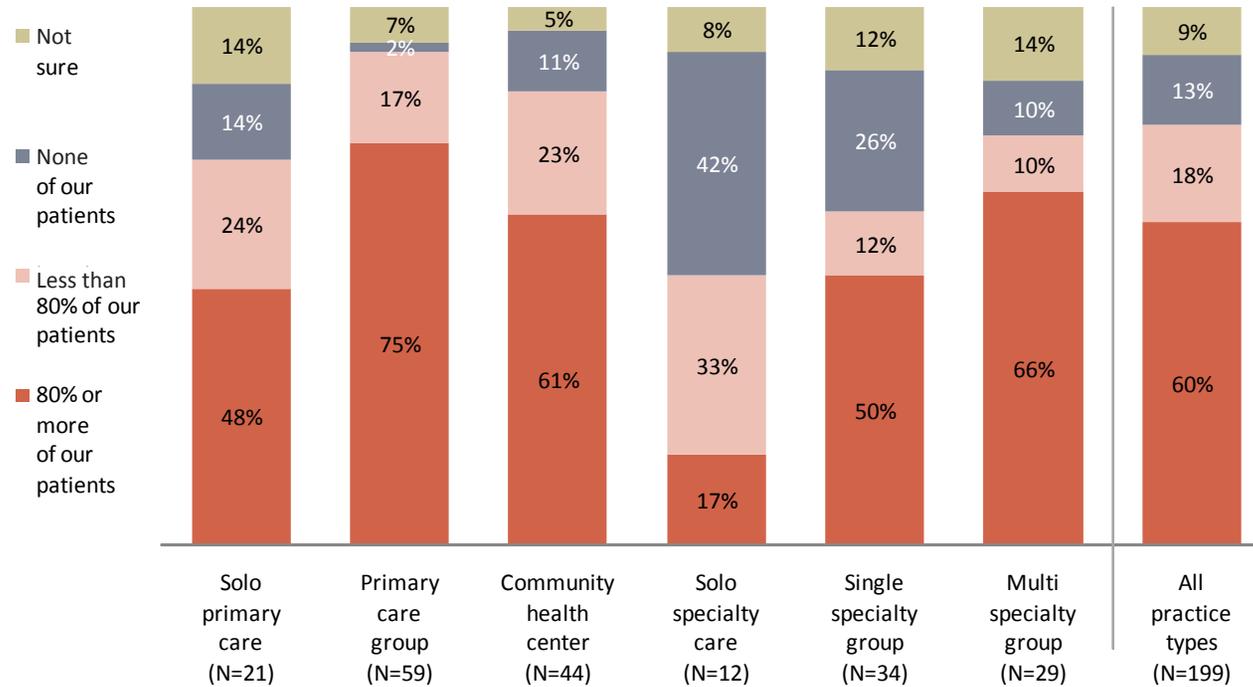
- Solo specialty and primary practices are less likely than other practices to report that providers access lab and diagnostic test results via computer.

Almost all (80%) of the practices with EHRs report using them to maintain problem lists for patients' active diagnoses.



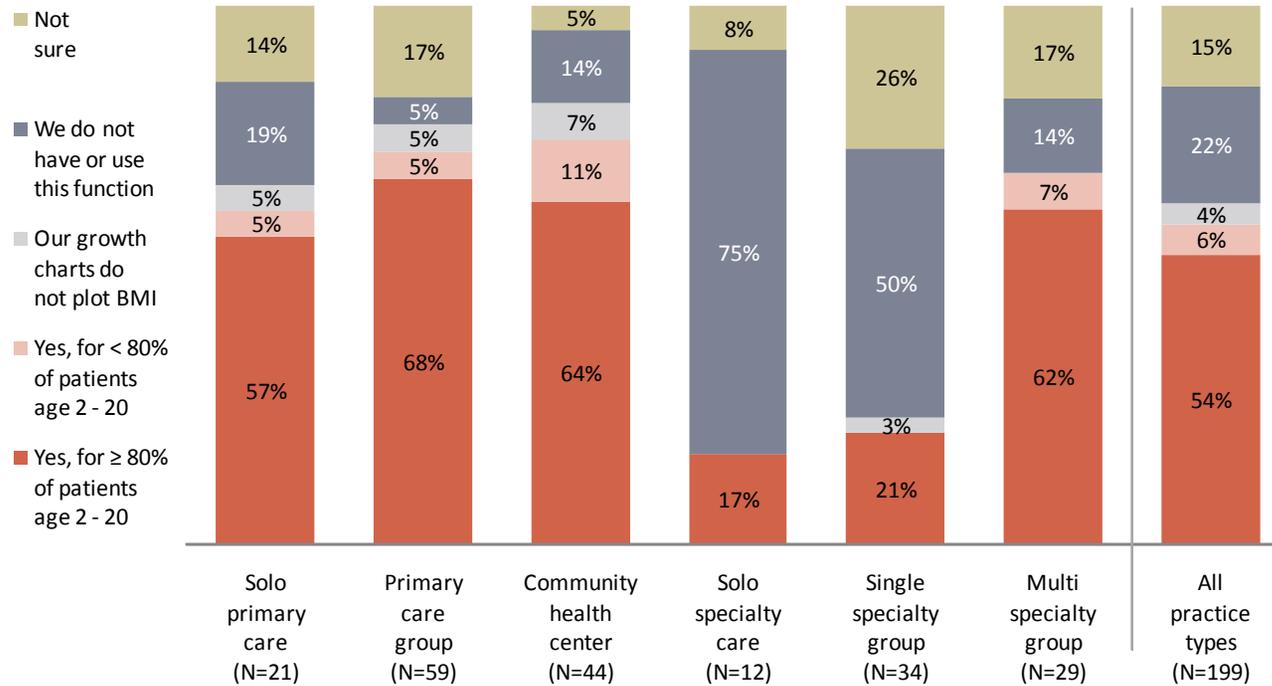
- Over three-quarters or more of all practice types report using EHRs to maintain patient problem lists for most patients.

Nearly two-thirds of practices with EHRs report using them to record and track body mass index (BMI) for 80% or more of patients.



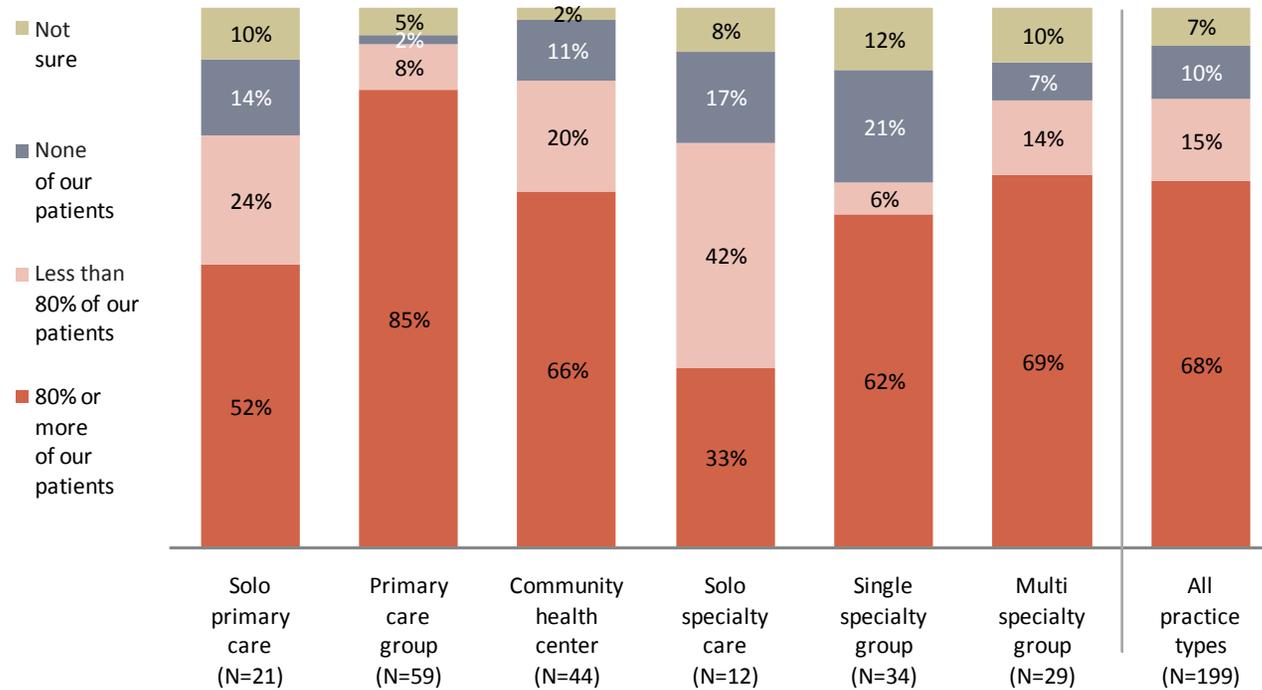
- Overall, 60% of practices use their EHR to track and record BMI for 80% or more of their patients.
- Another 18% do so, but for less than 80% of their patients.
- Primary care practices were more likely than specialty practices to use EHRs to record and track BMI.

Sixty percent of practices use the EHR to plot and display growth charts including BMI for children age 2-20.



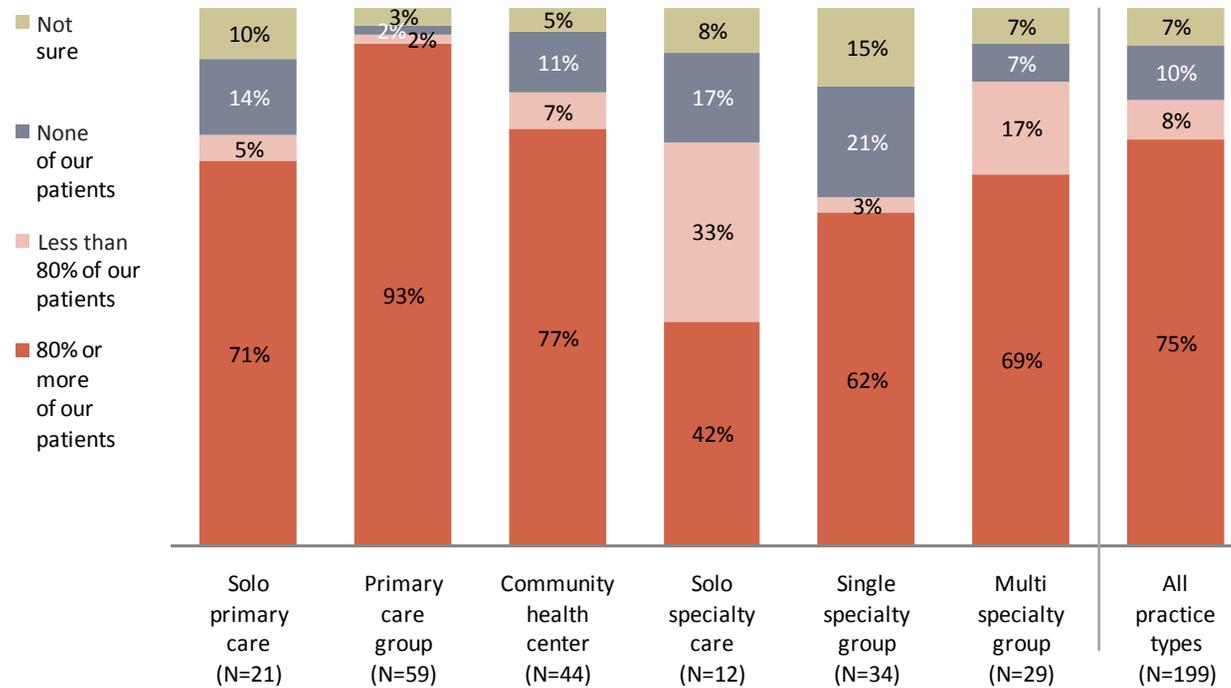
- Overall, 54% report using the EHR to plot and display growth charts including BMI for 80% or more patients aged 2-20; another 6% do so but for less than 80% of patients aged 2-20.
- These rates are higher among practices that provide primary care (primary care groups, 68%; community health centers, 64%; solo primary care, 57%; and multi-specialty groups, 62%).
- As expected, practices providing specialty care report lower rates (single specialty group, 21% and solo specialty care, 17%).

Over two-thirds of all practices report using their EHR to track and record height for 80% or more of patients.



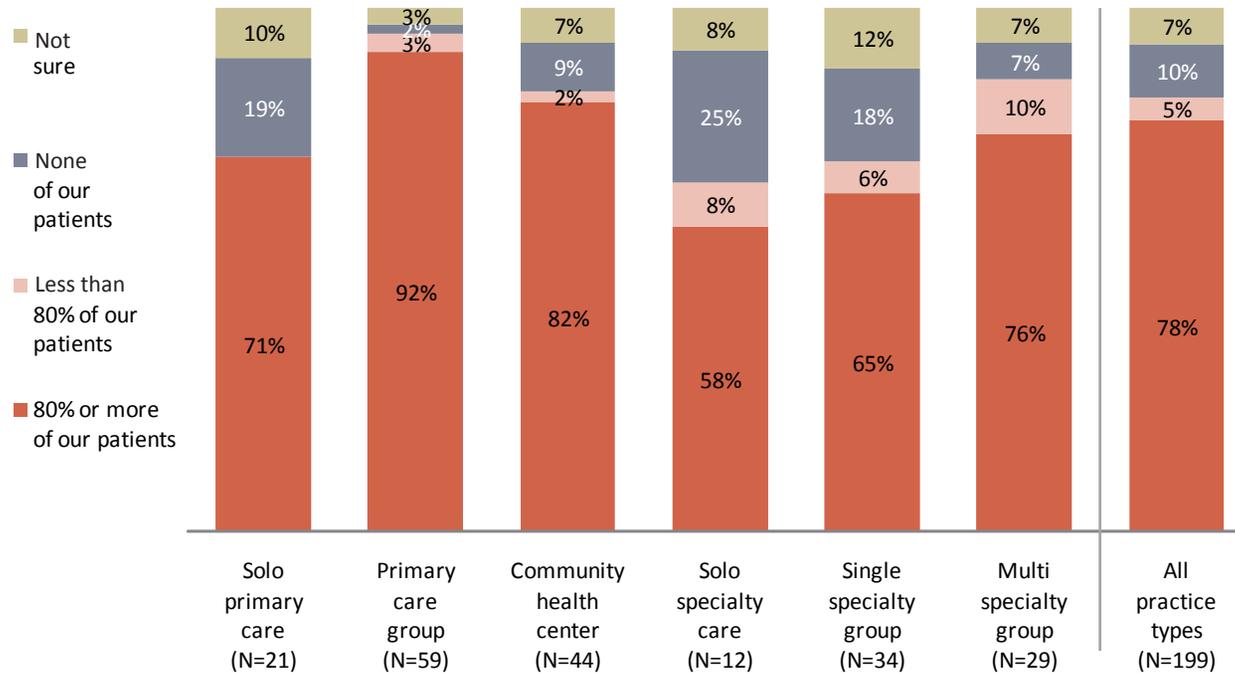
- 68% of all practices report using their EHR to track and record height for 80% or more of their patients; another 15% do so, but for fewer than 80% of patients.
- Group practices are more likely to record and track patient height using their EHRs.
- Solo primary and specialty care practices are less likely than other practice types to track and record height for most patients.

Three-quarters of the practices use their EHR to track and record weight for most patients.



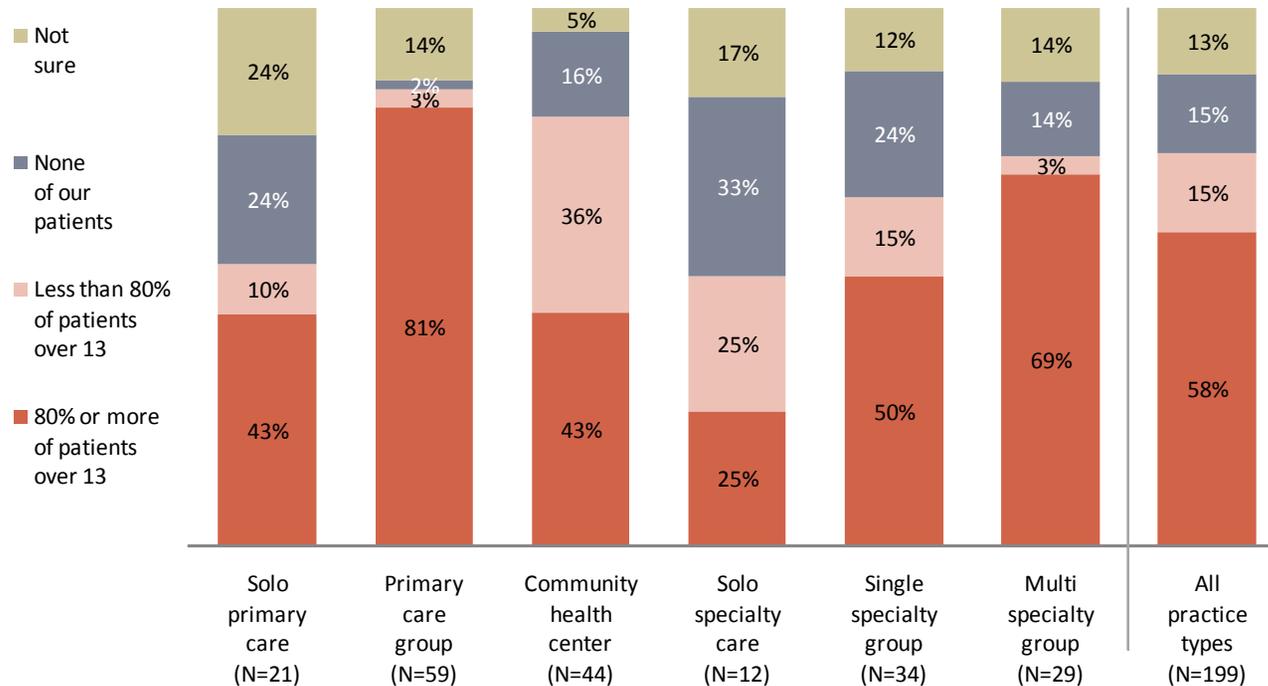
- Three-quarters of the practices use their EHR to record and track height for most patients; another 8% do so, but for fewer than 80% of patients.
- Practices that provide primary care had higher rates than specialty practices.

Overall, 78% of practices report using their EHRs to track and record blood pressure for most patients.



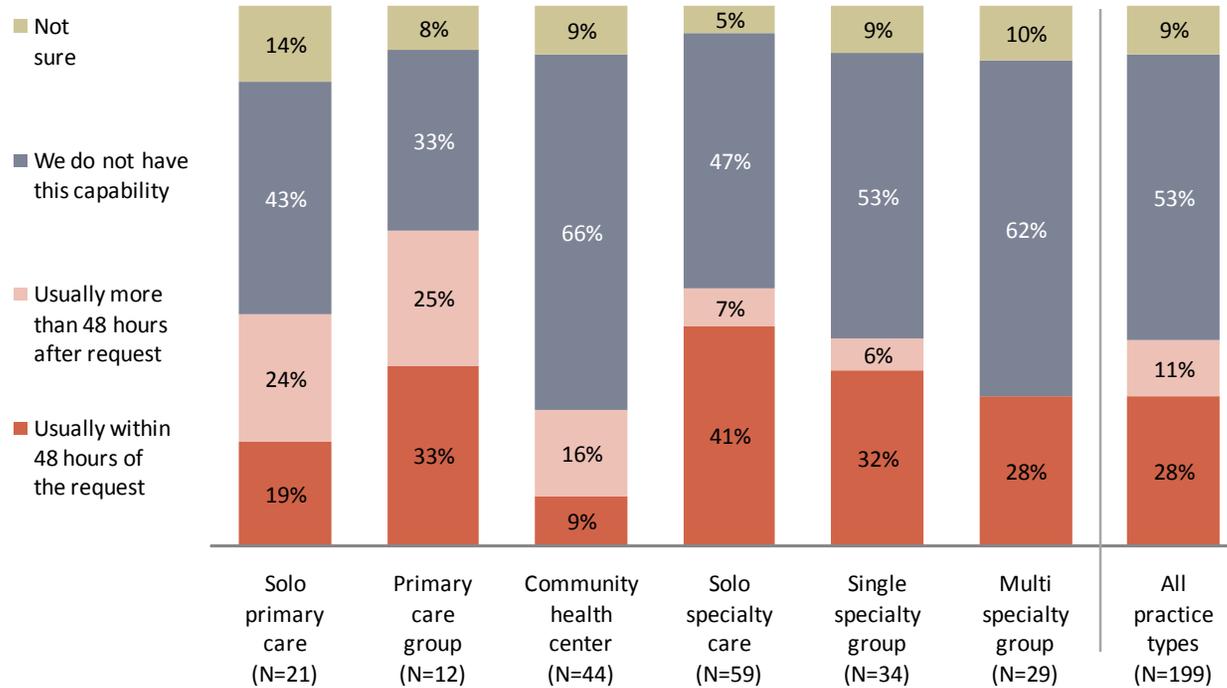
- Primary care group practices and community health centers report higher rates of using the EHR to track and record blood pressure.
- These rates are somewhat lower among solo specialty care and single specialty group practices.

About three-quarters of practices report using the EHR to track tobacco use among patients aged 13 and older.



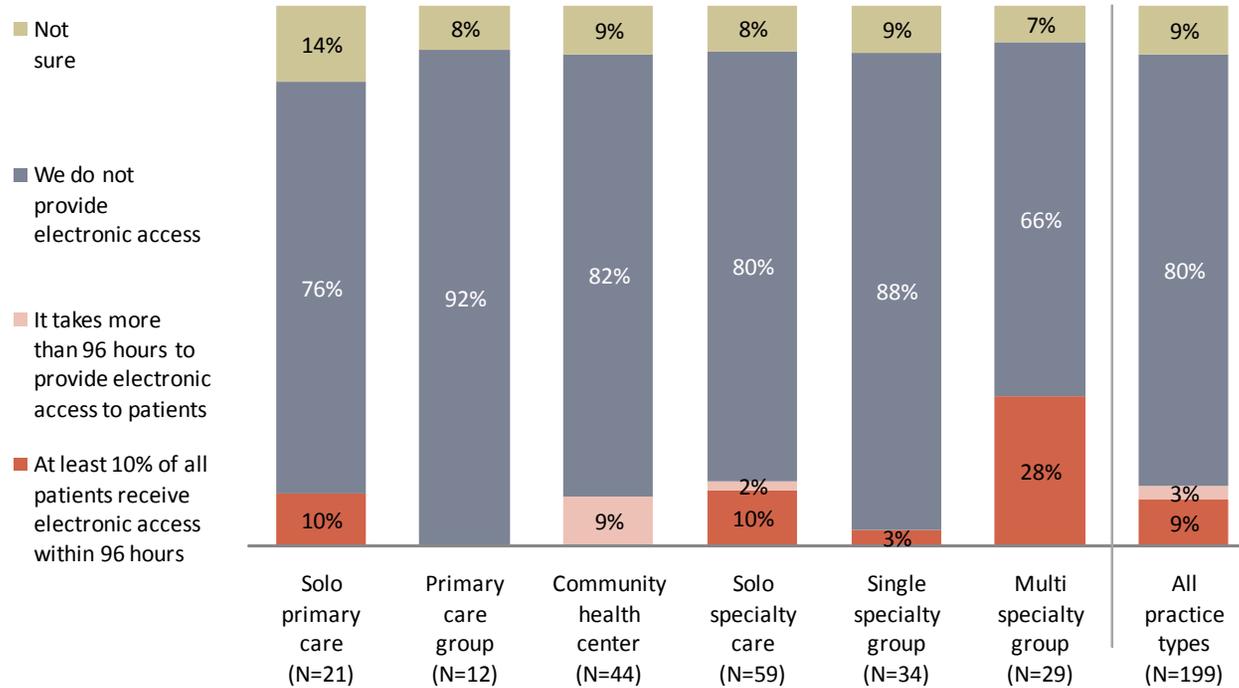
- Overall, 58% of practices report using the EHR to track tobacco use for 80% or more of patients aged 13 and older; another 15% reported doing so, but for less than 80% of patients.
- Primary care groups (81%) and multi-specialty groups (69%) have the highest rates of EHR use for this purpose.
- 43% of community health centers use the EHR to track tobacco; another 36% do so, but for less than 80% of their patients.

About 40% of the practices report that they are able to provide patients with an electronic copy of their health information.



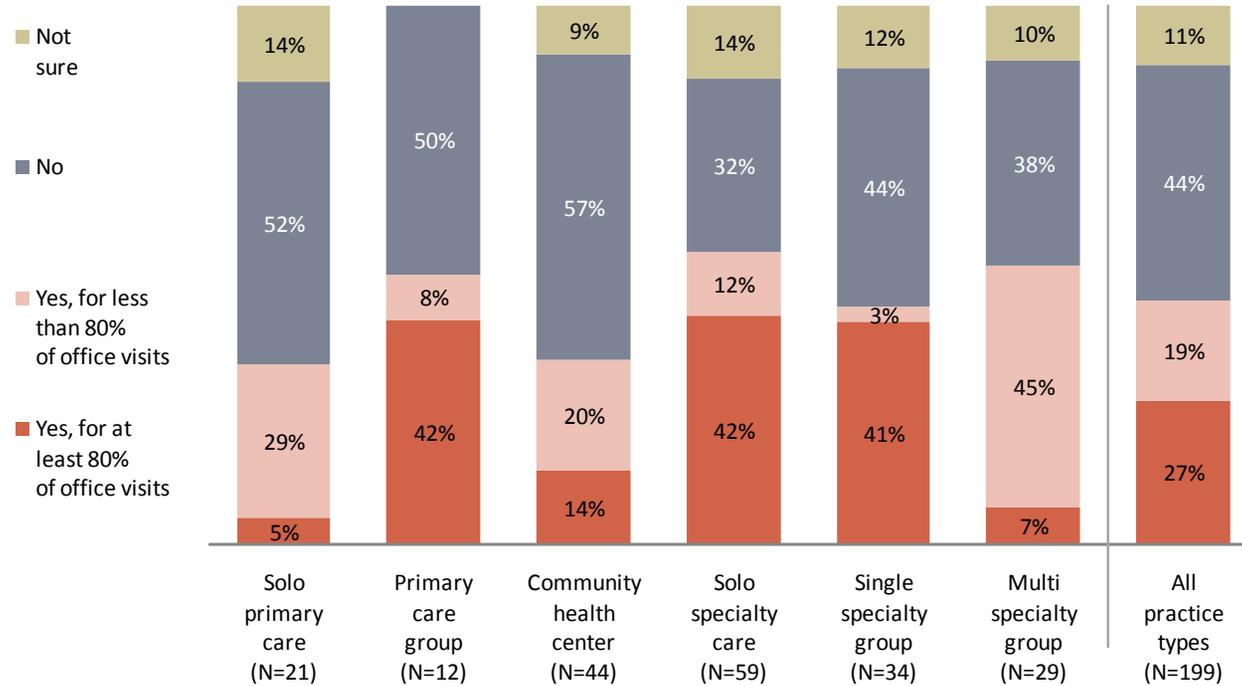
- 28% are able to provide electronic copies within 48 hours of the request. Another 11% are able to provide patients with copies, but not within 48 hours of the request.
- 9% of community health centers are able to provide patients with electronic copies of their health information within 48 hours of the request. Another 16% are able to provide electronic copies, but not within 48 hours of the request.

A small minority of practices with EHRs provide patients with electronic access to their health information.



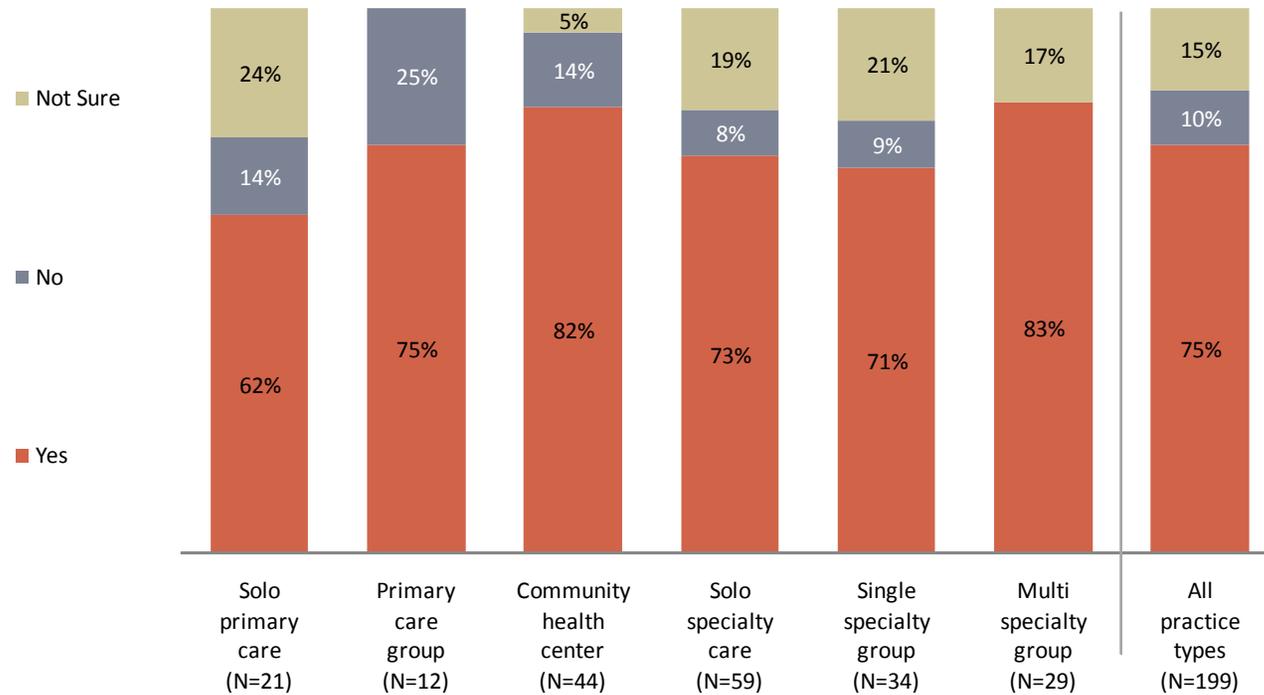
- Overall, 9% percent of all practices reported that they provide patients with electronic access to their health information within 96 hours of it being available to the provider. Another 3% provide electronic access to patients, but it takes longer than 96 hours.
- A higher proportion of multi-specialty practices reported providing patients with electronic access to their health information than other practice types.

About half of all practices report they provide clinical summaries of each office visit for patients.



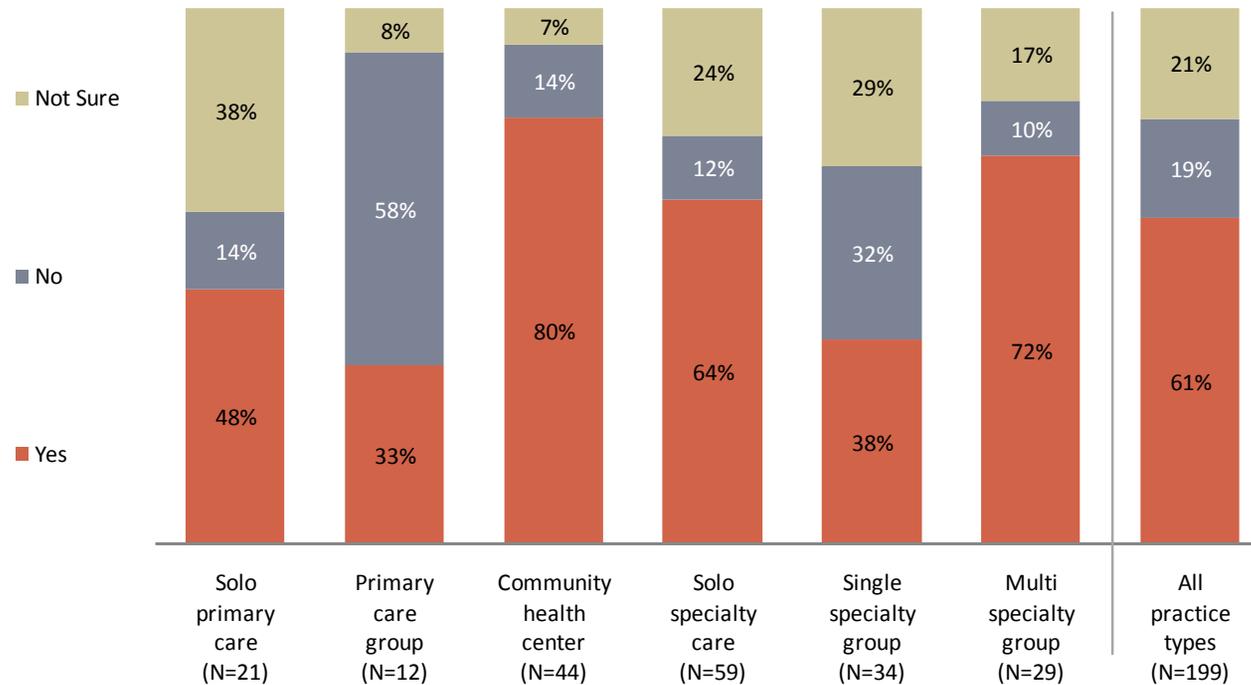
- 27% of all practices provide clinical summaries for at least 80% of office visits and another 19% provide these summaries, but for fewer than 80% of office visits.
- 44% of all practices report that they do not provide clinical summaries for each office visit.

Three-quarters of the practices report that they share data from the EHR with other providers for internal quality improvement efforts.



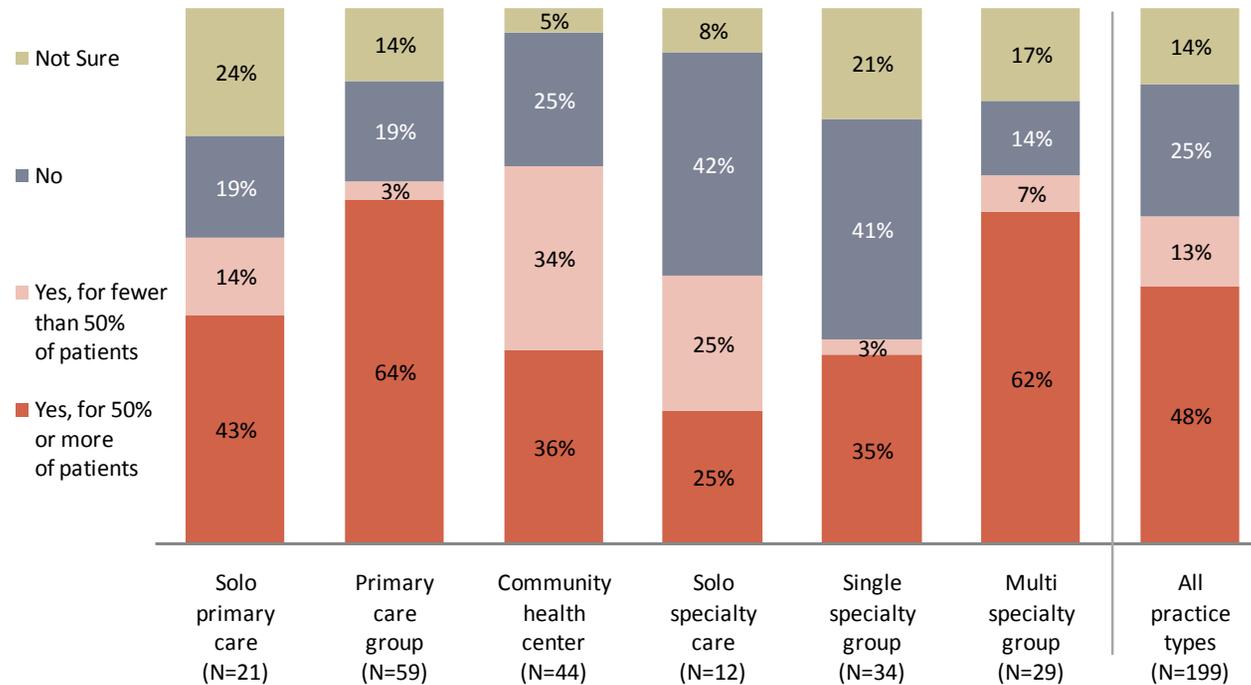
- The data show slight variations by practice type in the proportion of practices sharing data from the EHR with other providers for internal quality improvement efforts: multi-specialty group (83%), community health centers (82%), primary care group (75%), solo specialty care (73%), single specialty group (71%), and solo primary care (62%).

Overall, about 60% of the practices report using data from the EHR to set goals around clinical guidelines.



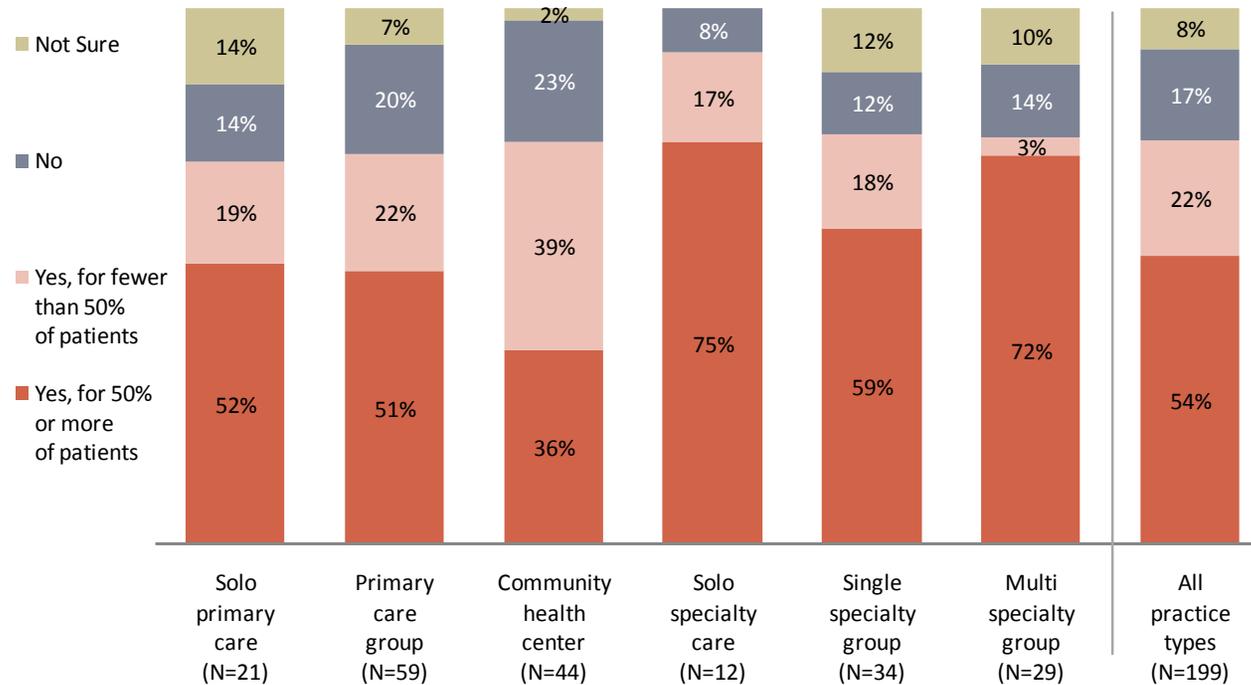
- Community health centers (80%) and multi-specialty group practices (72%) reported higher rates of using data from the EHR to set goals around clinical guidelines for internal quality improvement efforts.

About 60% of the practices report that they identify and remind patients over 50 years of age that they are due for preventive care.



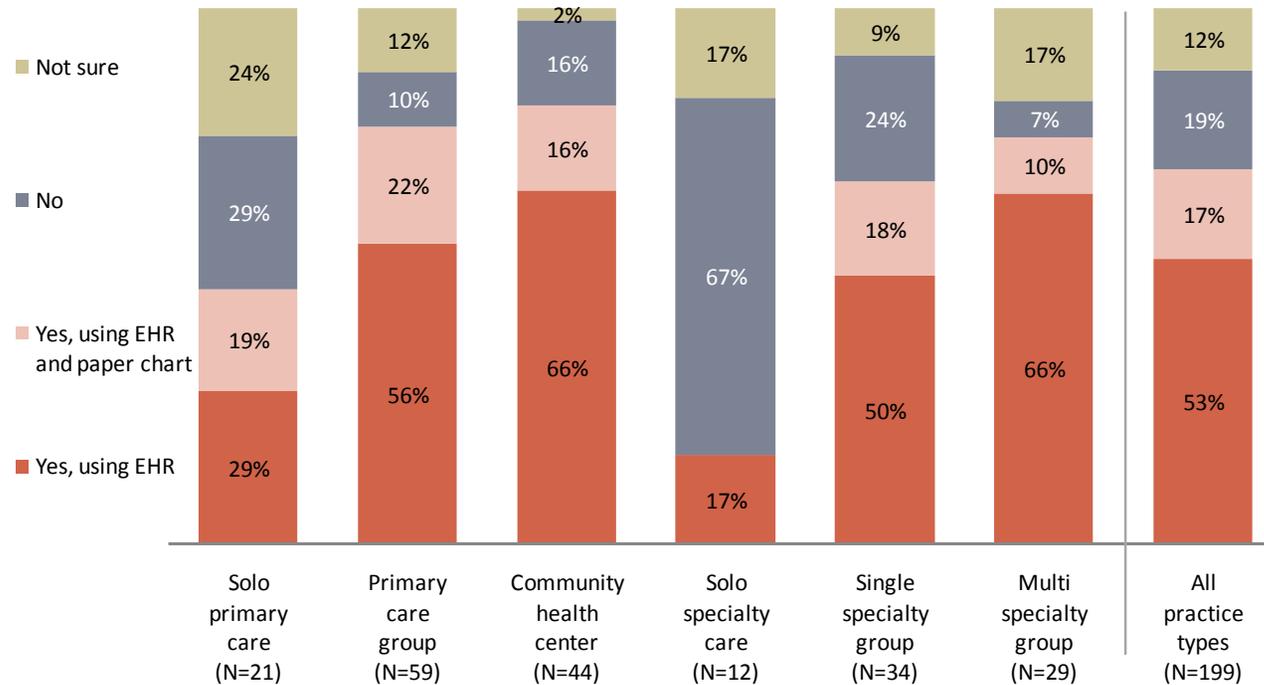
- Overall, fewer than half (48%) of the practices with EHRs routinely identify and remind patients over 50 years of age that they are due for preventive care. Another 13% do so, but for fewer than half of these patients.
- A higher proportion of primary care group (64%) and multi-specialty group (62%) practices routinely use their EHRs to identify and remind patients over 50 of preventive care.
- While only 36% of community health centers routinely use the EHR in this way, another 34% use the EHR to perform this function for less than half of their patients.

Slightly more than half of all practices routinely send patient reminders for follow-up care.



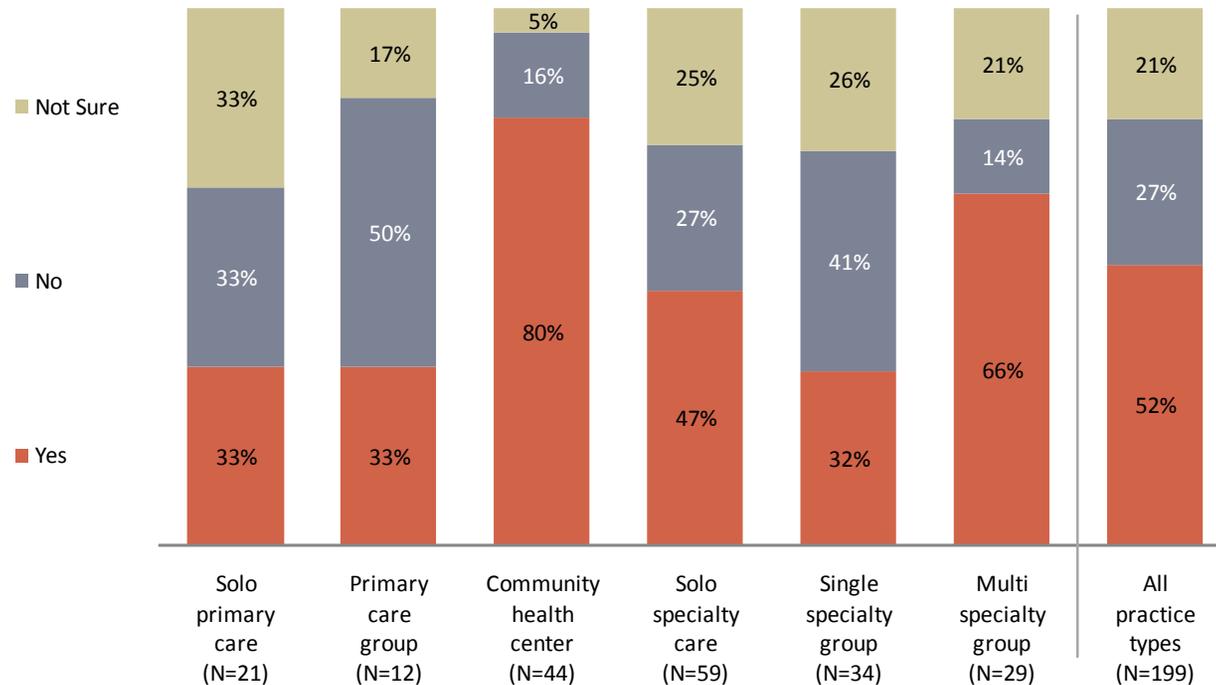
- A higher proportion of specialty care providers routinely perform this function: 75% of solo specialty care providers, 72% of multi-specialty group practices, and 59% of single specialty group practices.
- A smaller proportion of the primary care practices and community health centers routinely send reminders for follow-up care; a large share of them provide reminders on a less-than-routine basis.

Seventy percent of practices use data from the EHR to submit quality measures to external organizations.



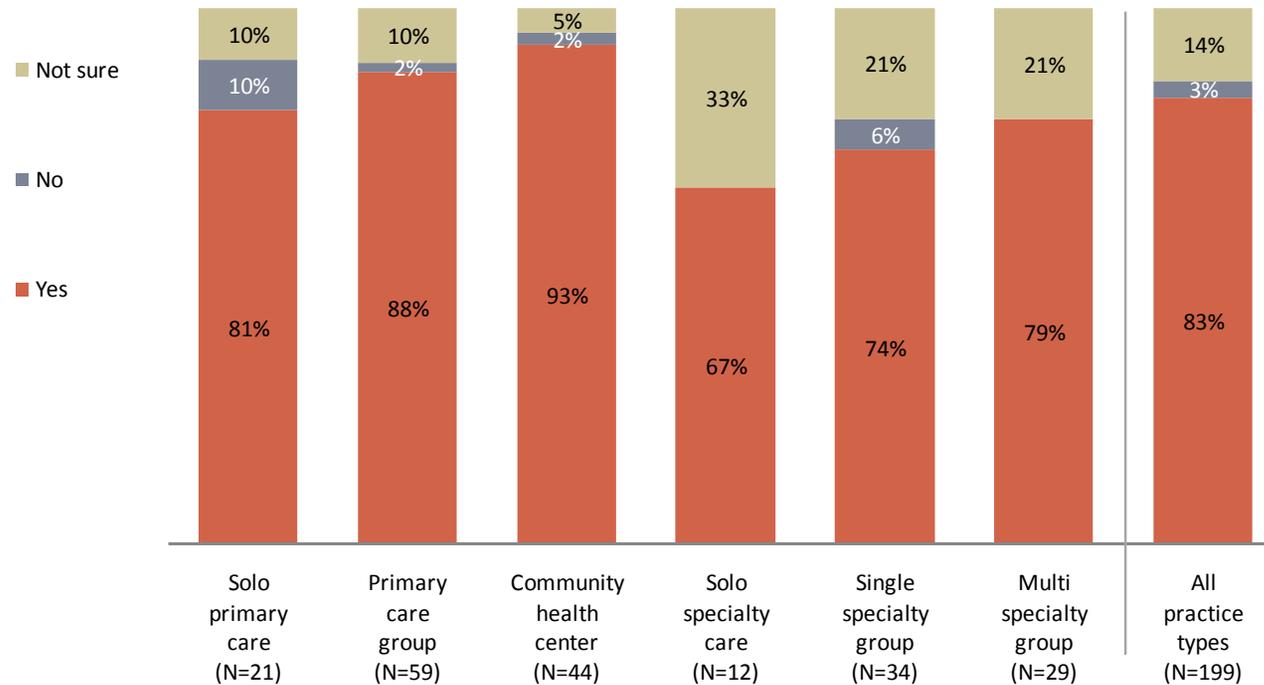
- Of the 70% of practices that use data from the EHR to report quality measures to external organizations, 76% use data from the EHR alone and another 24% use data from the EHR and paper charts. (not shown)
- Group practices are more likely than solo practices to prepare external quality reports using only the EHR.

More than half of the practices report using data from the EHR to create benchmarks and clinical priorities for internal quality improvement.



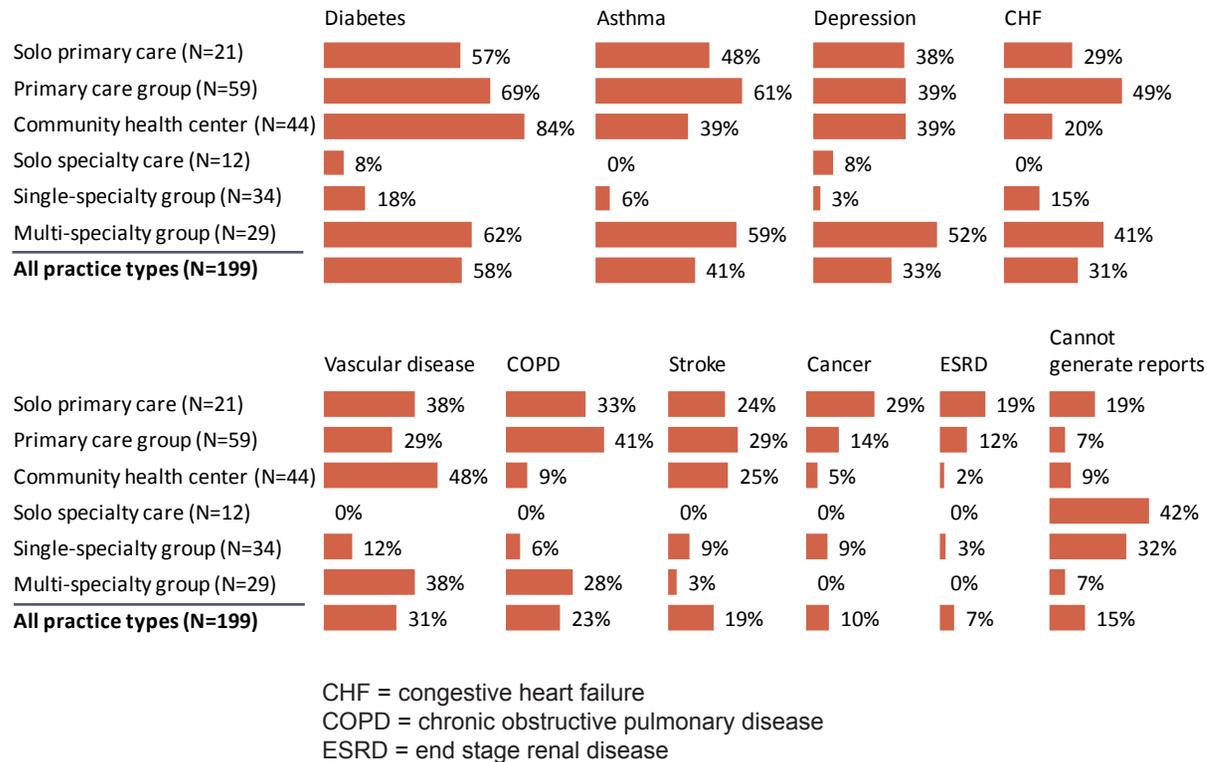
- Most community health centers (80%) report using data from the EHR to create benchmarks and clinical priorities for internal quality improvement efforts. Two-thirds of the multi-specialty group practices and 47% of the solo specialty care practices use data from the EHR to create benchmarks and clinical priorities.
- About one third of the solo primary care, primary care group, and single specialty group practices use data from the EHR for internal quality improvement efforts.

A large majority of practices report they can generate a report listing patients by specific conditions.



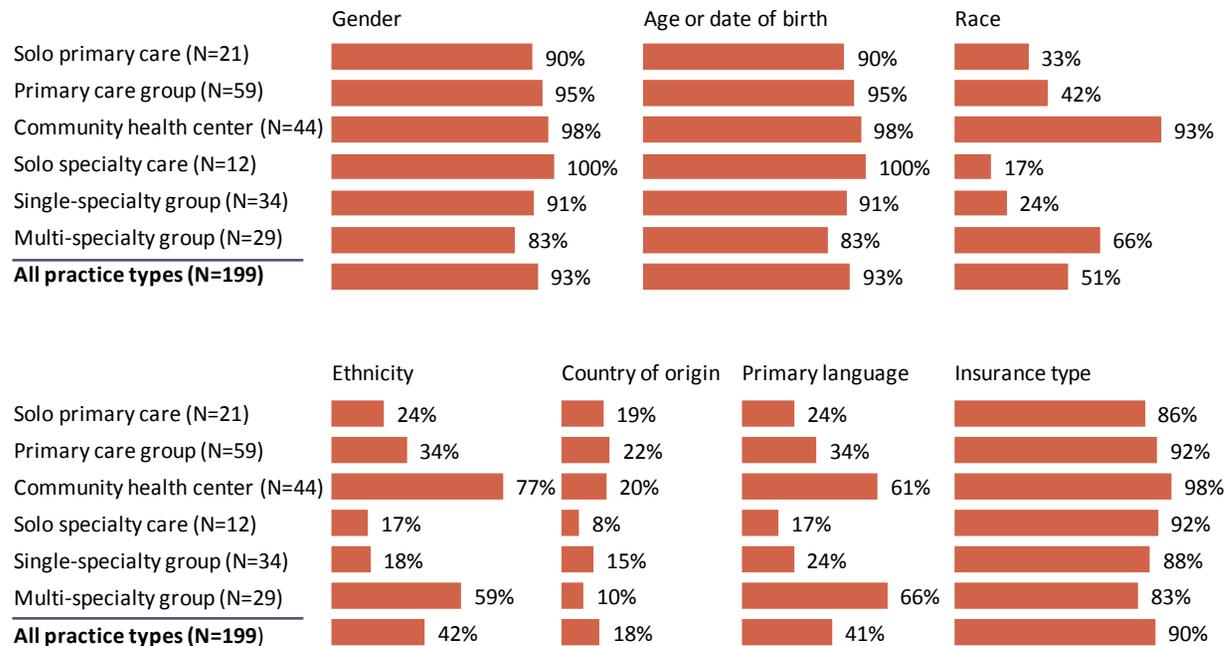
- Overall, 83% of the practices report they can produce at least one report listing patients by a specific condition (i.e., a disease registry).
- Primary care practices report higher rates than specialty practices for reports listing patients by specific condition: community health centers (93%), primary care group practices (88%), and solo primary care practices (81%).

Primary care practices are more likely than specialists to report the capacity to generate reports by condition.



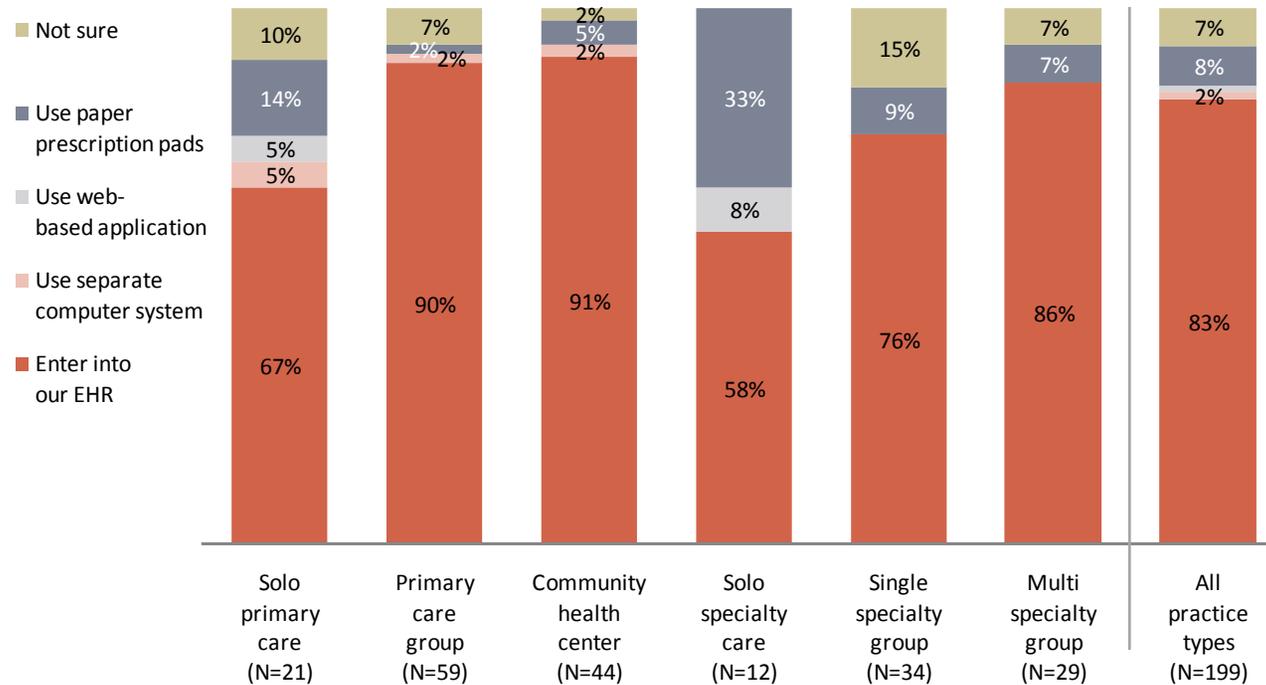
- Practices providing primary care are more apt to generate reports by condition.
- Overall, a higher proportion of practices were able to generate reports for diabetes (58%), asthma (41%), and depression (33%).
 - Congestive heart failure – 31%
 - Vascular disease – 31%
 - Chronic obstructive pulmonary disease – 23%
 - Stroke – 19%
 - Cancer – 10%
 - End stage renal disease – 7%

Nearly all practices capture certain demographic information: gender, age or date of birth, and insurance type in their EHRs.



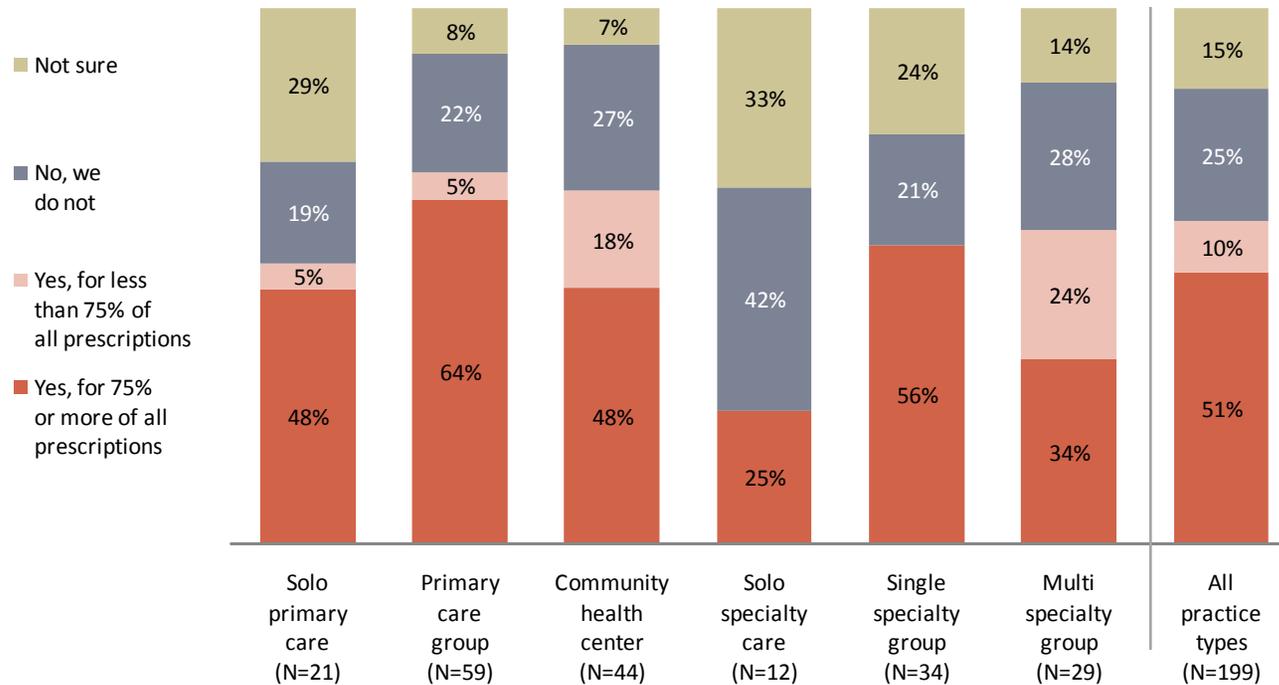
- 93% of practices capture gender and age or date of birth, and 90% of practices capture insurance type in their EHRs. All practice types report high rates of EHR capture for these demographics.
- Practices are less likely to capture race, ethnicity, country of origin and primary language in their EHRs and this capacity varies by practice type.

A large majority of practices with EHR systems indicate that providers order medications by entering prescription information into the EHR.



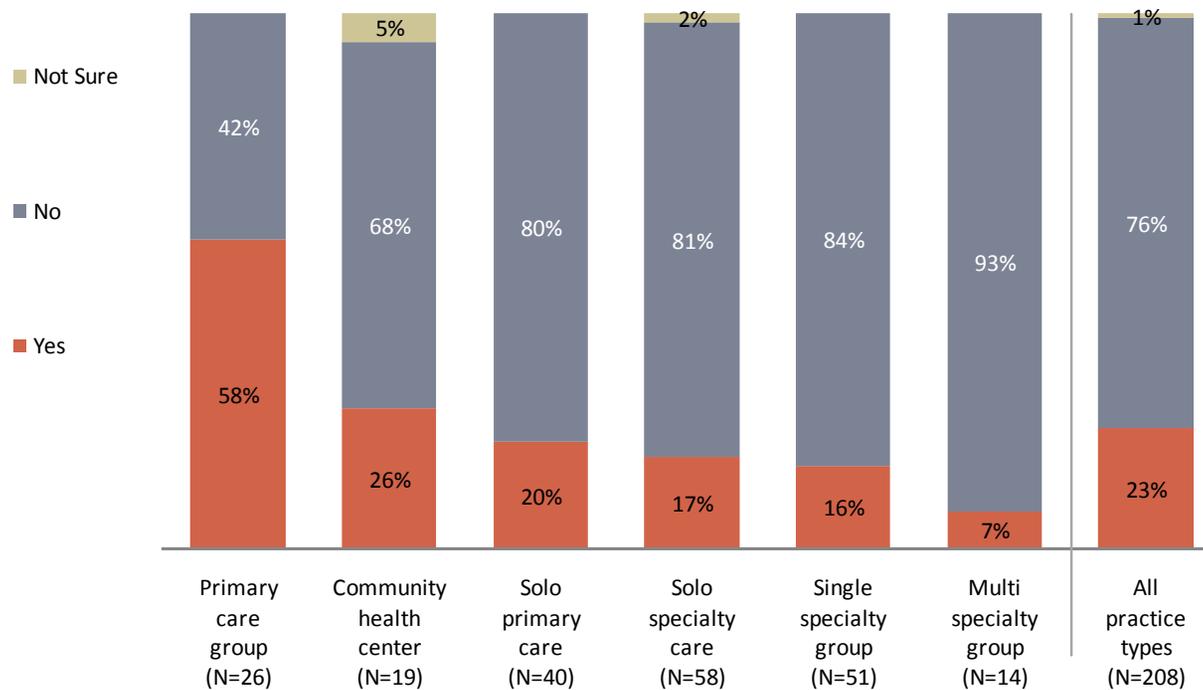
- Group practices that provide primary care [e.g., community health centers (91%) and primary care group practices (90%), and multi-specialty group practices (86%)] have higher rates of prescription order entry into the EHR than other practice types.
- Solo specialty care practices have the lowest rate of prescription order entry into the EHR (58%); 33% of these practices indicate that providers use paper prescription pads to order medications.

About half of all practices generate and transmit prescriptions electronically.



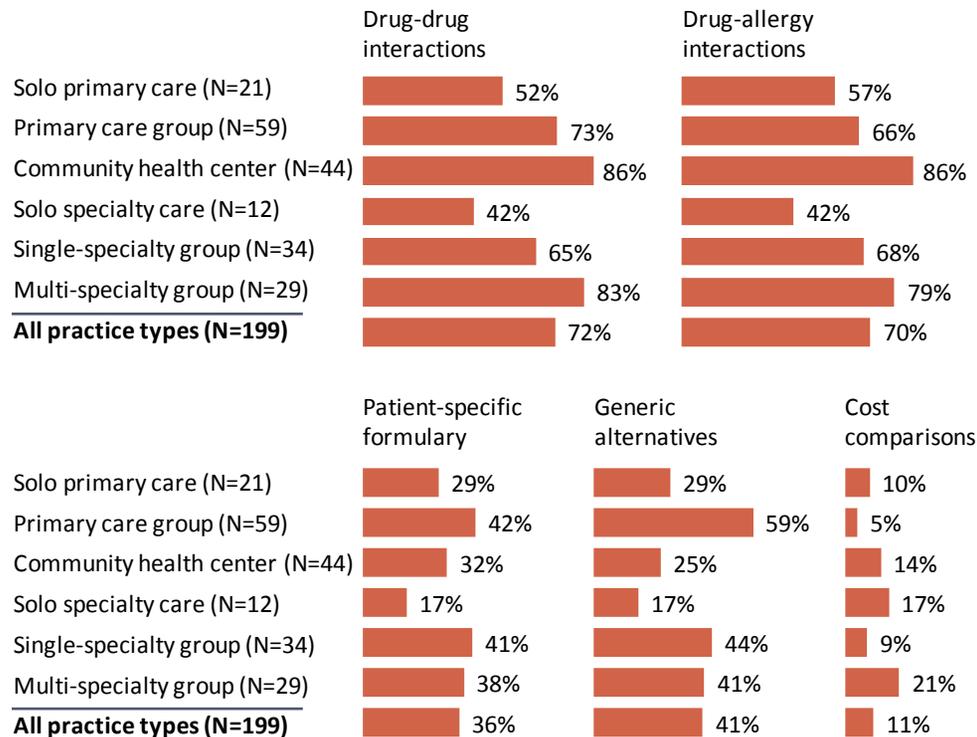
- Half of the practices generate and transmit most (75% or more) of their permissible prescriptions electronically and another 10% permit a lesser proportion (less than 75%).
- Primary care practices report higher rates of electronic prescribing than the specialty practices.
- 23% of the responding practices without EHR systems use an electronic system to write and send prescriptions. Electronic prescribing is more common among primary care group practices (58%) and community health centers (26%).

Less than a quarter of the practices without EHRs use electronic systems to write and send prescriptions.



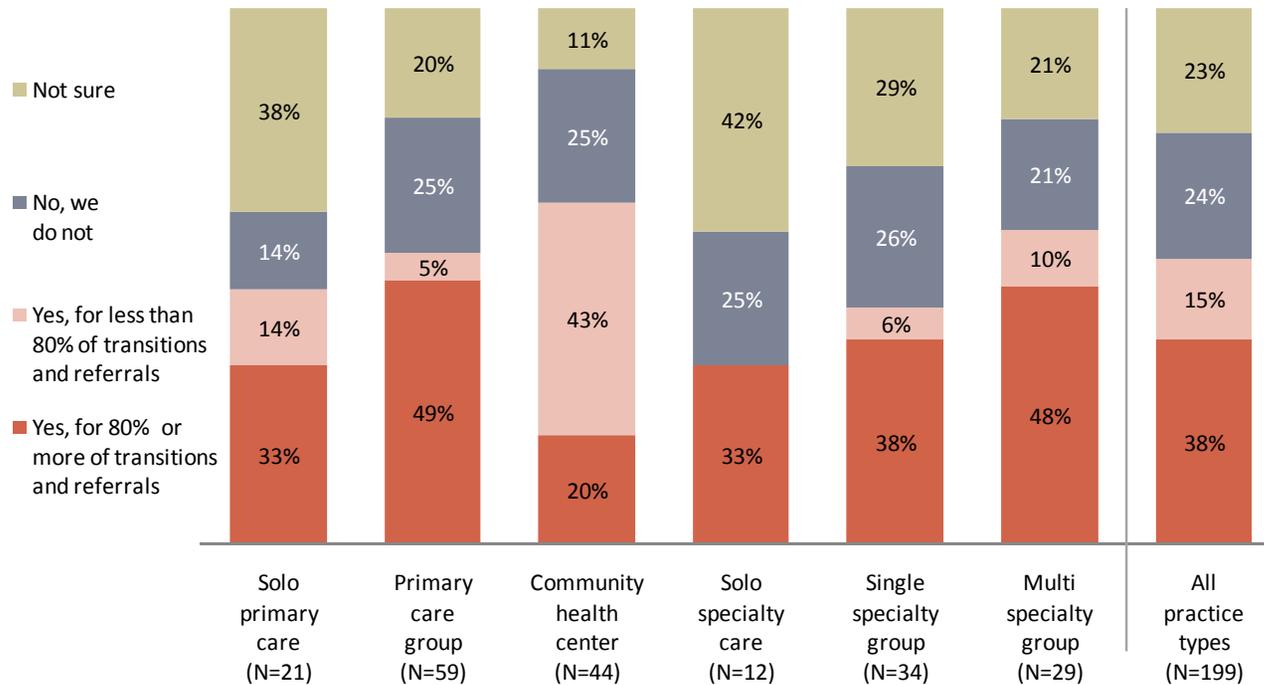
- More than half (58%) of the primary care group practices without EHRs use an electronic system (e.g., computer system that is not part of an EHR or web-based application) to write and send prescriptions.

Among practices with EHRs, a majority are alerted of drug-drug and drug-allergy interactions at the point of prescribing.



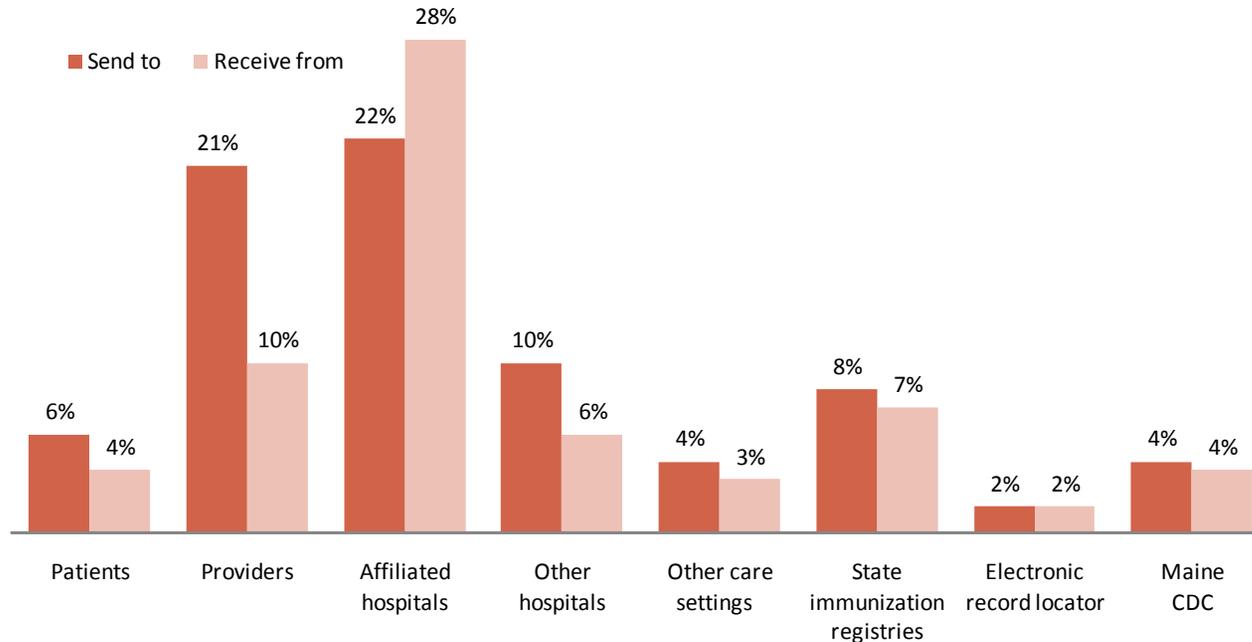
- Group practices are more likely to be alerted of drug-drug and drug-allergy interactions at the point of prescribing than solo practices.
- Fewer than half of practices are alerted to any patient-specific formulary information (38%) or generic alternatives available (41%).
- Only a small minority (11%) are alerted to cost comparisons for medications.

Thirty-eight percent of all practices report performing medication reconciliation routinely at transitions and referrals.



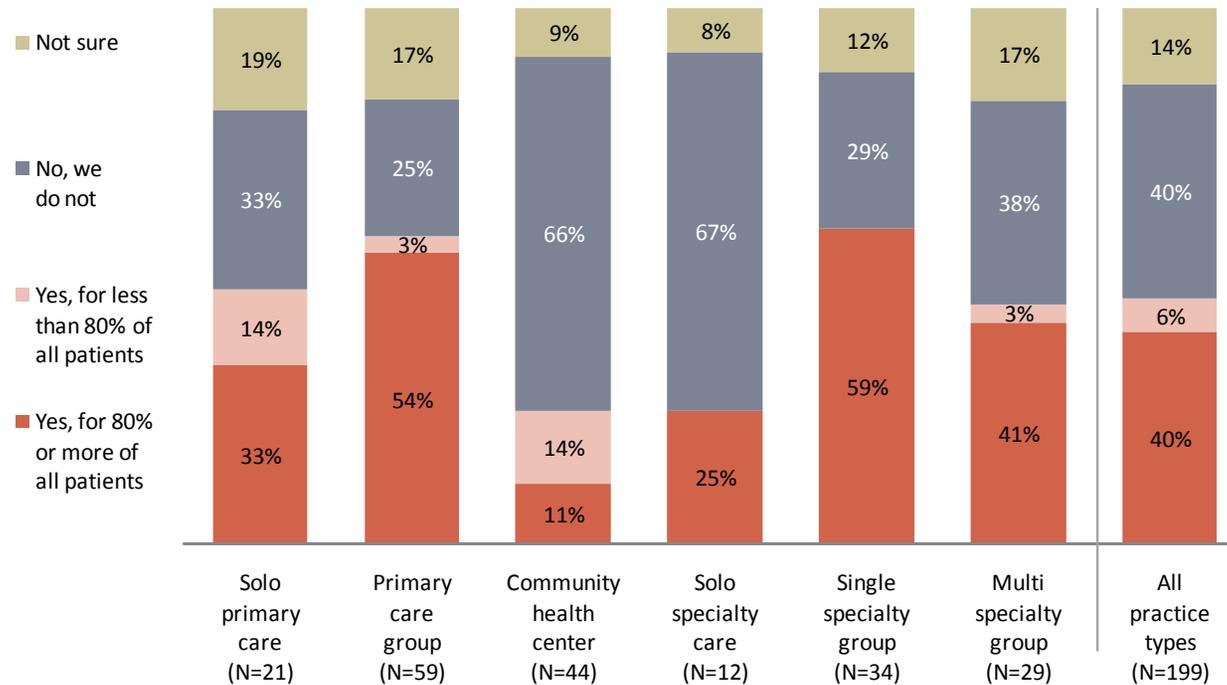
- 15% of all practices perform medication reconciliation, but do so for less than 80% of transitions and referrals.
- About half of the primary care group practices (49%) and multi-specialty group practices (48%) routinely perform medication reconciliation at transition and referrals.
- Only 20% of community health centers routinely perform medication reconciliation at transitions and referrals; another 43% perform medication reconciliation less routinely (for less than 80% of transitions and referrals).
- Both solo primary care and specialty care practices routinely perform medication reconciliation for about one-third of transitions and referrals.

A small proportion of practices with EHRs electronically exchange clinical and patient data.



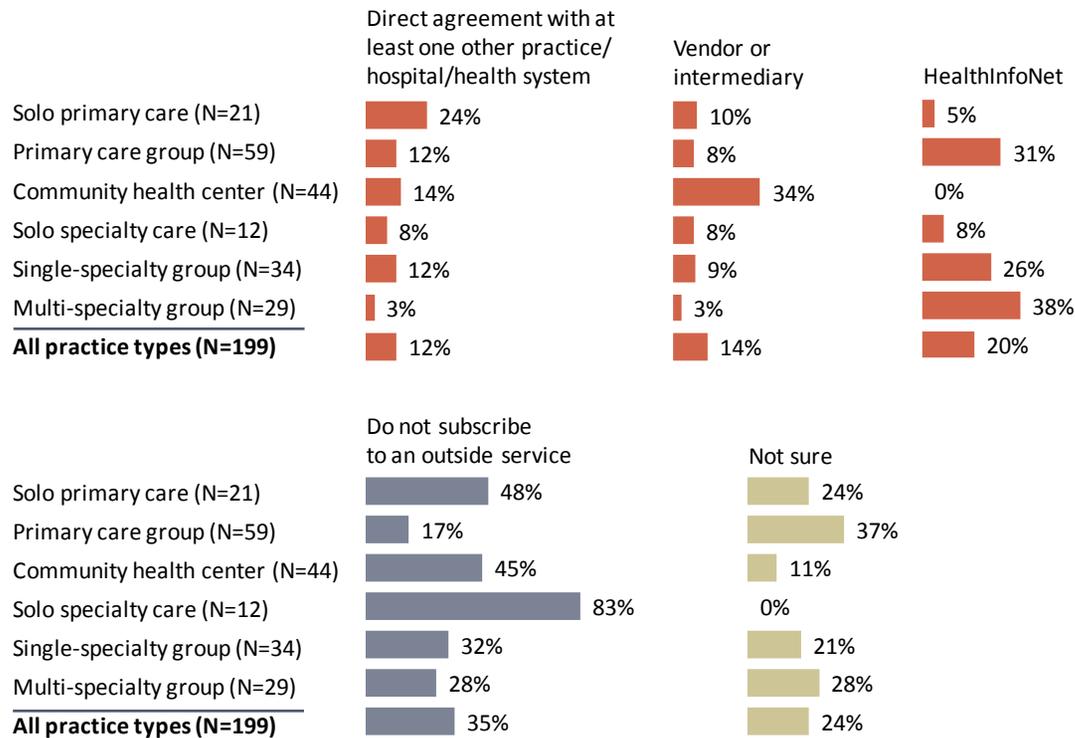
- Fewer than 30% of practices indicate they electronically exchange clinical and patient data.
- 28% of practices electronically receive clinical and patient data from affiliated hospitals and 22% of practices send patient and clinical data to affiliated hospitals.
- 21% of providers electronically send clinical and patient data to other providers.
- 10% of providers receive electronic clinical and patient data from other providers.
- Information exchange among unaffiliated hospitals, patients, and state agencies is quite rare, with no more than 1 in 10 providers exchanging clinical and patient data with these entities.

Forty percent of practices routinely provide electronic summary care records for patients requiring transition of care or a referral.



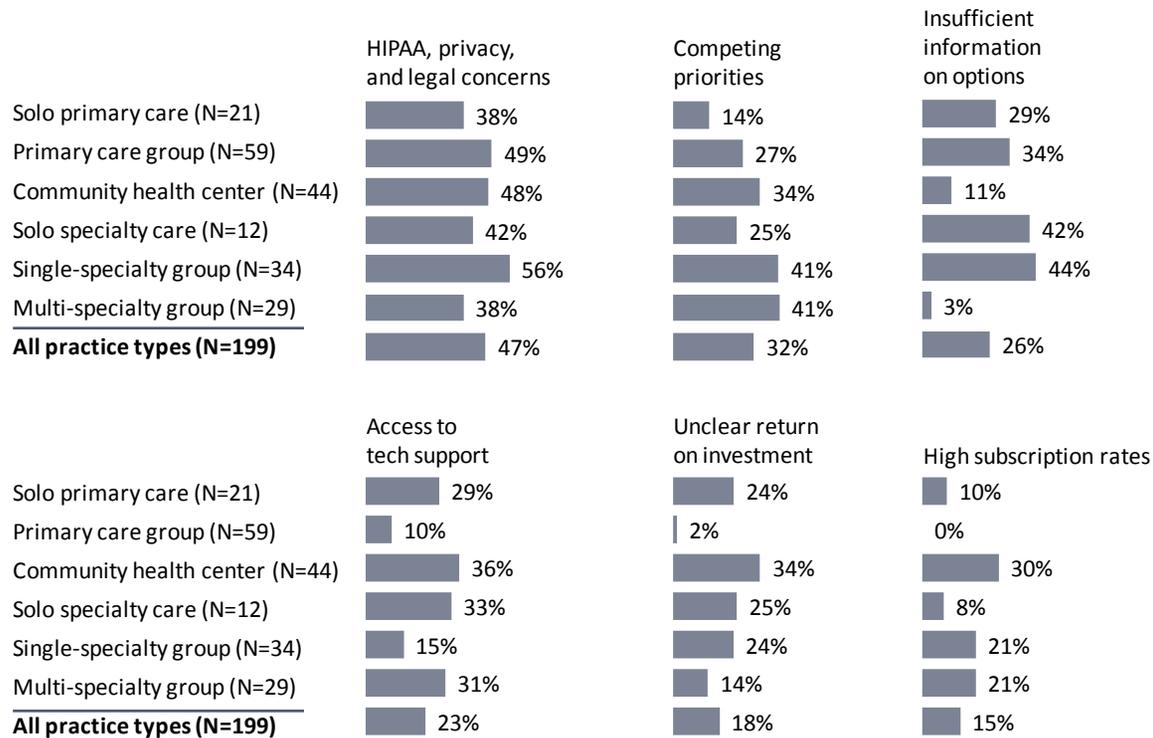
- Primary care group practices (54%) and single specialty group practices (59%) are somewhat more likely to provide electronic summary care records for patients requiring transition of care or a referral.
- Community health centers and solo specialty care practices are least likely to provide these summaries. 11% of community health centers routinely provide electronic summary care records; 14% provide them, but on a less-than-routine (for under 80% of patients) basis.
- 25% of solo specialty care practices provide electronic summary care records for patients requiring transition of care or a referral.

Practices use a variety of outside services to facilitate health information exchange across organizations.

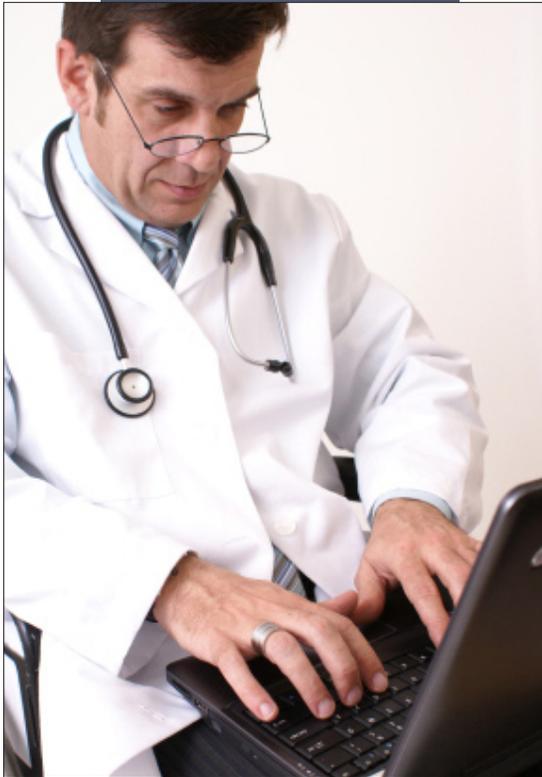


- 35% of all practices do not subscribe to an outside service to facilitate health information exchange.
- Of those that subscribe to an outside service to facilitate information exchange:
 - 20% subscribe to HealthInfoNet,
 - 4% to another vendor or intermediary, and
 - 12% have a direct agreement with at least one other practice, hospital, or health system.

Practices cite a number of challenges related to secure information exchange with outside organizations.



- The most common challenges named by all practices were:
 - privacy and legal concerns (47%),
 - competing priorities (32%),
 - insufficient information on options (26%),
 - unclear return on investment (18%) and
 - high subscription rates (15%).
- Barriers cited vary by practice type.



Section III

Progress Towards Meeting Meaningful Use Requirements

Meaningful EHR Use among Maine Ambulatory Practices

Background

To encourage the adoption and meaningful use of HIT, Congress authorized Medicaid and Medicare to make annual incentive payments to eligible professionals (providers) and hospitals over six years, beginning in 2011. To qualify for these incentives, providers and hospitals must meet criteria that set goals for the meaningful use of electronic health records and those applying for the Medicaid incentives must maintain a certain minimum percentage of Medicaid patients in their caseload.

The meaningful use regulations were drafted and then finalized by the federal Office of the National Coordinator for Health Information Technology (ONC). The regulations define meaningful use goals for each of five policy priorities:

- Improving quality, safety, efficiency, and reducing health disparities;
- Engaging patients and families in their healthcare;
- Improving care coordination;
- Ensuring adequate privacy and security protections for personal health information (PHI); and
- Improving population and public health.

The meaningful use criteria will be introduced in three stages, with each stage more rigorous than the one before. To qualify for the incentives during Stage 1, eligible professionals must satisfy 15 core (mandatory) meaningful use objectives, at least 5 of 10 “menu objectives”, and 6 clinical quality measures.

Because the survey was developed and administered before the final regulations were issued, the analysis presented in this report is limited. First, because draft criteria were more stringent and harder to achieve than the criteria in the final rule, the survey may have underestimated the number of practices that will apply for incentives. Second, because the wording of the survey was based on the draft regulations, some of the survey’s multiple-choice categories do not correspond exactly to those in the final regulations. For example, the survey asked physician practices that already use EHRs whether they generated prescriptions electronically:

- Yes, for 75% or more of all prescriptions
- Yes, for less than 75% of all prescriptions
- No, we do not have this function or it is turned off
- Not sure

However, the final regulations reduced the 75% requirement to just 40% or more of all prescriptions.

Where these differences occur, we have translated the survey answers into the language of the final regulations. For example, we received the following responses to the prescriptions question:

Answer	Percent among practices that have an EHR†
Yes, for 75% or more of all prescriptions	51%
Yes, for less than 75% of all prescriptions	10%
No, we do not have this function or it is turned off	25%
Not sure	15%
Total	100%

† The individual numbers in this column do not add up to 100% due to rounding.

We know that 51% of those physician practices clearly met the new 40% requirement, and that the next 10% of practices may, or may not, have electronically generated enough prescriptions to reach the final 40% threshold. Therefore, we can say that between 51% and 61% percent of EHR-equipped provider practices were able to meet the new 40% meaningful use requirement for electronic prescribing.

Key Findings

At the time of the survey, almost half of practices indicated that eligible professionals within the practice anticipated applying for either a Medicaid or Medicare incentive. Thirty-eight percent of practices did not intend to apply for either a Medicaid or Medicare incentive and 13% said they were unsure. Nearly 70% of practices with an installed EHR intend to apply for one or both incentive payments. Since the survey was administered before the meaningful use criteria were relaxed, the proportion of practices that intend to apply for one or both incentives may now be higher.

Overall, practices appear to have a long way to go to meet Stage I meaningful use criteria. The following table summarizes survey data on practice preparedness to meet core and menu meaningful use criteria.

Survey Results by Meaningful Use Policy Priority Areas

Improving quality, safety, efficiency, and reducing health disparities

- Over half the practices can meet these core criteria:
 - maintain problem lists of active and current diagnosis;
 - use clinical decision support rules;
 - maintain active medication allergy lists; active medication lists;
 - use drug-drug/drug-allergy interaction checks;
 - record patient smoking status; and
 - use electronic prescribing.
- Fewer than half can meet the core criteria for recording demographics and charting changes in vital signs.
- Most practices can meet two of the following four menu criteria:
 - list patients by specific condition; and
 - incorporate lab test results into the EHR
- Few practices meet two other menu criteria:
 - send reminders for needed preventive/ follow-up care; and
 - perform drug formulary checks

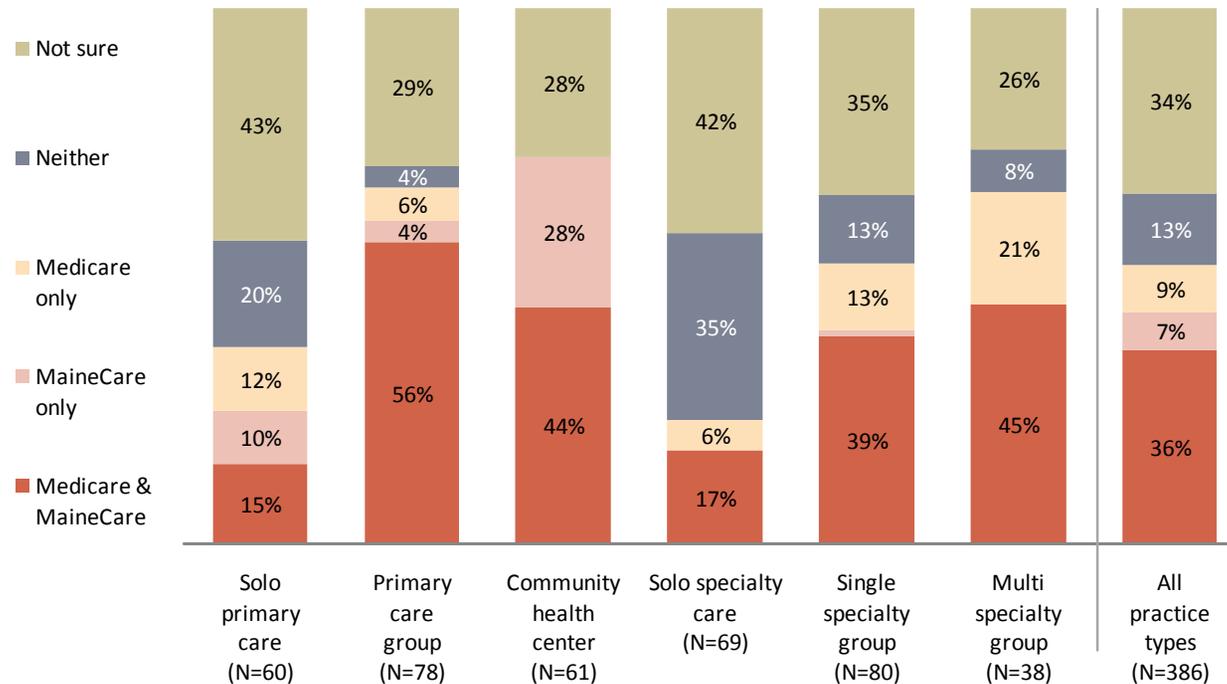
Engaging patients and families in their healthcare

- Most practices do not to satisfy these two core measures:
 - provide patients an electronic copy of health information
 - provide patients clinical summary for each office visit
- Only 9% provide patients with timely electronic access to their health information

(continued)

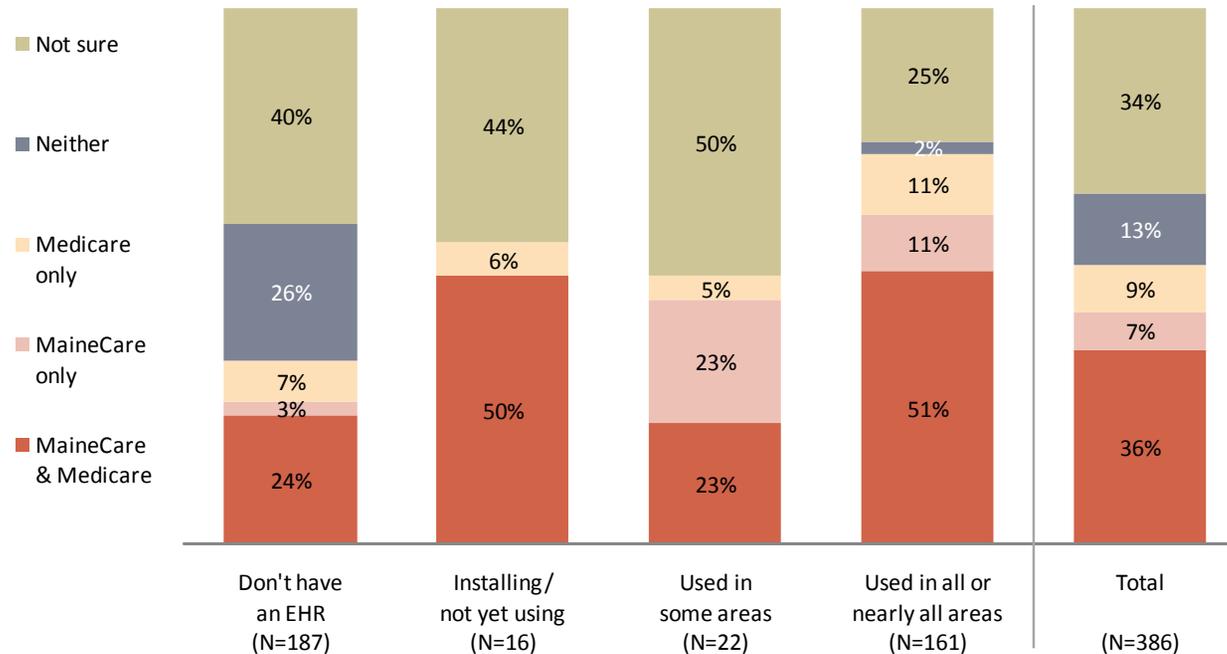
<p>Improving care coordination</p>	<ul style="list-style-type: none"> • 58% do not meet core criteria on exchanging key clinical information with patients' other providers. • About half meet or may meet these two menu criteria: <ul style="list-style-type: none"> - medication reconciliation at encounters and transitions - provide summary record at transitions of care and referrals.
<p>Ensuring adequate privacy and security protections for PHI</p>	<ul style="list-style-type: none"> • The final regulations differ considerably from the survey's questions about protecting patient privacy and data security.
<p>Improving population and public health</p>	<ul style="list-style-type: none"> • Only a very small minority of practices meet the other two core and menu criteria: <ul style="list-style-type: none"> - only 8% use their EHR to submit information to immunization registries (core); and - only 4% send electronic information on reportable diseases to the Maine CDC (menu).

Over half of the practices intend to apply MaineCare or Medicare incentive payments.



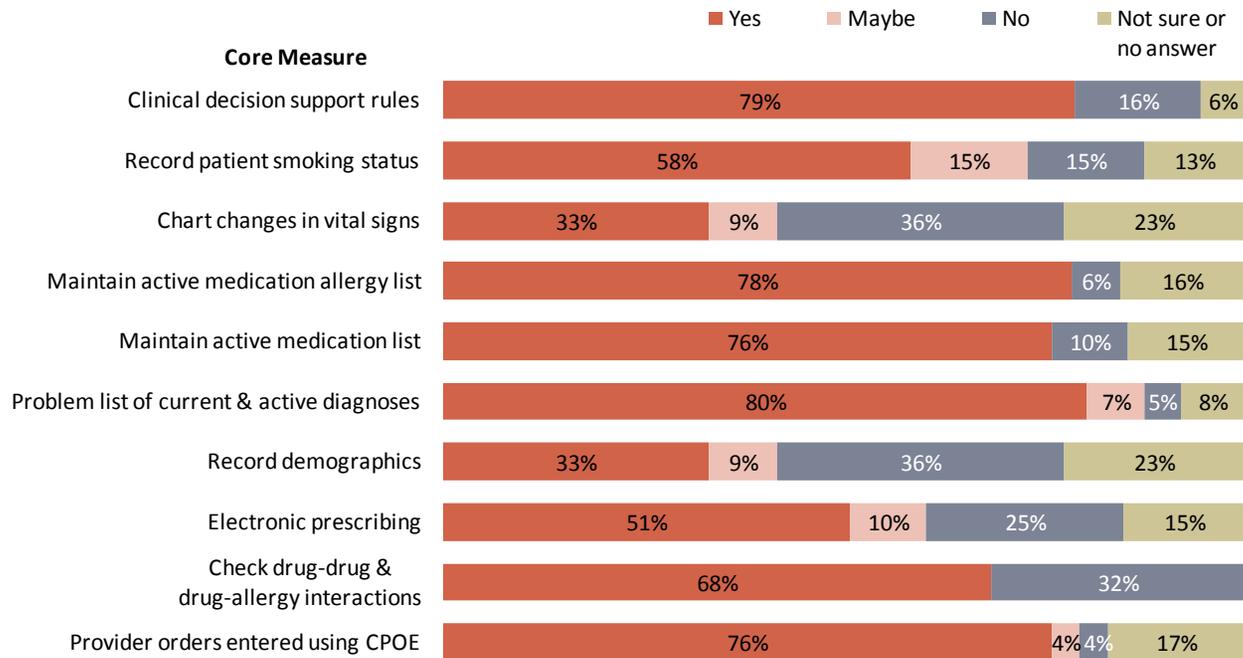
- 34% intend to apply for both incentive payments, 8% intend to apply for the Medicare payments only, and 7% intend to apply for the MaineCare incentive payments only.
- 38% do not intend to apply for either type of incentive payment and 13% are unsure at the time of the survey.
- Community health centers and group practices are more likely to report intent to apply for one or more incentive payment: community health centers (70%), primary care group practices (62%), and multi-specialty group practices (59%).
- At the time of the survey 34% of the solo specialty care practices responding and 20% of the solo primary care practices responding were unsure about whether they would apply for either incentive payment.

Intent to apply varies by extent of EHR adoption and use.



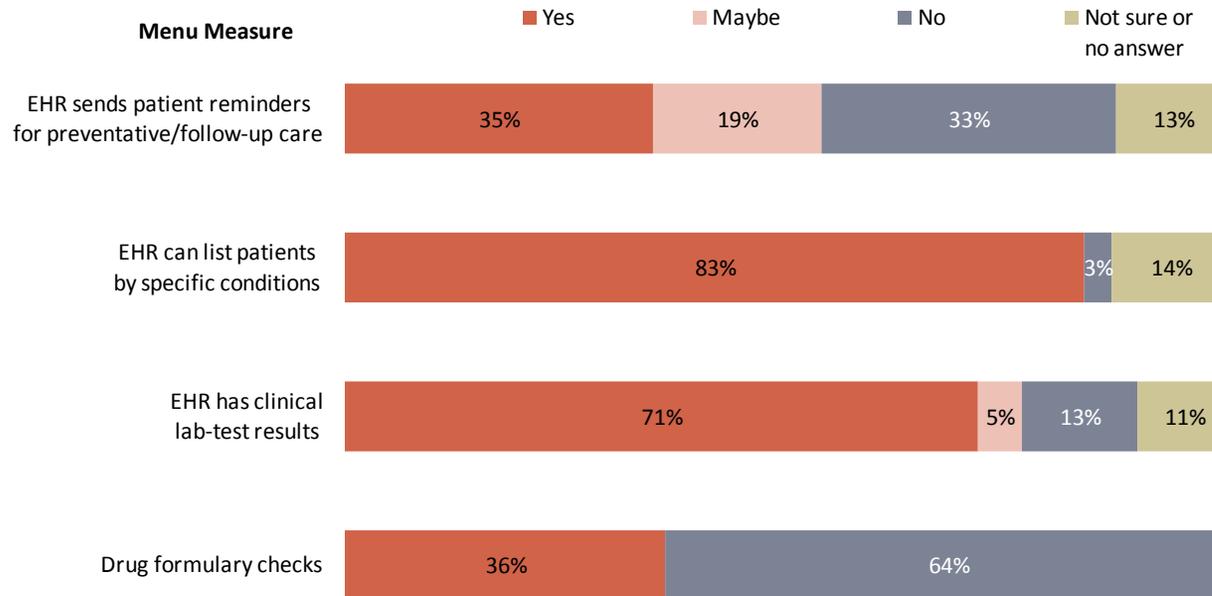
- Of practices with EHRs installed and in use, 67% intend to apply for one or both incentive payments.
- Of the practices that are installing an EHR, but not yet using, 56% intend to apply for one or both incentive payments.
- Of the practices without an EHR, 33% intend to apply for one or both payments and 25% do not intend to apply for either incentive payment.

Most practices with EHRs report the capacity to meet most core meaningful use criteria related to improving quality, safety, efficiency, and reducing health disparities.



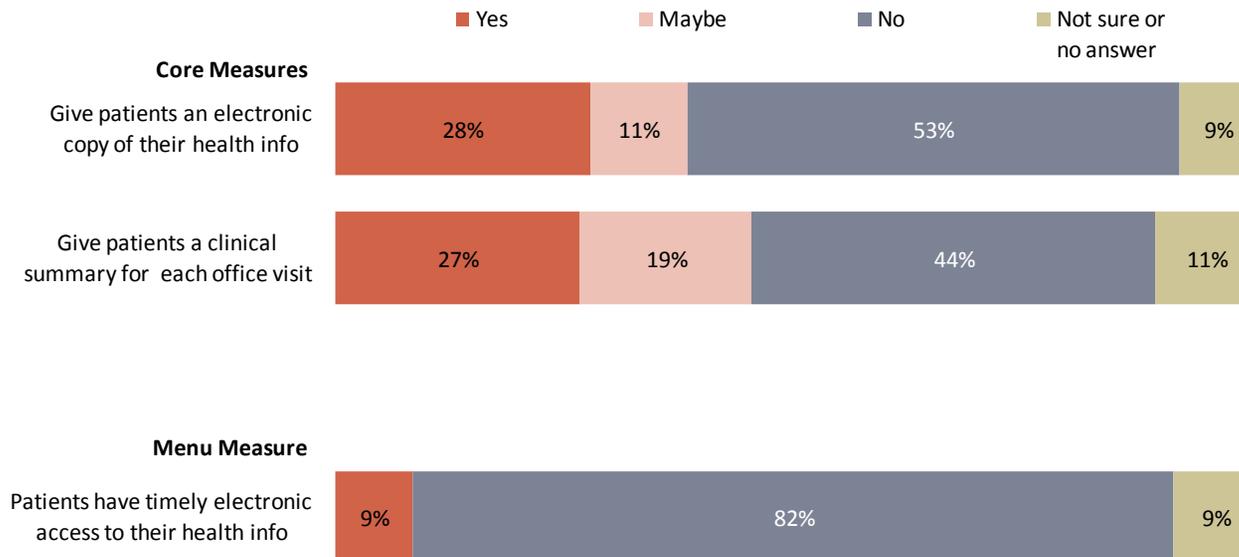
- Over half of practices indicate that they could meet core quality requirements related to:
 - problem lists of active and current diagnosis,
 - clinical decision support rules,
 - active medication allergy lists and active medication lists,
 - drug-drug/drug-allergy interaction checks,
 - patient smoking status, and
 - electronic prescribing.
- Fewer than half indicate that they could meet core quality requirements related to recording demographics and charting changes in vital signs.

Most practices appear to meet two of the four menu criteria related to improving quality, safety, efficiency, and reducing health disparities.



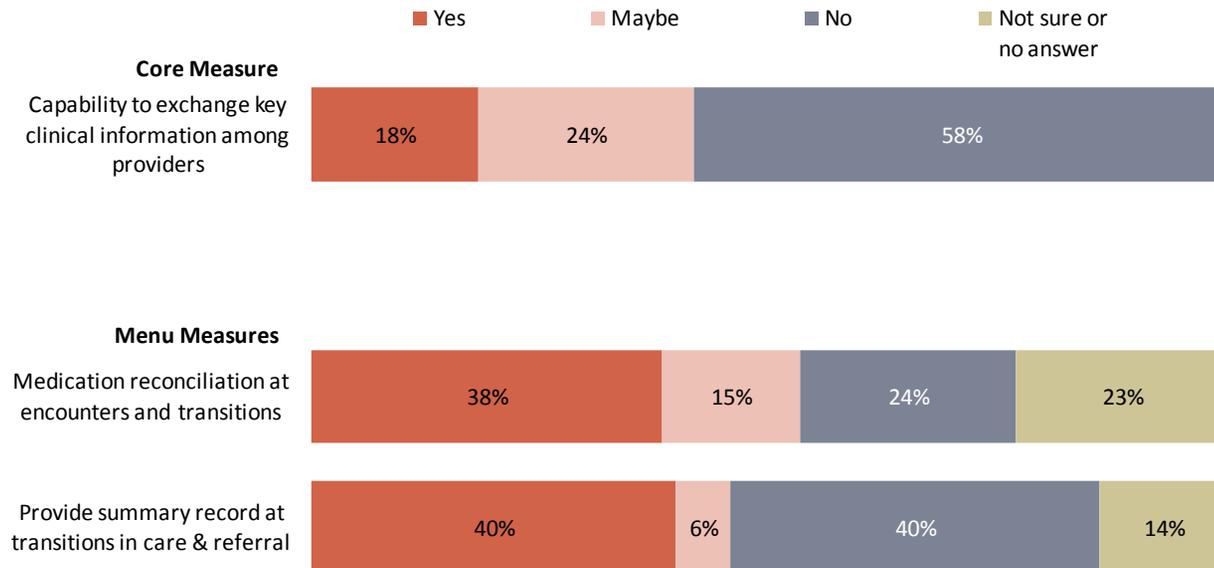
- 83% meet the requirement for listing patients by specific conditions.
- 71% meet the criteria for incorporating lab-test results into the EHR.
- 35% meet the requirement for sending reminders for needed preventive and follow-up care (19% may meet the criteria).
- 36% meet the criteria for performing drug formulary checks.

Most practices do not meet meaningful use criteria related to engaging patients and families in their health care.



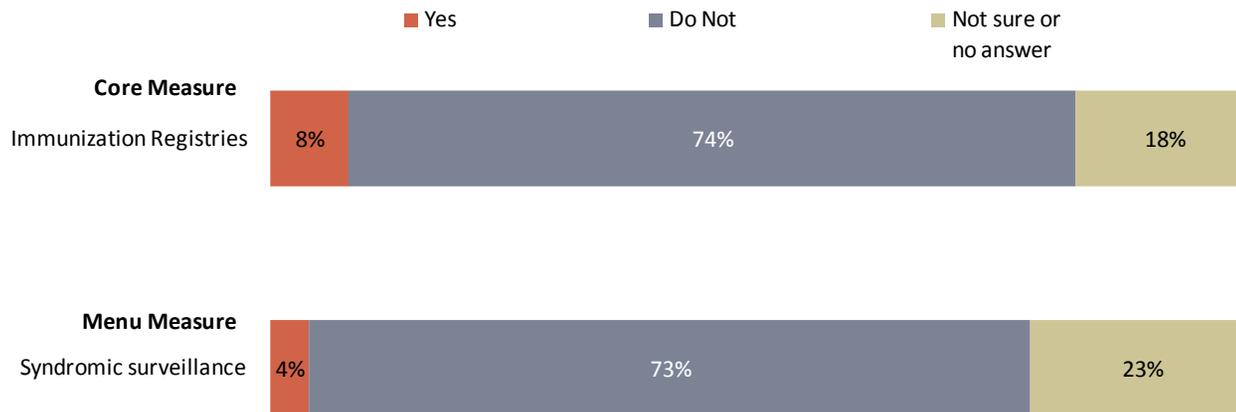
- Over a quarter of the practices meet two core measures: giving an electronic copy of their health information and giving patients a clinical summary for each office visit.
- 9% of the practices indicate that they can meet the menu meaningful use criteria of providing patients with timely electronic access to their health information.

Fewer than half of practices report that they meet core and menu meaningful use requirements related to improving care coordination.

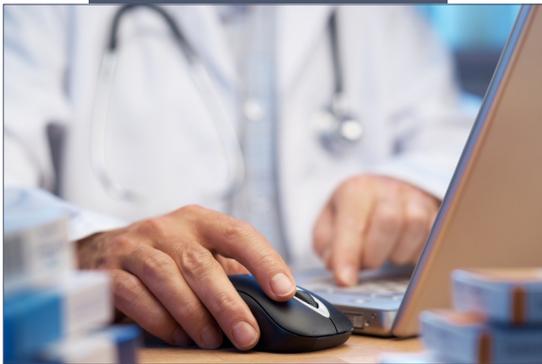


- 58% of the practices do not meet core criteria for exchanging key clinical information among providers; 18% have this capability and another 24% may.
- About half of practices meet or may meet the meaningful use menu measures aimed at improving care coordination. 38% definitely have the capacity (and another 15% may have the capacity) to conduct medication reconciliation and encounters and transitions. 40% definitely have the capacity (and another 6% may have the capacity) to provide a summary record at transitions of care and at referrals.

A small proportion of practices meet the core and menu meaningful use measures relating to improving population and public health.



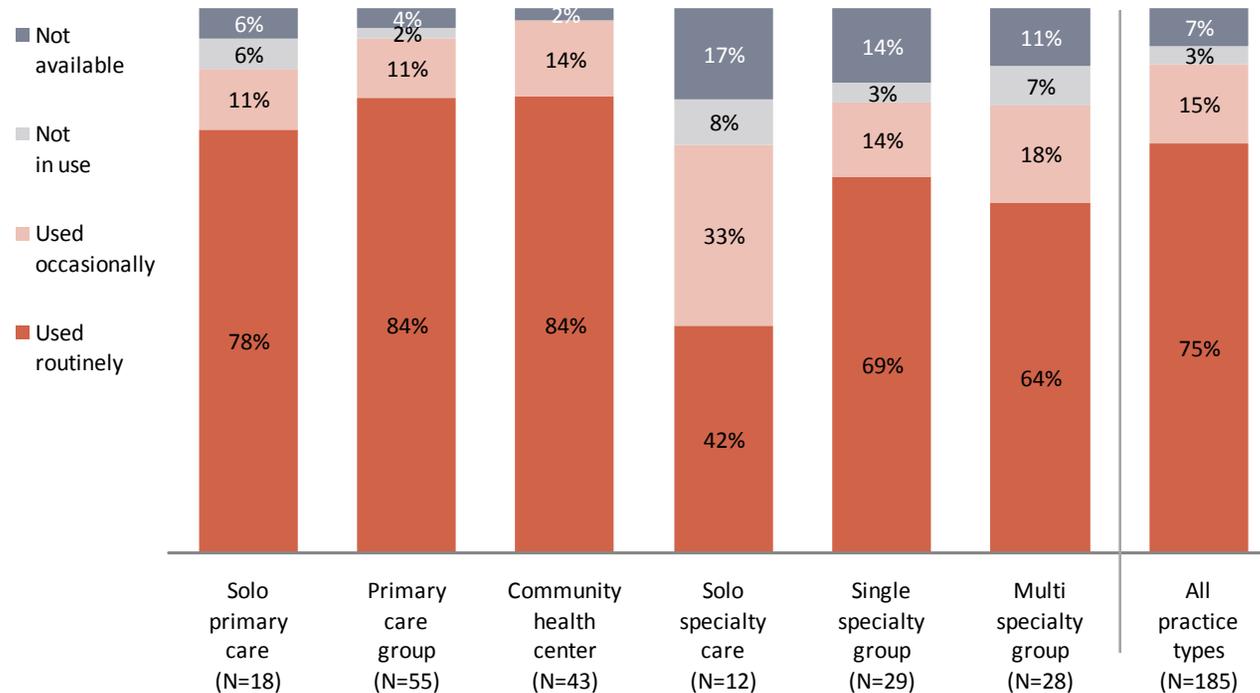
- 8% are able to meet the requirement of using their EHR to submit information to immunization registries (core criteria).
- 4% meet the criteria for sending electronic information on reportable diseases to the Maine CDC for surveillance (menu criteria).



Appendix

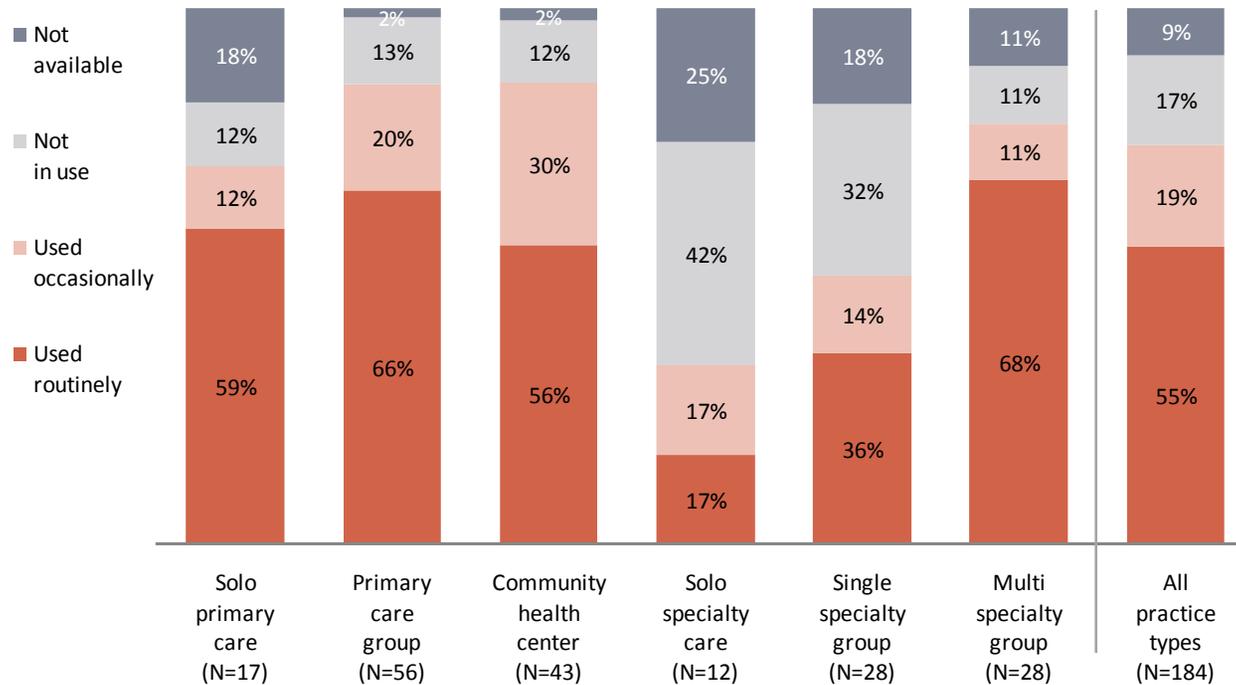
EHR Use/Clinical Decision Support Tools by Practice Type

Electronic medication and guideline alerts are used routinely by about three-quarters of all practices with EHRs.



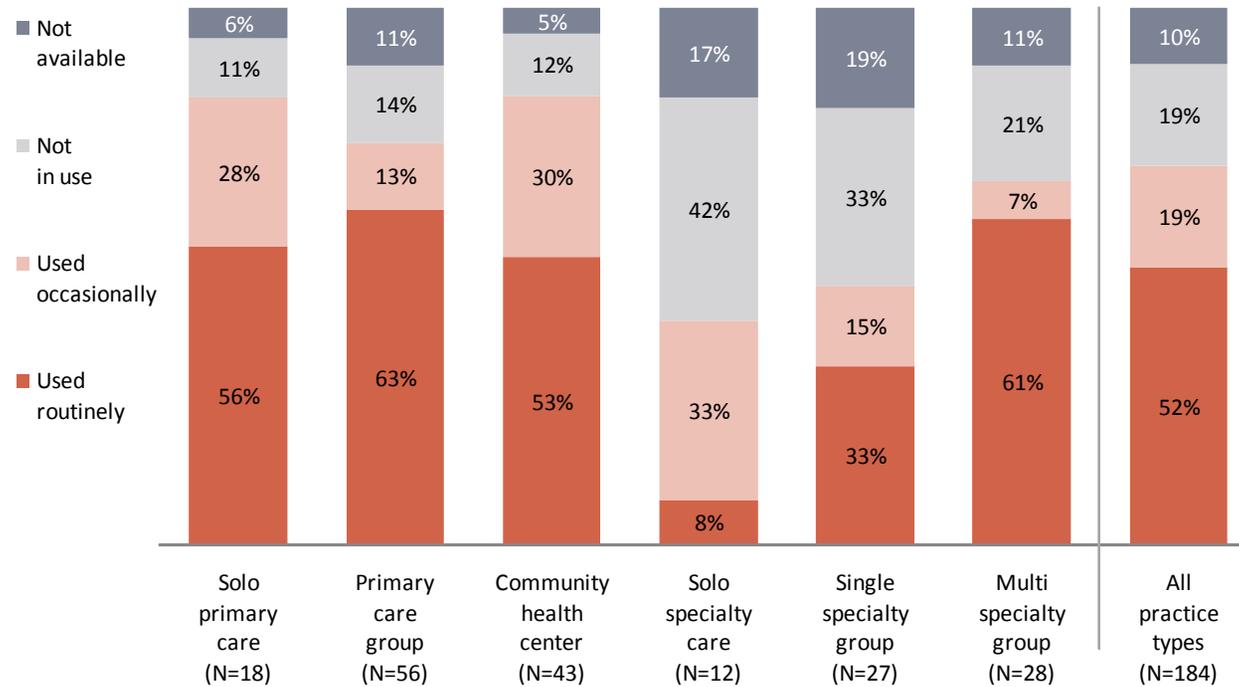
- Practices that provide primary care (solo primary care, primary care group practices and community health centers) and group practices (single specialty group and multi-specialty) are more likely to use medication and guideline alerts routinely.
- Solo specialty care practices are more likely to use medication guides and alerts on an occasional basis.

Chronic care plans are used routinely by over half of practices with EHRs.



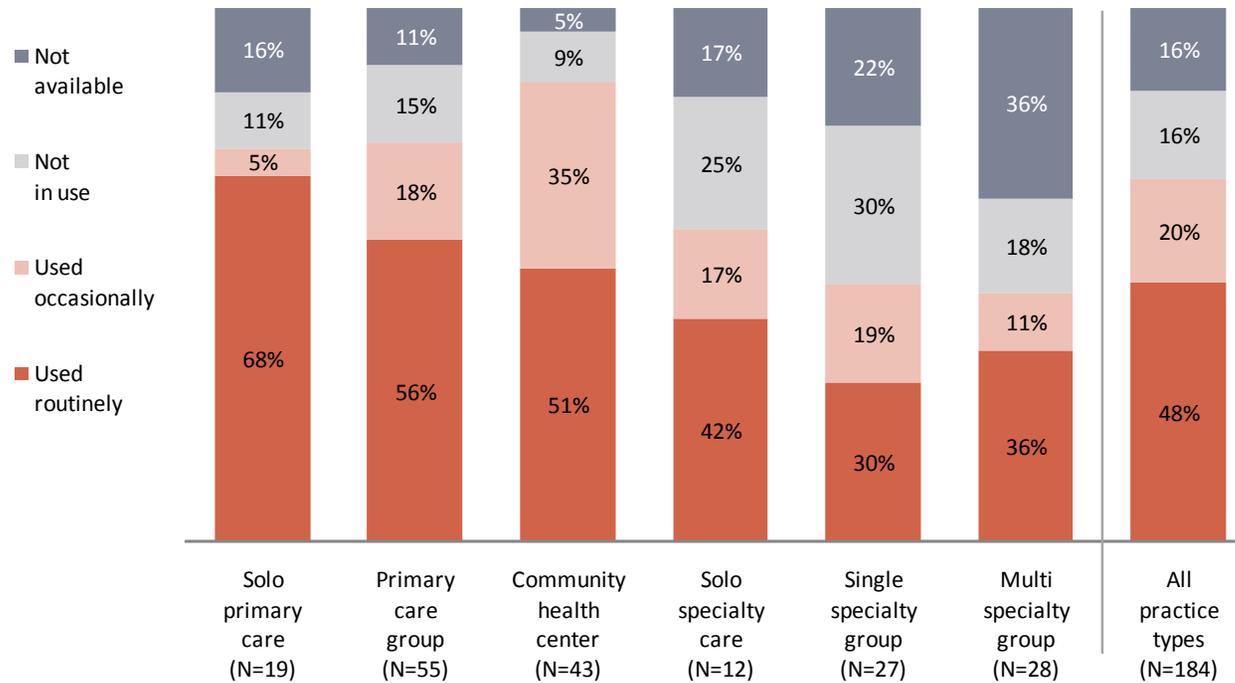
- Practices that provide primary care (solo primary care, primary care group practices and community health centers) and group practices (single specialty group and multi-specialty) are more likely to use chronic care plans.

Just over half of the practices with EHRs use them to generate patient-specific or condition-specific reminders.



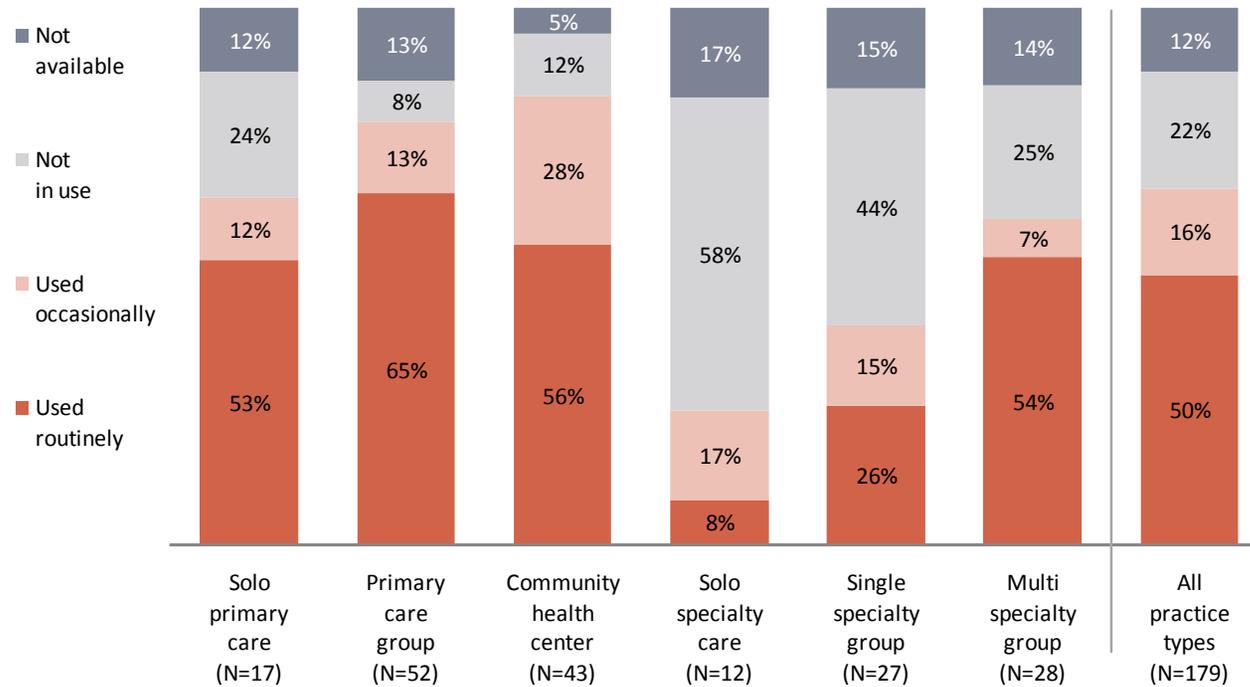
- Practices that provide primary care (solo primary care, primary care group practices and community health centers) are more likely to use this feature routinely.
- Specialty practices are less likely than other practice types to use this feature routinely.

Almost half of practices with EHRs routinely use clinical guidelines based on patient problem list, gender, or age.



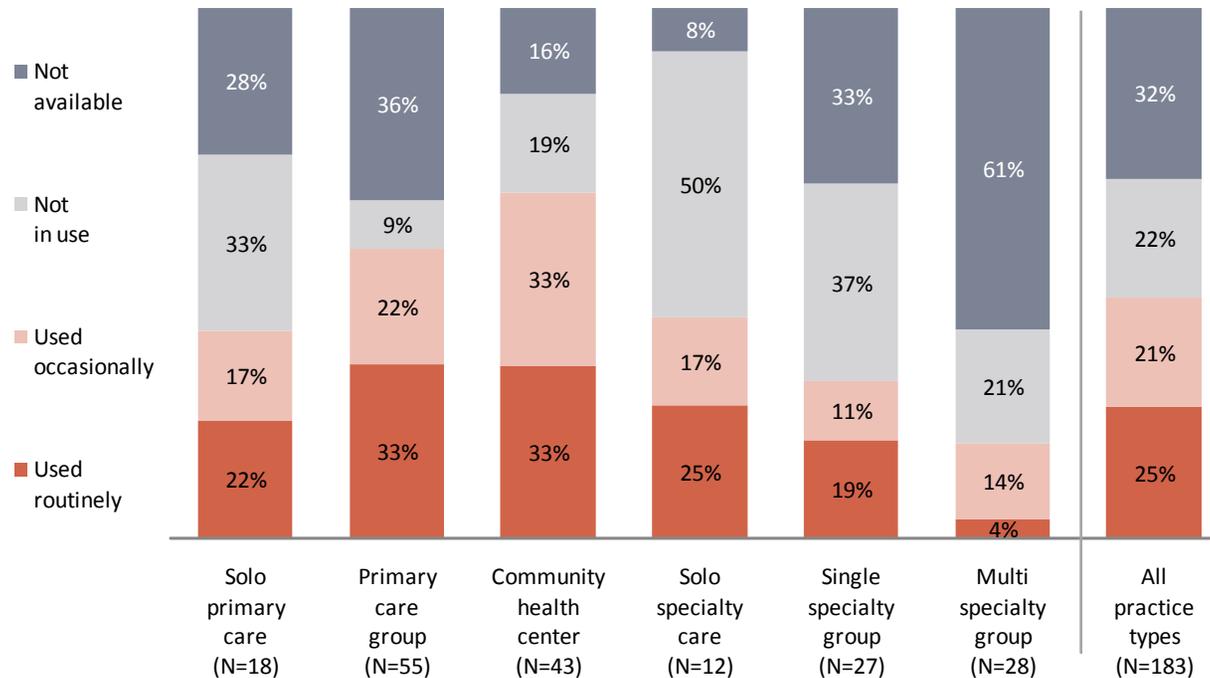
- A higher proportion of practices that provide primary care report routine or occasional use of clinical guidelines.
- Specialty care practices are less likely to routinely use electronic clinical guidelines.

Practices that provide primary care are more likely to report using their EHRs to remind patients of preventive care due.



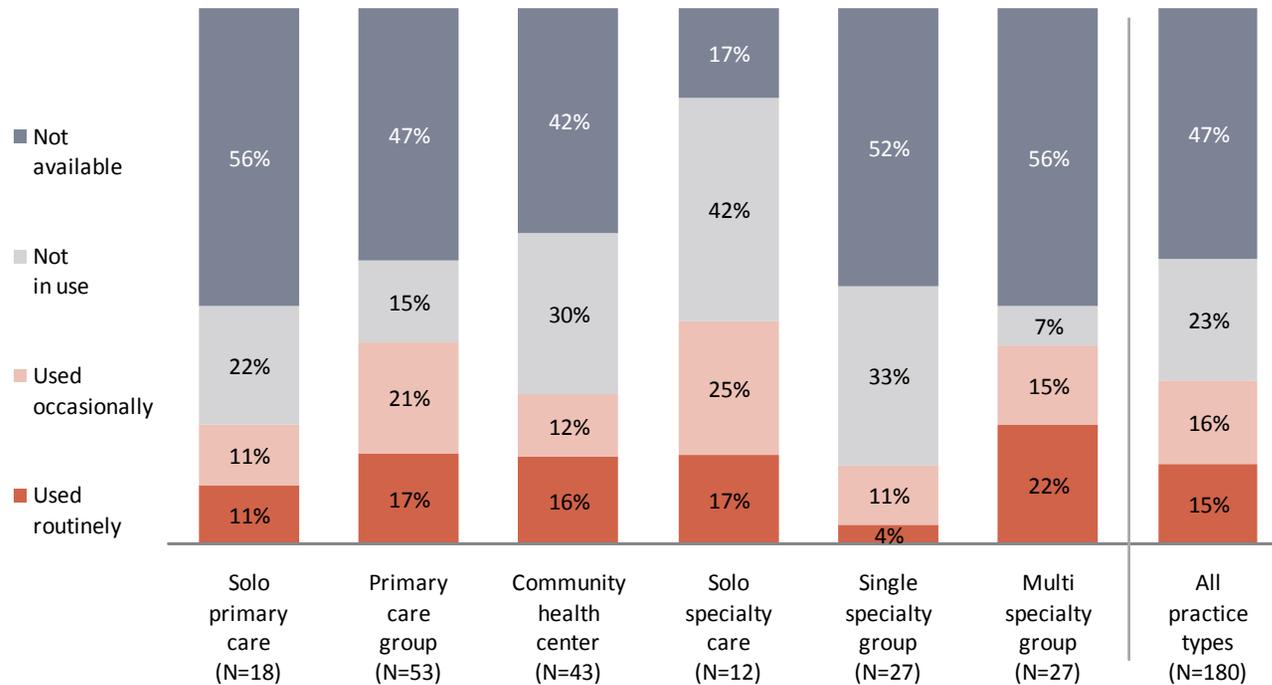
- A higher proportion of practices that provide primary care including primary care groups (65%), community health centers (56%), multi-specialty groups (54%), and solo primary care groups (53%), report routinely using their EHR to generate patient reminders for preventive care due.

A quarter of practices with EHRs routinely use their systems to automatically generate reminders for missing labs and tests.



- 54% of practices do not use their EHRs to generate reminders for missed labs and tests.
- Community health centers (33%) and primary care group practices (33%) are more likely than other practice types to report routinely generating these reminders.

Nearly three-quarters of all practices with an EHR do not use high tech diagnostic imaging decision support tools.



- A small minority of practices report routinely using high tech diagnostic imaging decision support tools.