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# 2020 Pennsylvania Health IT Environmental Scan Results

Office of Medical Assistance Programs,
Department of Human Services

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# Preface

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Health information technology – Electronic Health Records, Health Information Exchange, telemedicine, patient portals, electronic Clinical Quality Measures, and more – is continuing to change the healthcare industry in dramatic ways. More importantly, Health IT (HIT) is providing powerful tools to drive improvements in patient care and population health.

Through its 2020 Health Information Technology "Environmental Scan," the Pennsylvania Office of Medical Assistance (Medicaid) Programs (OMAP) sought to measure the degree of progress in HIT adoption experienced by Pennsylvania's healthcare providers since its 2010 baseline scan. The scan was designed to also identify the challenges and barriers that providers are facing as they seek to increase their use of electronic health records, electronic health information exchange, telemedicine, and other forms of HIT.

To gather data for the new scan, OMAP conducted a survey of office-based providers in October and November 2020 and supplemented the results with hospital statistics from the 2018 American Hospital Association (AHA) HIT Survey, as well as national HIT statistics made available by the Office of the National Coordinator for Health Information Technology (ONC.)

This presentation has been designed to report the findings of the environmental scan.

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# Executive Summary

# Summary: Overview

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## Hospitals Leading in HIT and HIE

The single most important measure of HIT advancement is the Electronic Health Record (EHR) adoption rate, or the percentage of a defined provider group that is actively utilizing an EHR. Pennsylvania's inpatient hospitals have led the way, increasing from 89% using EHRs in 2010 to 98% by 2016. In recent years, hospitals have been doing more with their EHR systems -- increasing electronic documentation and order entry, and succeeding in making dramatic increases in telehealth, medication tracking, and patient monitoring. Hospitals have also succeeded in expanding their electronic exchange of patient information. However, challenges remain. Hospitals say their top challenge with health information exchange (HIE) is lack of an EHR in practices with which they want to exchange information.

## Office-based Practices Advancing

Office-based healthcare practices have lagged behind hospitals in EHR adoption, but there has been significant progress in the last ten years. These practices were the focal point of OMAP's 2020 HIT "environmental scan" which was conducted via an in-depth survey. The practices surveyed were not limited to physical health physician practices. Instead, OMAP cast a wide net – including practices of dentists, psychologists, psychiatrists, chiropractors, therapists (physical, occupational, respiratory), and optometrists, as well as facilities like labs, imaging centers, pharmacies, and nursing homes. To reach the goal of a complete medical record for each patient, treatment information from the full spectrum of providers needs to be shared.

# Summary: Statewide Survey

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## Survey Response

OMAP received valid surveys from 2,370 unique practices representing (employing) 23,185 individual practitioners. The surveys included 31 from nursing home organizations representing a total of 199 campuses. Although 60% of the surveys came from solo practitioners, the 40% that were from group practices account for 94% of all individual practitioners represented.

Each healthcare practice was assigned to one of eleven high-level "Care Areas" based on its provider type. (See slide #140.) Traditional medical physical health categories (primary, pediatric, and specialty combined) accounted for about a third (34.5%) of the surveys and two-thirds (65.7%) of the practitioners represented. Behavioral health (20.5%), dental (15.3%), rehabilitation (9.0%) and chiropractic care (8.9%) accounted for over half the surveys (53.7%) but less than a third (30.2%) of practitioners.

## EHR Adoption Varies Considerably

The 2020 survey, like the last one conducted by OMAP (2016), reveals very different EHR and HIE rates depending on the type of practice. Group practices have a higher EHR adoption rate than solo practices. Among group practices, the ones with the most practitioners, as well as those owned by a hospital or healthcare system, have a higher adoption rate than small practices and those independently owned. Physical health physician practices have a high adoption rate while behavior health practices have a much lower rate. Practices of provider types included in the Medicaid Promoting Interoperability (PI) Program's definition of "Eligible Professionals" (EP) have a higher EHR adoption rate than others, due (at least in part) to the federal grants that have been awarded through the PI program over the last decade to qualifying EPs to help them acquire and implement EHR systems. ("Eligible Professionals" include physicians, nurse practitioners, certified nurse-midwives, dentists, and physician assistants.)

# Summary: HIT Progress

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## Progress Over Ten Years

The 2020 provider survey indicates that EHR adoption for office-based EP-type practices (a mix of group and solo practices) was 68%, up from 58% in 2010. (The true increase is likely greater because the 2010 survey sample was very small and composed of a much different provider type mix, leading to an adoption rate that might be overstated.) However, this average practice adoption rate of 68% is somewhat misleading. Those practices that use EHRs employ 96% of all practitioners represented by the EP-type practices that answered the survey.

Many – but not all -- EHRs are ONC-certified, meaning that they meet the Office of the National Coordinator for Health Information Technology's "meaningful use" standards. Nearly 58% of surveyed EP-type practices, representing 94.3% of individual practitioners, use ONC-certified EHRs. An additional 10% (representing 1.7% of providers) use a non-certified EHR, for a total of 67.6% of practices and 96% of practitioners using an EHR of some sort.

When non-EP-type practices are included, overall EHR usage by practitioners employed is still very high. In fact, 85.8% of the 23,187 individual practitioners represented by the 2,370 valid surveys received in 2020 are employed by practices using certified EHRs, and another 6.7% of them are using non-certified EHRs, for a total of 92.5% of office-based practitioners using EHRs.

# Summary: EHR Adoption

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## EHR Adoption by Care Area

Certified EHR adoption varies significantly among different categories of office-based practices, with medical diagnostic services reporting the highest rate (100%), followed by long-term care facilities (82%), pediatric care (80%), specialty medical care (79%), and primary medical care (78%). The provider categories least likely to have adopted certified EHRs are behavioral health (21%), dental care (21%), pharmacies (32%), rehabilitation care (physical therapists, etc.) (38%), and chiropractic care (45%.) However, almost 24% of rehabilitation care practices, 22% of behavioral health care practices, 22% of dental practices, 17% of pharmacies, 16% of long-term care facilities, and 9% of chiropractors are using non-certified EHRs.

## Physicians' EHR Usage

Based on its 2020 survey, OMAP estimates that 78% of office-based physician practices in Pennsylvania are using EHRs. These practices account for 98% of the individual practitioners represented by all office-based physician surveys, which compares favorably to the national rate of 86% reported by the ONC (based on 2017 data – the most recent available).

# Summary: EP-type Practices

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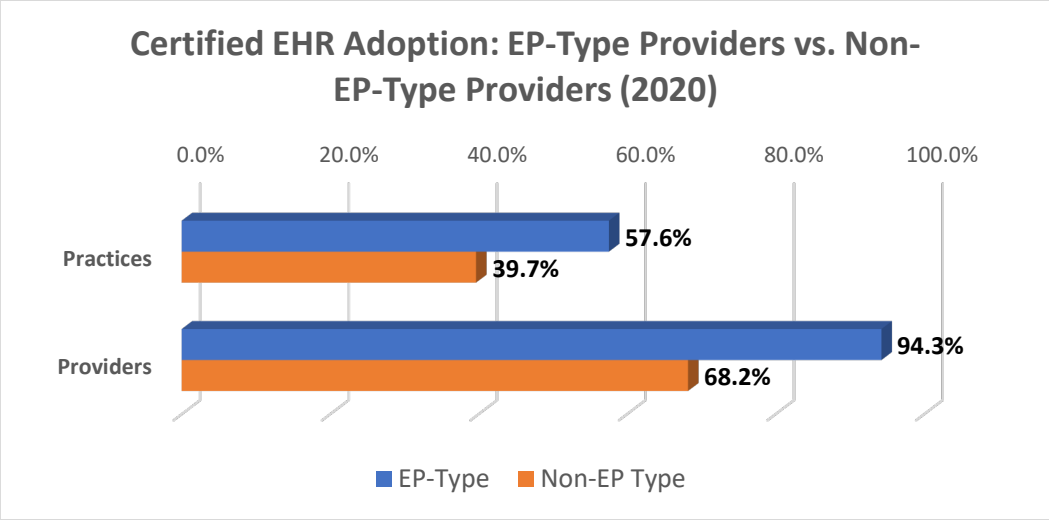
## EHR Adoption in EP-type Practices vs. Others

Most of the provider types eligible for the Medicaid and/or Medicare PI programs are, as suspected, those with the highest rates of EHR adoption, while those with the lowest rates – notably behavioral health and long-term care, have not had the opportunity for federal incentive funds through these programs.

As seen in the graph below, about 58% of Medicaid EP-type practices are using certified EHRs, while only about 40% of other surveyed types of practices are doing so.

However, for both groups, the practices using certified EHRs are larger, and account for a much larger percentage of individual practitioners – 68% of non-EP type, and 94% of EP-type practitioners.



# Summary: Barriers

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## Barriers to Adopting EHRs

For practices that have not adopted an EHR system, cost ("lack of capital resources to invest in EHR") is the biggest concern by far. The next-biggest reason is from practitioners who plan to retire soon and believe they will not see return on their investment. Many others are not convinced that EHR usage will result in benefits to them or their patients, and a number cite concerns that EHR implementation will overtax their staff, disrupt their business processes, or compromise patient privacy and/or security.

## Growing EHR Satisfaction

As EHR systems have become more refined, evidence suggests greater user satisfaction. Practices that have been using an EHR were asked to indicate the top 3 barriers to maximizing EHR usage and optimization in their organization, but more practices (31%) responded that they are not experiencing any such barriers than those citing a particular barrier. Additionally, only 7% of practices (employing just 3% of practitioners) plan to switch EHR systems within the next 18 months, and the top reason provided was that the practice was merging with another. In 2016, 11% of practices, employing 12% of practitioners, planned to switch EHR systems.

# Summary: EHR Features, Use

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## EHR Features and Usage

Practices report that the features built into EHRs have not changed much between 2010 and 2020, but more practices have access to public health reporting from within their EHRs (27% vs. 12% in 2010.) Practices are also using that functionality more. In 2010, only 11% said they used the public health reporting function most or all of the time. In 2020, the number almost quintupled to 52%. More practices are also using their EHR to view imaging results. Eighty percent are doing so most or all of the time in 2020, compared to 47% in 2010.

Usage of prescription features in general increased significantly between 2016 and 2020. In particular, E-prescribing of controlled substances has increased dramatically since 2016. Nearly half (46%) of EP-type practices (employing 72% of EP-type practitioners) said they e-prescribed these drugs in “all or most” cases in 2020, as compared to just 7% four years prior. Virtually all (98%) of the practitioners employed by these practices are using a certified product to e-prescribe controlled substances.

# Summary: HIE (1 of 3)

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## Health Information Exchange (HIE)

Overall, electronic exchange of patient information for office-based practices still takes second-place to use of traditional (manual) methods, but most practitioners are employed by group practices that are employing HIE most or all of the time.

Electronic methods for sending, receiving, or querying patient data (usually via EHR) ranges from a low of 22% for radiology images to a high of 39% for medication history. Faxing remains the single most dominant method, ranging from 31% to 48%, with its greatest use related to summaries of care, radiology reports and lab results. Pennsylvania's Health Information Organizations (HIOs) were used by 2.2% to 3.1% for these functions, representing a slight increase from 2016.

EP-type practices are much more likely to send patient data electronically to facilities outside of their organizations, especially to pharmacies and labs.

The percentage of EP-type practices with the capability to send patient data electronically to other facilities has increased dramatically since the 2010 provider HIT survey was conducted. The percentage able to send data to a hospital emergency department or radiology/imaging center has tripled, and roughly twice as many can send data to a pharmacy, other outpatient practice, or hospital emergency department. The portion able to send data to a lab has increased from about a third to about half.

# Summary: HIE (2 of 3)

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## Health Information Exchange (HIE) (continued)

More than 40% of practices have the capability to receive patient data from labs and pharmacies, but less than a quarter of them receive it electronically most or all the time. Only about a third of practices can receive data electronically from long-term and post-acute providers and behavioral health practices, with just 4% and 3% receiving such data always or nearly always, respectively. receiving from radiology/imaging centers, physical health outpatient practices, and hospitals.

EP-type practices report more capability (40% to 60%) than non-EP types (27% to 34%) to receive patient data electronically from the specified source types, and more usage (up to 35% receiving data this way most or all the time, vs. up to 18%.)

Among the respondents that use electronic methods to send information to other providers or health organizations, the most popular method is to use Direct secure messaging from within their EHR. HIOs are rarely used. For others, the most-used methods are fax, mail, and email. Among hospitals, nearly 59% reported in 2015 that their primary inpatient EHR is used to exchange patient health information, and in 2018, 54% of Pennsylvania hospitals indicated that the exchange of information across different vendor platforms was their most difficult challenge.

Both the 2016 and 2020 surveys reveal that practices most frequently receive patient data electronically from labs, pharmacies, radiology/imaging centers, and hospitals (other than the ED), and least frequently from long-term care/post-acute care providers and behavioral health practices. The percentage of practices receiving data electronically “always or nearly always” did not increase in 2020 vs. 2016.

# Summary: HIE (3 of 3); HIOs

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## Health Information Exchange (HIE) (continued)

Hospitals report a higher degree of HIE than office-based practices. As of 2015, depending on the type of data (patient demographics, lab results, medication history, radiology reports, and clinical care record), 74% to 77% of hospitals could exchange it electronically with other hospitals inside their health system, and 58% to 69% could exchange it electronically with hospitals outside their health system. More hospitals (82% to 89%) were able to exchange patient data electronically with ambulatory providers in their own health system and outside (70% to 82%.) (More recent data for PA hospitals is not available.)

## Health Information Organizations

Most practices (87%) are not participating with any HIO, but the 13% that do account for 63% of the practitioners represented, indicating that large practices are more likely to use an HIO. Over half (56%) of practices indicate that they are using their EHR vendor's HIE rather than an HIO. Among those which are using a state-certified HIO, HSX and KeyHIE are the most popular.

Office-based practices that are not using the services of an HIO indicate that the number one reason is that they are not familiar with HIO services. Cost concerns and lack of staff expertise using health IT are the number two and three obstacles, respectively. Meanwhile, HIO usage among hospitals is much more common, with 54% actively exchanging data in at least one HIO/HIE (as of 2015). Fourteen percent indicate that there is no HIO operational in their area.

# Summary: Internet Service

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## Internet service availability and adequacy

When the first EHR systems were being implemented, the availability and quality (sufficient bandwidth) of internet service was an issue for some areas of Pennsylvania, particularly in rural counties. Now, virtually every practice has access to internet service, though a few still think they do not need it, and some would like to have more bandwidth ("speed") or better reliability.

Most practices (84%) indicated their offices' internet bandwidth is sufficient for their needs, compared to just 44% in 2010. Three percent of practices have no internet connection in their offices. Of these practices, 58% said they have no need for the internet; 7% (down from 16% in 2016) felt the cost of internet service is too high; and two practices said there is no internet supplier at their location.

Among the 214 practices (representing 1,377 practitioners) that reported why their offices' internet services are slow, 40% said faster service is not available at their locations and 37% indicated it is because the cost for faster service is too high.

# Summary: Telemedicine

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## Telemedicine

Since the 2016 environmental scan, there has been a huge increase in the percentage of practices offering telemedicine. The COVID-19 pandemic is believed to be a major driver of the growth. In 2016, only 7% of EP-type provider practices (representing 49% of practitioners in surveyed EP-type practices) had adopted HIT for telemedicine. By 2020, this increased seven-fold to 50% of EP-type practices, representing 93% of practitioners. Non-EP-type practices also experienced seven-fold growth over 2016, and these practices represent 75% of the non-EP-type practitioners.

Eight percent of the practices not offering telemedicine plan to add it within a year. This is twice the rate noted in 2016. Of the practices not offering telemedicine, 45% do not see a need to provide it, 30% are unsure of the value/benefit, and 22% have cost concerns. Additionally, 22% have concerns about reimbursement for telemedicine services. (It should be noted that some of the surveyed provider types, such as chiropractors and acupuncturists, are not suitable for providing treatment via telemedicine, and their responses are included in the results shown above.)

# Summary: Patient Engagement

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## Patient Engagement via HIT

In the 2010 survey, only 22% of (EP-type) practices provided information to patients electronically. The 2020 survey indicates that rate has almost doubled in ten years to 41% – and 74% of EP-type practitioners are employed by those practices. More EP-type practices (59%, employing 26% of practitioners) still use a manual process. Still, EP-type practices are far more likely than non-EP types to use certified HIT to share data with patients (38% vs. 16%.) Most (78%) non-EP-type practices employ a manual process, and only a fifth use HIT (16% certified and 6% non-certified.)

Overall, about 39% of all surveyed practices offer an online patient portal, and 73% of individual providers work at these practices. However, there is a stark difference between EP-type and non-EP-type practices. Seventy-three percent of EP-type practices (up from 58% in 2016) offer a patient portal (representing 95% of providers in surveyed EP-type practices), but only a quarter of the non-EP-type practices offer a portal.

Of the practices that offer an online patient portal, 88% indicated their portal is integrated into their EHR system. Three-quarters of practices offering a patient portal also offer an “app” that enables patients to access their online patient portal via a mobile device (smartphone, tablet, etc.) to access the portal. This is up from 59% in 2016 – an increase of 16 percentage points in four years, perhaps aided by the standardization of FHIR 4 for APIs.

More than a quarter of practices are using certified HIT to send patient reminders, to provide patients access to their medical information, and for secure messaging capability. But overall, most patient engagement activities are still performed most often by means of a manual process.

# Summary: Key Take-aways

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## Key Take-aways

- Adoption of HIT/E by Pennsylvania's healthcare providers has increased significantly since 2010, with inpatient hospitals leading the way. Among office-based providers, physical health physicians are the leaders in EHR usage and HIE, while other categories of care, especially behavioral health are trailing.
- Legacy modes of communication between providers (particularly faxing) continue to have a stronghold among office-based providers, but electronic exchange is increasing as compatibility issues are addressed, and as more providers become comfortable with it. HIO/HIE participation by Pennsylvania's hospitals is much greater than among office-based providers.

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# Survey Findings

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Survey Findings

# EHR Adoption & Details

# EHR Adoption

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Perhaps the most important information to be gleaned from the survey is the percentage of practices that have adopted EHR systems, and how that number compares to the results from the baseline (2010) survey.

Specific questions the survey sought to answer include:

- What percentage of practices (and practitioners) are using an EHR (certified or non-certified)?
- Of those using an EHR, what percentage are using an ONC-certified EHR?
- What provider types are most likely to use a non-certified EHR?
- What is the EHR adoption rate for each provider type surveyed?
  - Which provider types have the highest adoption rates? Why?
  - Which provider types have the lowest adoption rates? Why?
    - What are the barriers to adoption for THESE provider types?
  - Which facility types have the highest adoption rates? Why?
  - Which facility types have the lowest adoption rates? Why?
    - What are the barriers to adoption for THESE facility types?

# Making a Fair Comparison

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## About the Baseline Scan:

The baseline environmental scan of Pennsylvania's office-based providers targeted Medical Assistance (Medicaid) practitioners, many from large health systems that were early EHR adopters. The survey participants were predominantly Medicaid EHR Incentive Program Eligible Professionals (EP) – not a broad spectrum of healthcare providers as in the 2016 and 2020 surveys.

**To compare 2020 results to 2010 results, Medicaid EP provider types will be used.**

- "Eligible Professional" is a federally-defined category of provider for the Medicaid and Medicare EHR Incentive Programs
- **The Medicaid EP* category includes:**
  - **Physicians** (primarily doctors of medicine and doctors of osteopathy)
    - Includes pediatricians
  - **Nurse practitioners**
  - **Certified nurse-midwives**
  - **Dentists**
  - **Physician assistants** who furnish services in a Federally Qualified Health Center or Rural Health Clinic that is led by a physician assistant

*The *Medicare* EP category is slightly different. It adds podiatrists, optometrists, and chiropractors, but does not include nurse practitioners, certified nurse-midwives, or physician assistants.

# Making a Fair Comparison

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To qualify for the Medicaid Promoting Interoperability (PI) Program (formerly the EHR Incentive Program), a provider is also required to meet a specified Medicaid patient volume, and physician assistants are only eligible if practicing in a Federally Qualified Health Center or Rural Health Clinic that is led by a physician assistant.

- However, it is not possible to accurately determine which survey respondents meet these additional requirements, and for our purposes, it is not necessary, since the focus here is on the provider types.
- **Therefore, certain results will be filtered by "EP Types" which will simply refer to all surveys from provider types eligible for the Medicaid PI Program**

# EP-type Practices by Care Area

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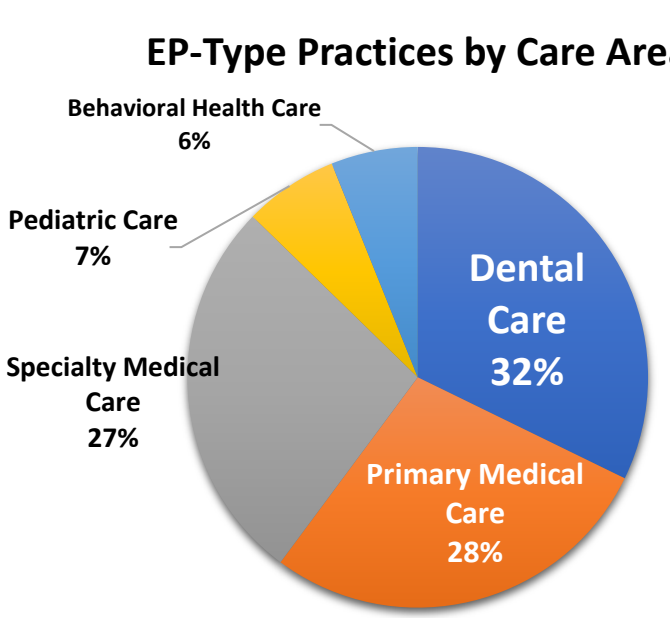
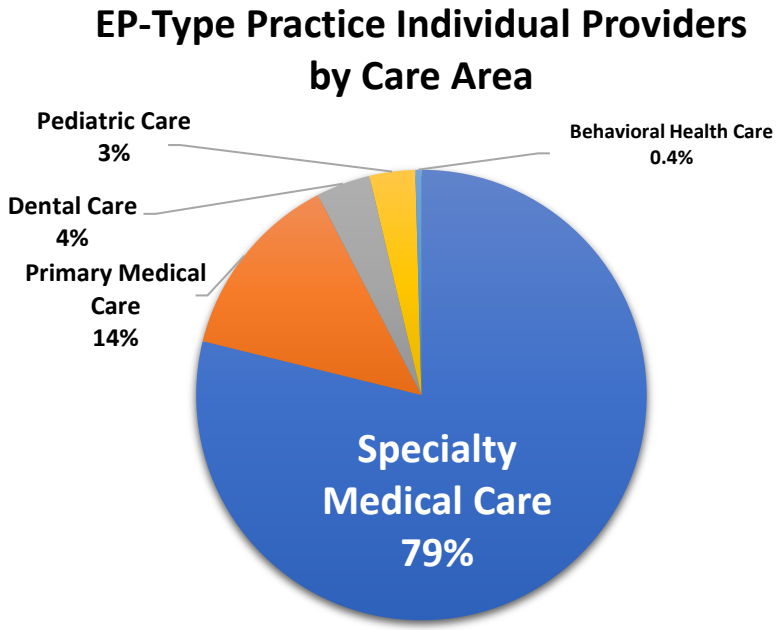
- Dental care practices comprised nearly a third of all EP-type practice surveys, followed by primary medical care at 28% and specialty medical care at 27%
- However, individual practitioners represented by the EP-type practices in the specialty medical care area comprised 79% of the total, followed by primary medical care at 14%. Dental care, the area with the most surveys, accounts for only 4% of EP-type practice practitioners.



# Payor Mix of EP-type Practices

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Within EP-type group practices, 13% percent of practices reported that Pennsylvania Medicaid pays for 50% to 100% of their patient visits. This is a considerably higher rate than the 8% for all surveys. Additionally, 26% indicated that they have no Medicaid-paid visits, which is much lower than the 47% for all practices.

535 practices entered a narrative comment for the "Other" response, with 58% mentioning "self-pay (cash)", and 14% mentioning auto insurance/workers' compensation/personal injury payments. Remaining "other" sources included military insurance, Veterans' Administration, correctional facilities, county funds, grants, direct employer purchase, charity, etc.

| Payor | 0% | 1-19% | 20-29% | 30-49% | 50-100% | Unknown | Grand Total |
|---|---|---|---|---|---|---|---|
| PA MA | 26% | 33% | 14% | 7% | 13% | 7% | 100% |
| OOS MA | 71% | 18% | 1% | 0% | 0% | 9% | 100% |
| CHIP | 39% | 45% | 4% | 2% | 0% | 10% | 100% |
| Medicare | 24% | 16% | 12% | 28% | 15% | 6% | 100% |
| Commercial Insurance | 3% | 10% | 12% | 31% | 39% | 5% | 100% |
| Other | 21% | 41% | 10% | 5% | 7% | 16% | 100% |

# EP-type Practice Ownership

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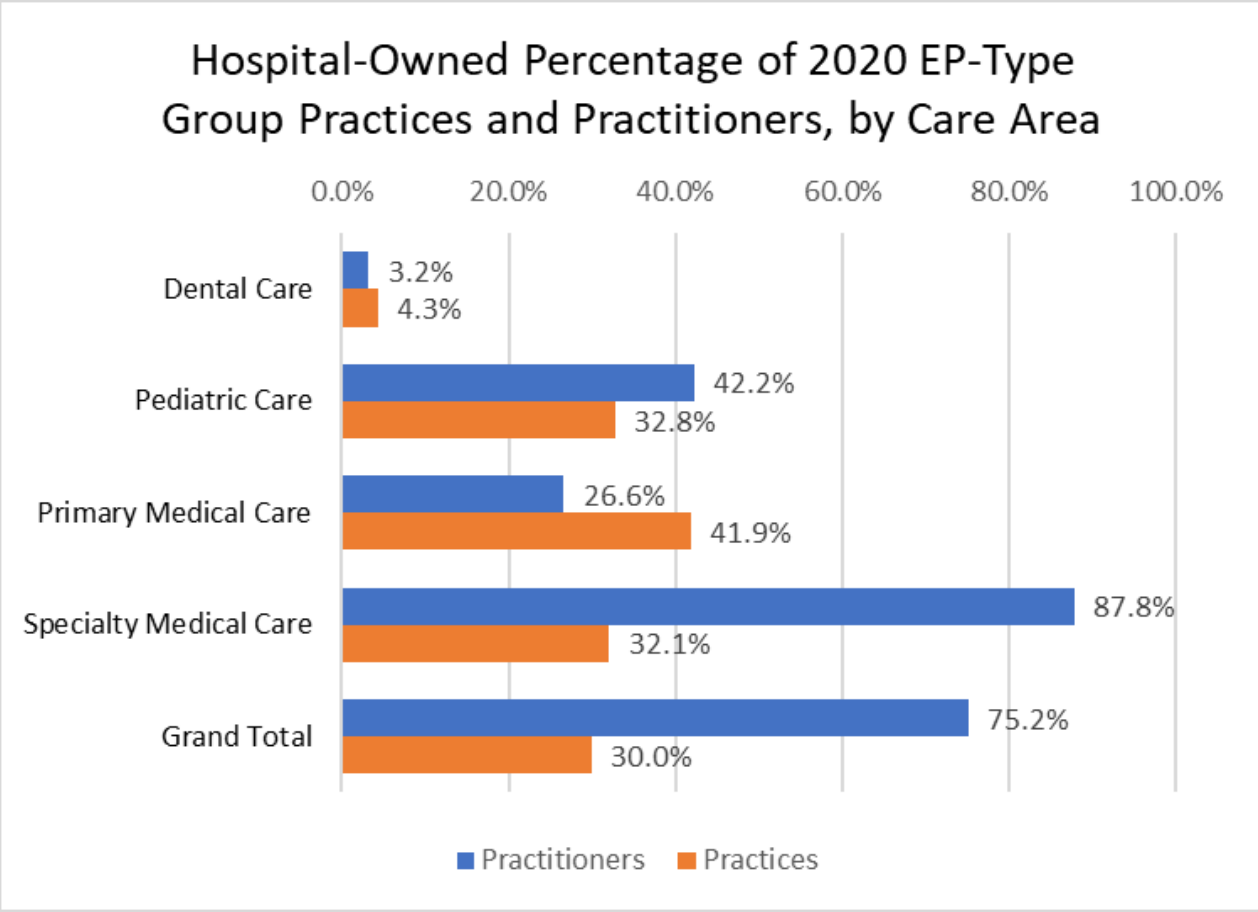
EP-type group practices are more likely than non-EP-type to be owned by a hospital/ health system.

Overall, 30% of EP-type group practices are “owned” and they represent 75.2% of the practitioners in this group.

Health-system owned practices have higher EHR adoption, likely due to the system providing an EHR for its practices.



# EHR Adoption – Comparisons

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## Group practices are much more likely to use EHRs than solo practices

When EHR adoption rates are broken out by solo vs. group practices, there is a stark contrast between the two.

- Nearly 69% of group practices are using certified EHRs, compared to only 34.6% of solo practices.

## EP-type practices are much more likely to use EHRs than other practices

When each category is further broken into EP-type providers and non-EP-type providers, another stark difference is observed.

- Among EP-type group practices, 78% have adopted certified EHRs vs. 57% for other group practices.
- The difference between EP-type and non-EP-type solo practices is also evident: 40% (certified EHR adoption rate) among EP-types vs. only 31% among other solo practices.

See the charts on the next two slides for EHR adoption in the sub-groups shown in the table at right:

| | Solo | Group | All (Solo & Group) |
|---|---|---|---|
| EP-type | ✓ | ✓ | ✓ |
| Non-EP-type | ✓ | ✓ | ✓ |
| All (EP-type & Non-EP-type) | ✓ | ✓ | ✓ |

# EHR Usage by Type of Practice

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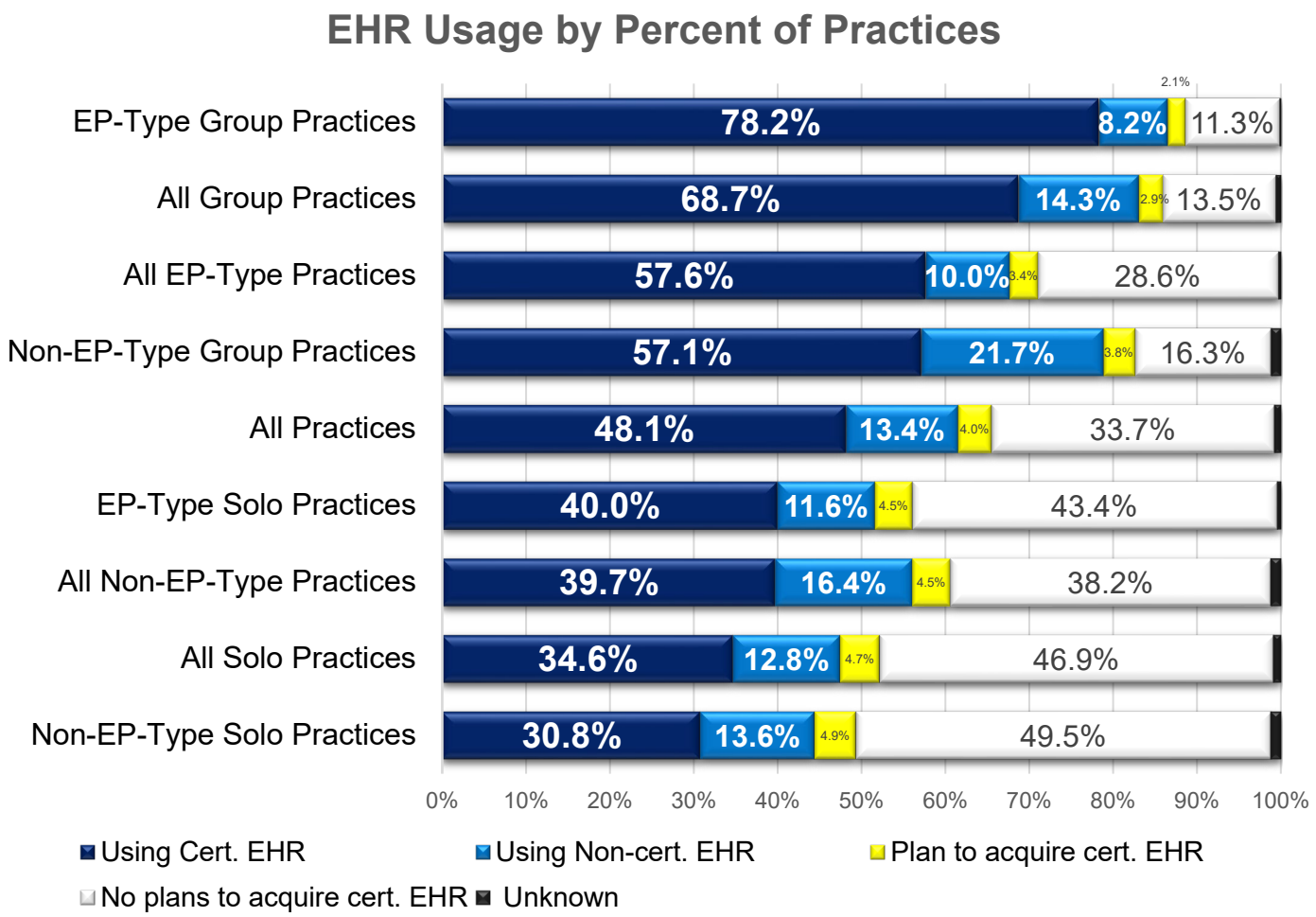
*EP-type group practices have the highest rate of certified EHR usage at 78.2%.*

*Non-EP-type solo practices have the lowest rate at 30.8%, and fewer than 5% of all solo practices have plans to acquire a certified EHR.*



# EHR Usage by Type of Practitioners

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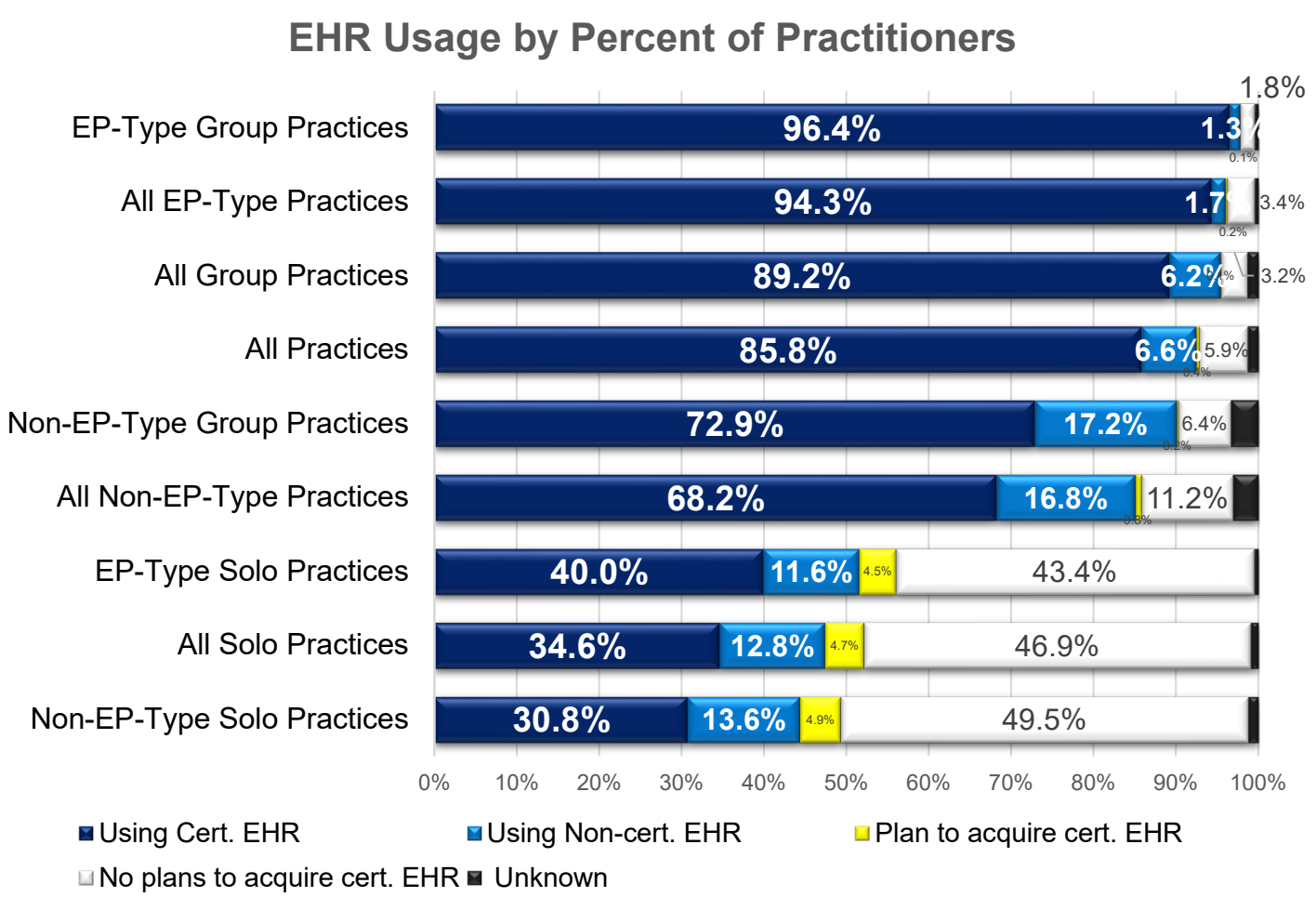
*Nearly all (96.4%) of practitioners in EP-type group practices use certified EHRs and 1.3% use non-certified EHRs for a total of 97.7%.*



# EHR Usage, 2020 vs. 2010

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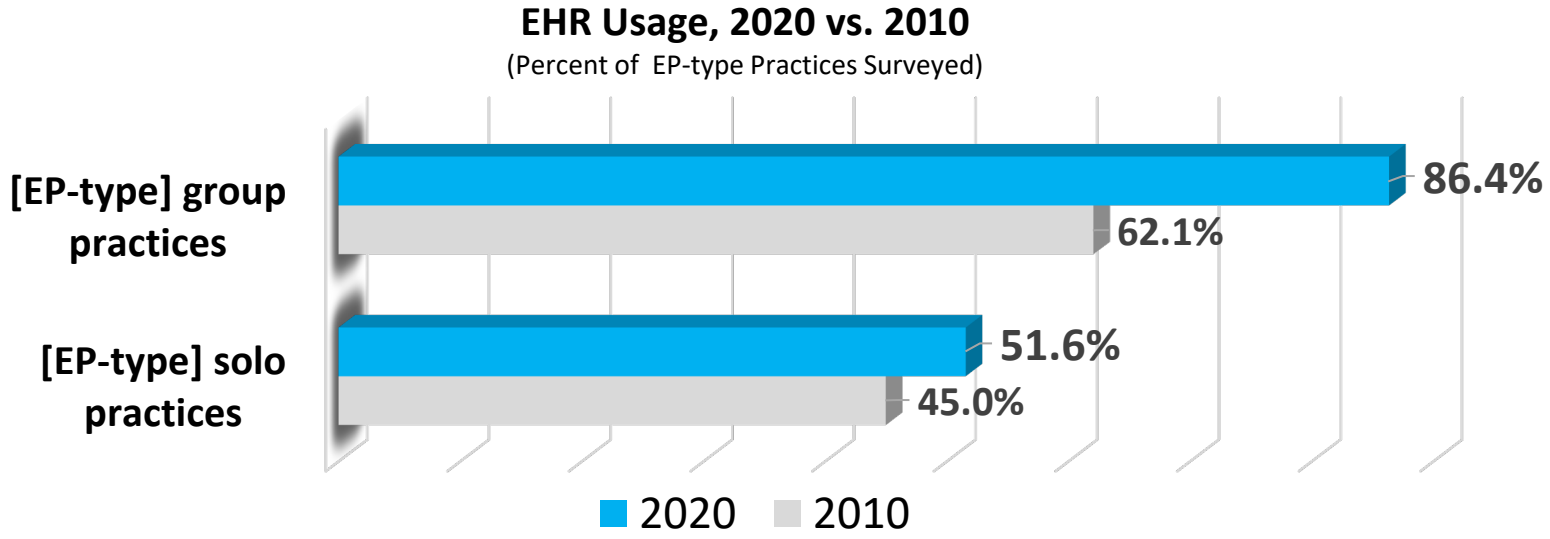
While significantly more practices use EHRs than in 2010, the comparisons shown below likely understate the progress. Pennsylvania's baseline HIT environmental scan of office-based practices (2010) included a very small sample (107 surveys that could be identified as "group" or "solo"), as compared to 2,370 surveys in 2020, and the percentage of group practices was much higher in 2010 (81.5% vs. 40% in 2020). Group practices have a much higher rate of EHR adoption.)



# EHR Usage, 2020 vs. 2010

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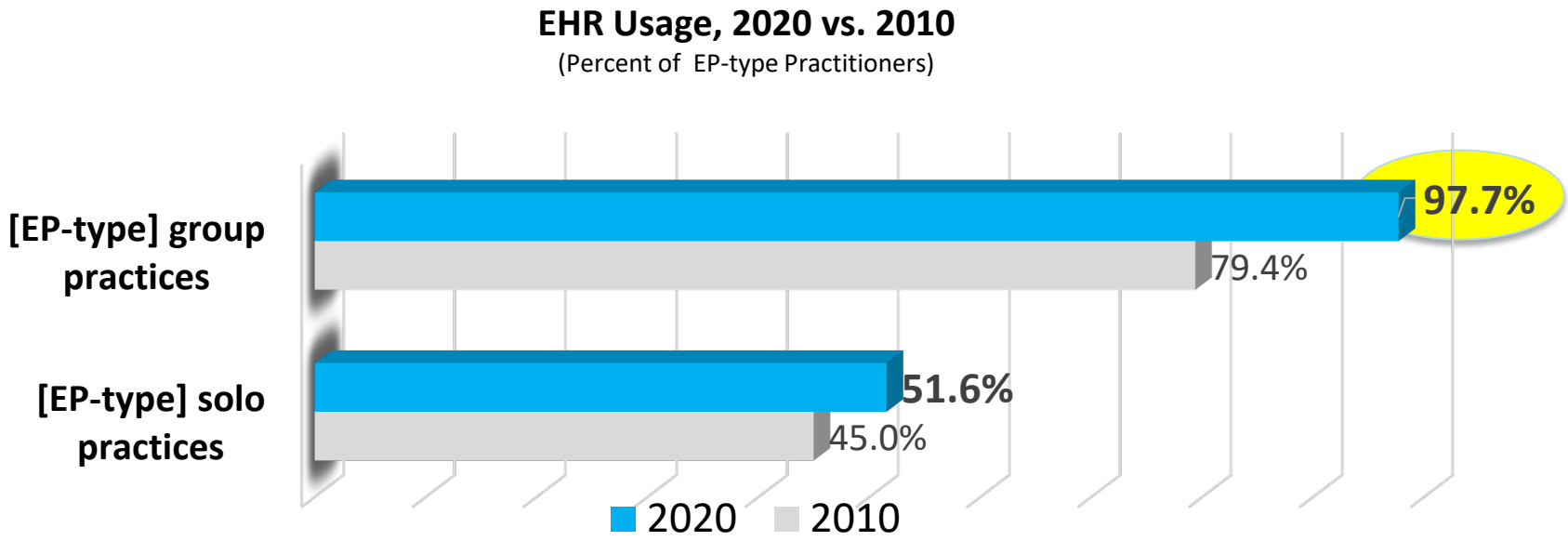
Progress with EHR adoption is more impressive when measured by the percentage of practitioners using EHRs in 2020 vs. 2010. Nearly all practitioners employed by EP-type group practices are using EHRs, while only about half of solo EP-type practitioners are using EHRs.



# EHR Usage – All Provider Types

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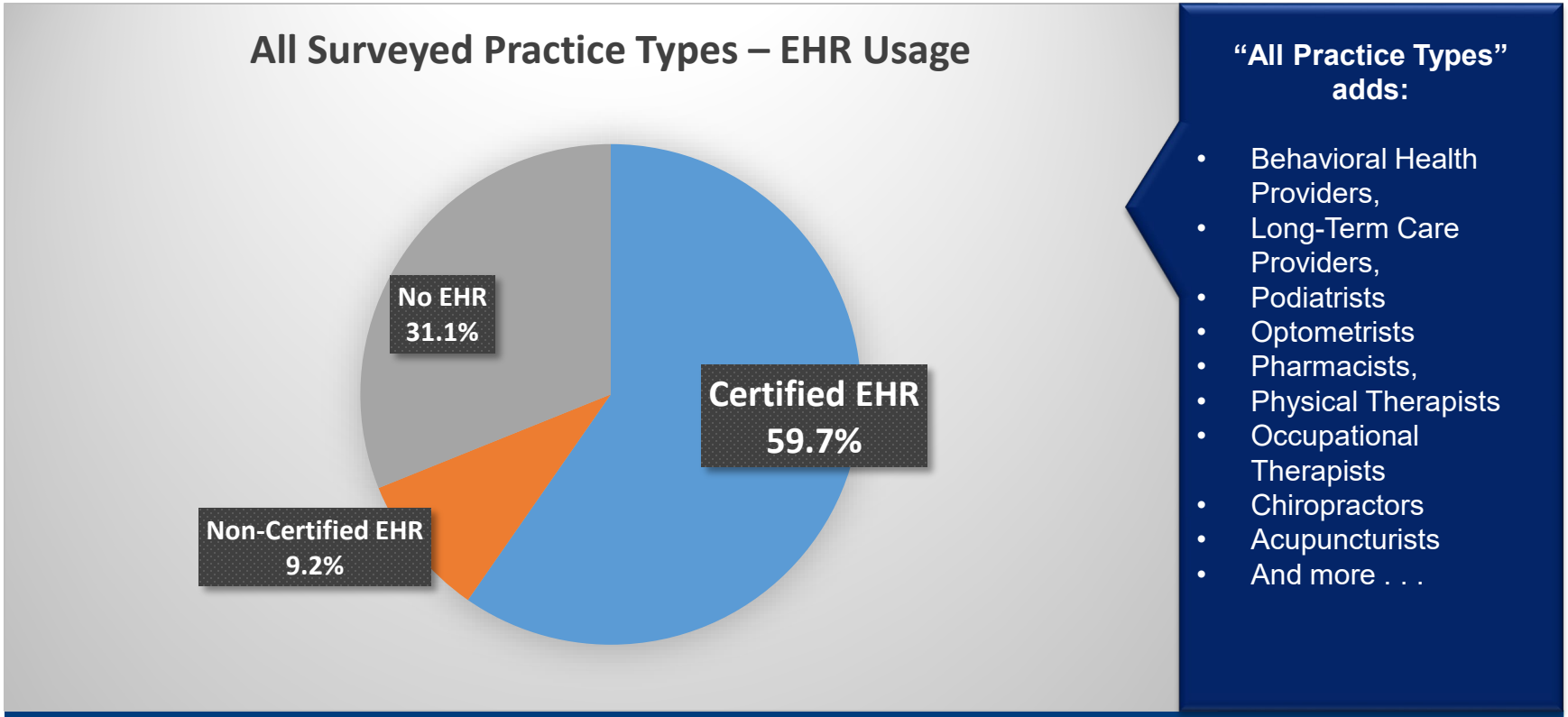
When non-EP provider types are included, the percentage of practices using a certified EHR drops to approximately sixty

- An additional nine percent use a non-certified EHR, leaving 31 percent using no EHR system



# EHR Usage – Physicians

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The Office of the National Coordinator tracks EHR adoption (basic, certified, and "any" EHR) by office-based **physicians**. Note: that metric cannot be compared to EHR adoption by EP-type providers because non-physicians (nurse practitioners, certified nurse-midwives, dentists, and physician assistants) are included in Medicaid EP types.

- 2020 Survey estimate*: **74.3% of office-based physician practices in PA are using certified EHRs.** These practices account for **97.7% of the individual practitioners** represented by all office-based physician surveys. **When non-certified EHR usage is added, the numbers increase to 77.8% of practices, and 98.0% of individual physicians.**

- With ~98% of physicians in office-based practices in Pennsylvania, this compares favorably to the national rate (for any EHR) of 86% (2017), reported by the ONC.

*EHR adoption by physicians can be estimated from the 2020 DHS survey if it is assumed that all individual providers represented by a particular physician practice type are physicians. For example, a survey from a group dermatology practice may report five providers working there. For the sake of this estimate, we assume that all five providers are dermatologists (physicians.) In reality, some individual providers in these practices may be physician assistants, CRNPs, etc.

# Physicians – National Rates

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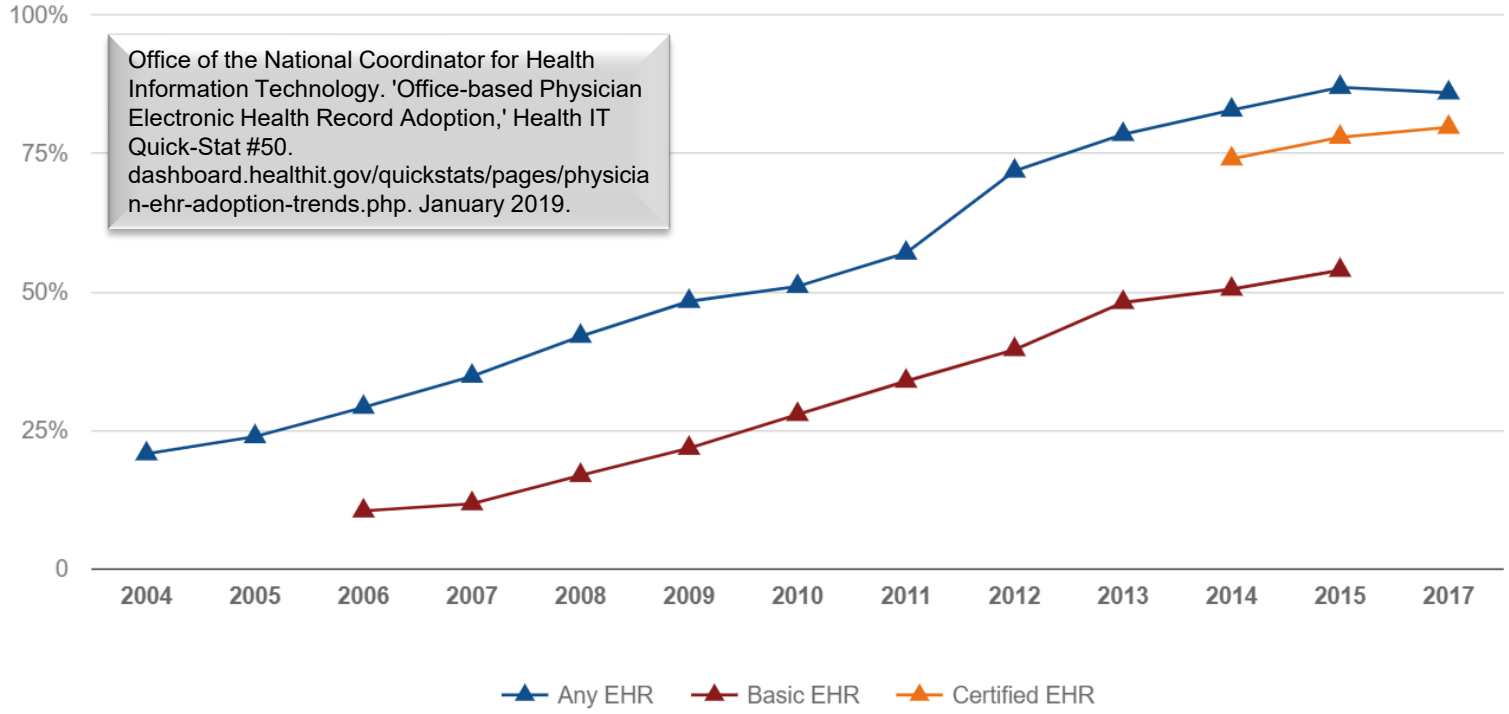
According to the ONC, the national rate of EHR adoption for office-based physicians was 87% in 2015 and slightly lower (86%) in 2017 (the most recent data available).

*"As of 2017, nearly 9 in 10 (86%) of office-based physicians had adopted any EHR, and nearly 4 in 5 (80%) had adopted a certified EHR. Since 2008, office-based physician adoption of any EHRs has more than doubled, from 42% to 86%. ONC and the CDC began tracking adoption of certified EHRs by office-based physicians in 2014."*




Office of the National Coordinator for Health Information Technology. 'Office-based Physician Electronic Health Record Adoption,' Health IT Quick-Stat #50. dashboard.healthit.gov/quickstats/pages/physician-ehr-adoption-trends.php. January 2019.

# EHR Adoption – “Owned” Practices

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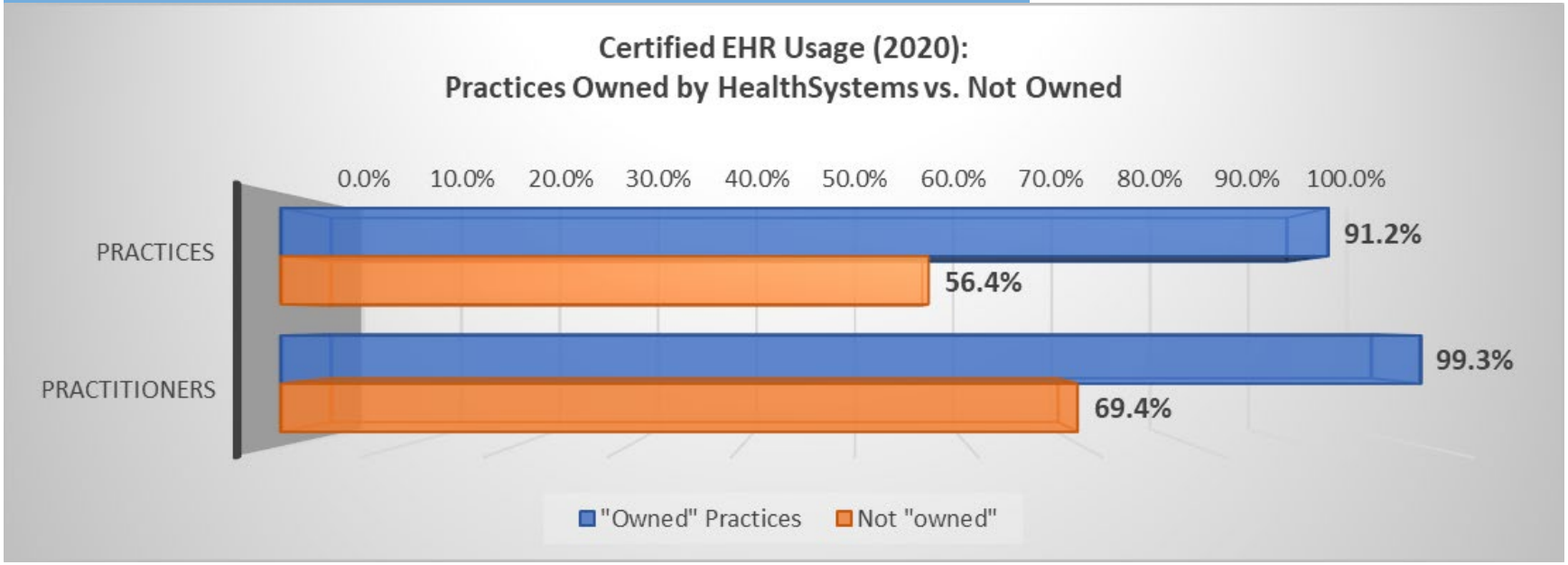


- 91.2% of health system-owned practices and virtually all (99.3%) practitioners in health system-owned practices are using certified EHRs, vs. only ~56% of other practices and ~69% of practitioners.
- The difference between “Owned” and “Not Owned” practices’ use of certified EHRs is wider in 2020 than it was in 2016, but the percentage of practitioners using certified EHRs in each category is almost identical.

# EHRs & Group Practice Sizes

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Practice size (measured by number of individual practitioners employed) makes a difference with regard to certified EHR adoption.

Small practices (up to 10 practitioners) have the lowest adoption rate (66%), and very large practices (more than 500 practitioners) have the highest (100%.) For the most part, the adoption rate increases with group size.

# Hospital HIT Data

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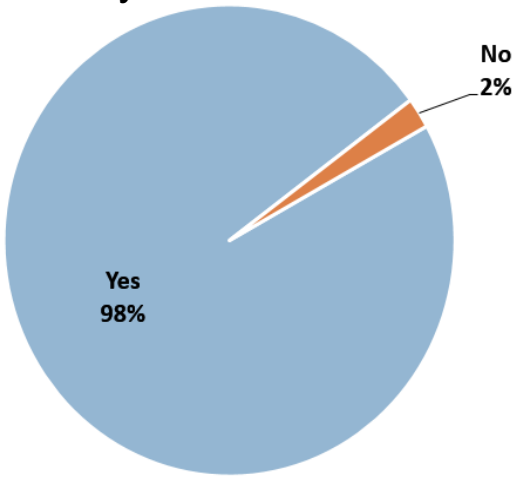
- Because HIT data for hospitals is available from other sources, the 2020 DHS HIT provider survey specifically focused on office-based (non-hospital) healthcare practices.
- Our data regarding Pennsylvania's general acute care (GAC) inpatient hospitals comes from the 2015 and 2018 American Hospital Association (AHA) HIT Surveys, as provided by the Hospital and Healthsystem Association of Pennsylvania (HAP).
- EHR adoption by hospitals reached 98% by 2015. Since then, HIT progress has been centered on expanding electronic exchange of data with outside providers, and increasing usage of EHR features.
- The following slides show reports from the Hospital and Healthsystem Association of Pennsylvania (HAP).

**On the 2015 AHA Survey, ninety-eight percent of Pennsylvania hospitals indicated that they possess an EHR system that has been certified as meeting federal requirements for the hospital objectives of Meaningful Use.**



# Hospitals: HIT Progress

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## Summary of the 2018 American Hospital Association HIT Survey by the Hospital and Healthsystem Association of Pennsylvania

The American Hospital Association periodically performs a survey to assess the progress in health information technology (HIT) at U.S. hospitals. The intent is to provide insight into the utilization and functionality of e-health as well as the challenges faced by providers in accessing information electronically and meeting federal requirements for meaningful use. Below are some of the key findings the survey results revealed about HIT implementation at Pennsylvania hospitals.

- **Electronic documentation and order entry has increased:** In 2018, the use of computerized systems expanded to include physician notes (92% of surveyed hospitals) and nursing notes (93%) on all patient care units. Electronic clinical documentation of problem lists (95%), medication lists (96%), and discharge summaries (90%) also has increased use among hospitals across the state. More providers continue to utilize computerized systems for order entry including lab tests (92%), medications (96%), and consultation requests (91%) providing increased accessibility and driving quality of care.
- **Dramatic increases in telehealth, medication tracking, and patient monitoring:** Since the survey performed in 2016, there has been a notable increase in the use of computerized systems for other functionalities to improve patient care.
  - Barcoding and Radio Frequency Identification for medications is up from 51% to 90%;
  - Fully implemented telehealth is up from 24% to 69%; and
  - Remote patient monitoring is up from 22% to 50% in 2018 survey results.

# Hospitals: HIT Progress

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**Summary of the 2018 American Hospital Association HIT Survey by the Hospital and Healthsystem Association of Pennsylvania, cont'd.**

- **EHR use to advance quality, performance, and patient safety:** The survey results also show that hospitals in Pennsylvania utilize the EHR/EMR system to support a continuous quality improvement process (82%) with an emphasis on monitoring organizational performance (77%) and patient safety (75%).
- **Information exchange across vendor platforms is the top HIT challenge:** The 2018 survey results also show a number of challenges remain with HIT implementation at Pennsylvania hospitals.
  - 45% of those surveyed identify providers not having EHRs as being the biggest hurdle in obtaining patient data from other organizations.
  - 54% of Pennsylvania hospitals feel the exchange of information across different vendor platforms is their most difficult challenge; however, it appears that rather than making a major change in vendor (21%), hospitals and health systems are choosing to optimize the functionalities of new releases for their platform (59%).

# Hospitals and P3N Participation

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**Summary of the Health Information Exchange Participation Study conducted by IMPAQ for the Hospital and Healthsystem Association of Pennsylvania**

In March 2020, the Hospital and Healthsystem Association of Pennsylvania (HAP) worked with IMPAQ, a research-consulting firm, to develop a survey to collect data on how HAP can support member hospitals that participate in the PA Patient & Provider Network, or P3N which facilitates clinical data exchange among the five health information organizations (HIOs) in Pennsylvania. In total 22 hospitals completed the survey. To obtain further insights, interviews were conducted with five other state hospital associations, the five Pennsylvania HIOs, and HAP member hospitals to assess strategies for participation.

- According to state data from the Pennsylvania eHealth Partnership, 43 percent of Pennsylvania hospitals do not participate in the P3N. The non-participating hospitals are statistically more likely to be small (fewer than 100 beds) non-teaching hospitals specializing in psychiatric care, long-term acute care, and rehabilitation. The most common reasons cited by hospitals for choosing not to participate in the P3N were related to preferences for data exchange through electronic health records and nationwide Health Information Exchanges (HIEs). Additional factors include the concern over incompatible IT infrastructure and cost as well as the perception that data availability through the P3N is limited. P3N non-participants also said that most patients in their hospitals seek care within the system, which reduces the need to exchange information outside the system.

# Hospitals and P3N Participation

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**Summary of the Health Information Exchange Participation Study conducted by IMPAQ for the Hospital and Healthsystem Association of Pennsylvania, cont'd.**

- **Top reasons for participating in the P3N:** For the 57 percent of hospitals that do participate in the P3N, their top reasons to do so included enhanced care coordination, increased access to information to support point-of-care clinical decision making, and to support quality or public reporting. Most of the participating hospitals have been in the P3N for more than three years and have high satisfaction rates. Of the survey respondents that participated in the P3N, 53 percent rated their experience with the P3N positively, while 77 percent rated their experience with their own HIO positively, specifically with regards to their experience with customer service and other services offered.
- **Challenges to participating in the P3N:** The survey results indicated that there are some challenges to participating in the P3N, most notably the technological limitations and availability of data, including variation in the data provided by HIOs. Some HIOs only offer CCD and ADT alerts for ED admissions, while others offer additional data such as ADT alerts for inpatient admission and discharge, encounter summaries, and direct source messaging. Additional issues result from the inconsistency in data structures among HIOs, where some include discrete fields that will automatically integrate into hospital EHR systems, while others require the use of separate data portals. It is also the case that participating providers in some of the HIOs do not report their full data.

# Hospitals and P3N Participation

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**Summary of the Health Information Exchange Participation Study conducted by IMPAQ for the Hospital and Healthsystem Association of Pennsylvania, cont'd.**

- **P3N participation associated with the Medicare VBP program:** The interviews IMPAQ conducted discovered an association between participation in the P3N and the Medicare Value-Based Purchasing (VBP) program model – hospitals noted that quality and financial performance drives participation in the P3N. Some states mandate HIE participation. Other states, like Pennsylvania, rely on onboarding grants through the American Recovery and Reinvestment Act (ARRA) and Health Information Technology & Clinical Health (HITECH) grants to provide the financial support to encourage participation in HIEs.
- **Strategies to meet PA hospitals' data exchange needs:** Based on the results of the project, HAP is adopting IMPAQ's recommendation to develop a council of CIO and CMIOs with a working group of IT executives at member hospitals. The purpose of the council is to develop strategies for working with the P3N, HIOs, and electronic health record vendors to meet the data exchange needs of Pennsylvania hospitals and health systems.

# Certified EHRs by Care Area

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Although nearly half (48%) of office-based practices are using an ONC-certified EHR, usage rates vary considerably among the care areas. Medical Diagnostic Services, Long-Term Care, Pediatric and Specialty Medical Care show the highest rates of usage. The area with the largest share of surveys in 2020, behavioral health, is the care area with the lowest certified EHR usage.

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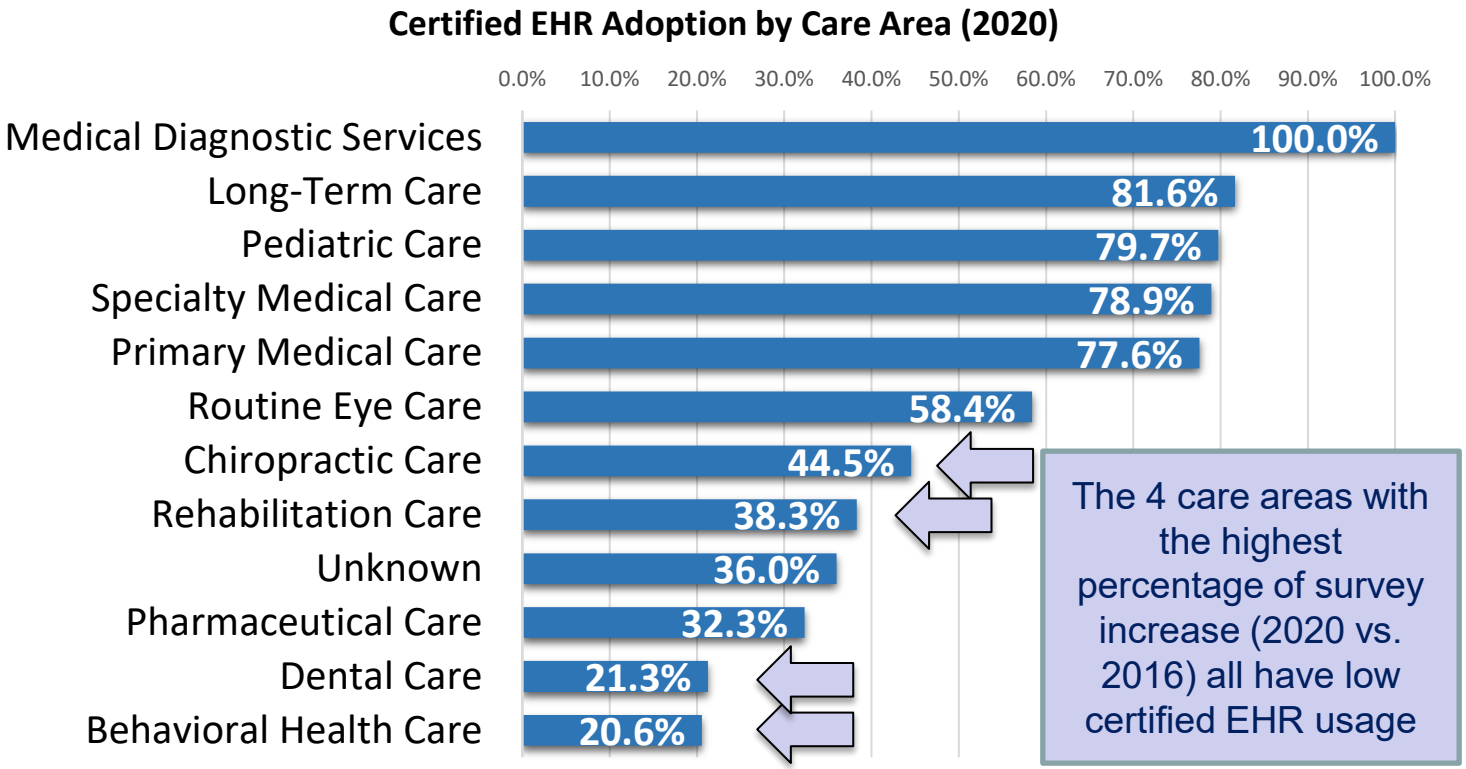

# Certified EHRs by Care Area

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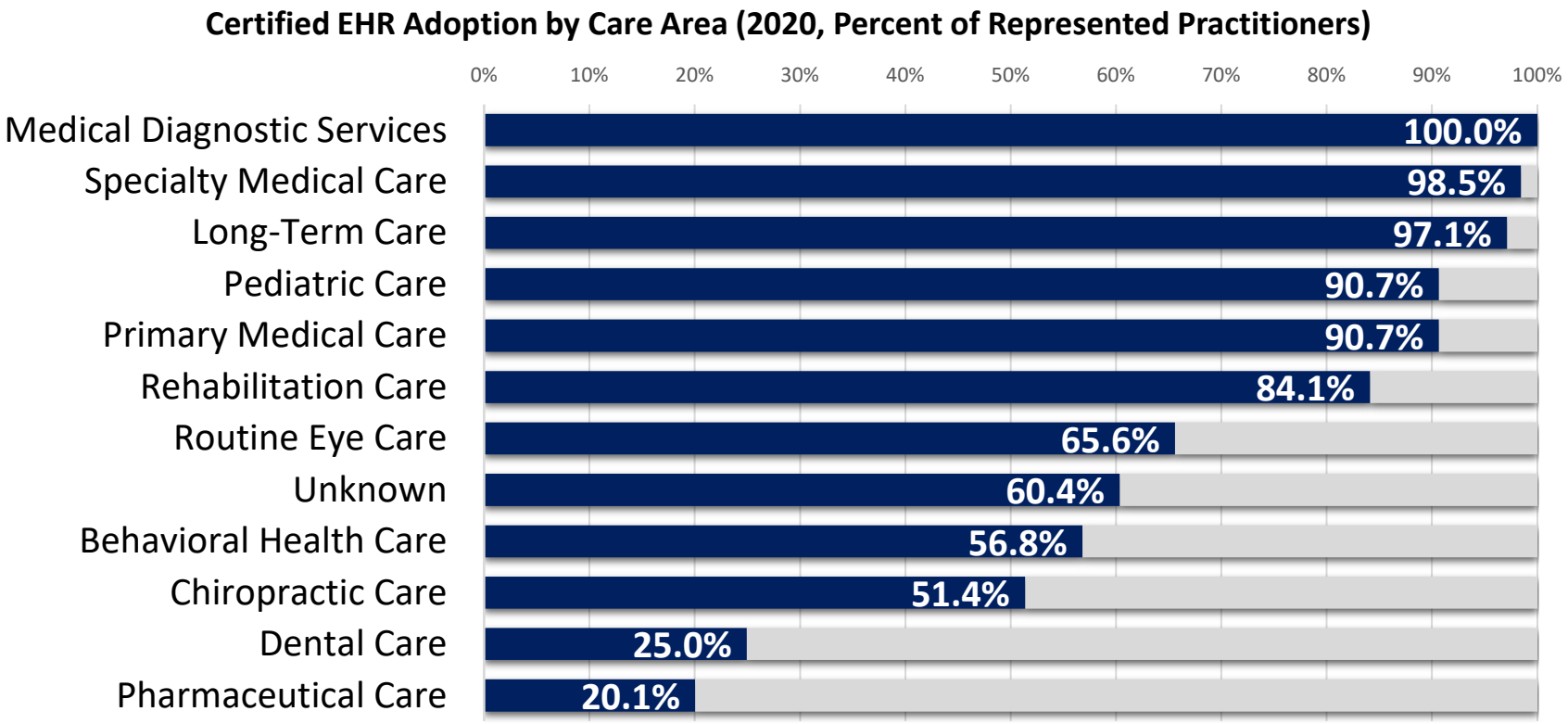
At least nine out of every ten practitioners in medical diagnostic services, specialty medical care, long-term care, pediatric care, and primary medical care are employed by practices using ONC-certified EHRs.



# Certified EHR Vendors

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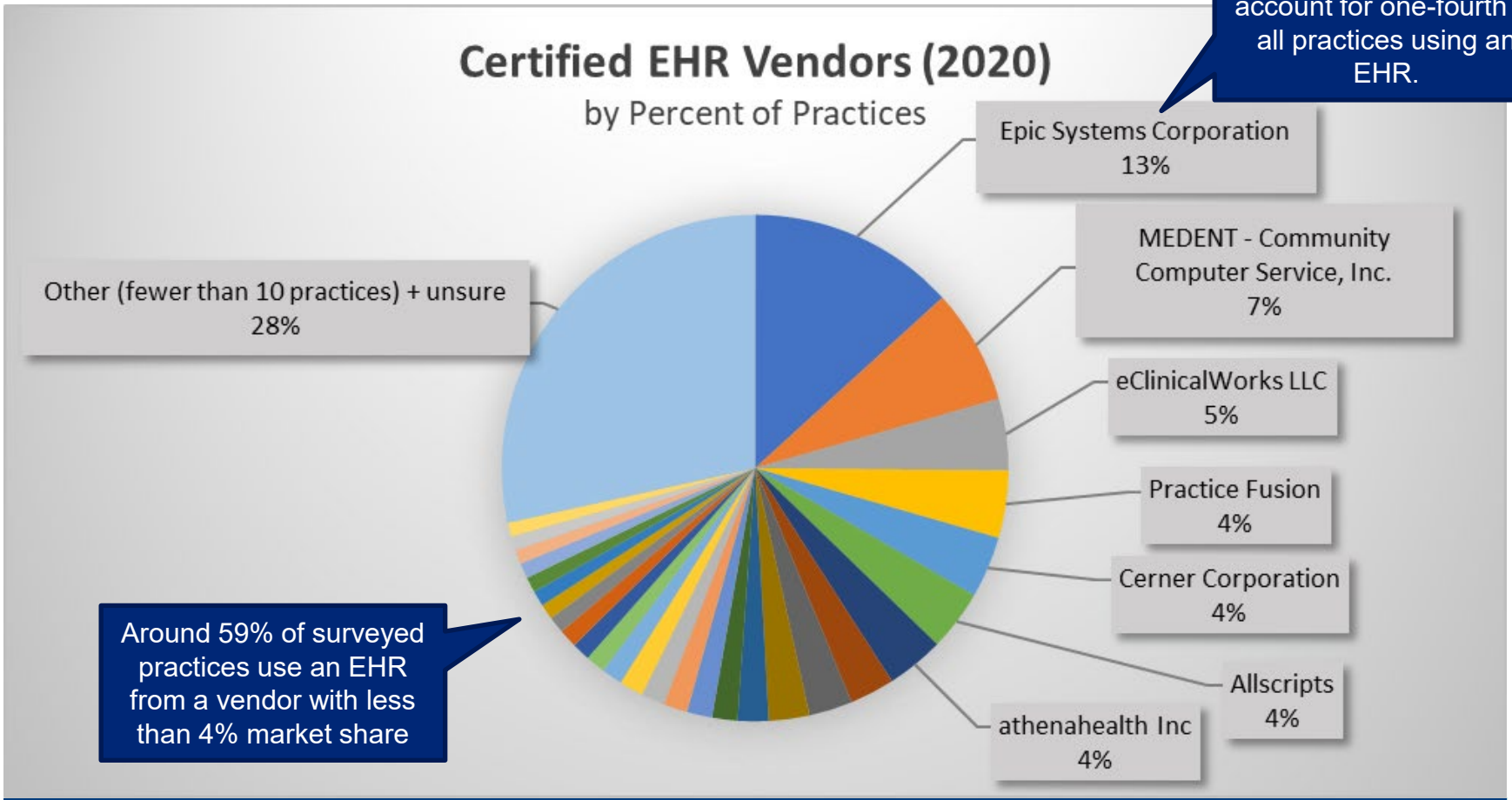
The single-most popular EHR vendor among surveyed practices is Epic Systems Corporation, followed by MEDENT, eClinicalWorks, Practice Fusion, etc.

The top three vendors account for one-fourth of all practices using an EHR.




Around 59% of surveyed practices use an EHR from a vendor with less than 4% market share

# Certified EHR Vendors

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## Top EHR vendors

The most popular EHR is Epic, as it was in 2016. In 2020, 13% of all responses (representing 51% of all practitioners) were for Epic, followed by 7% of practices (just 2% of practitioners) using MEDENT, then eClinicalWorks and Practice Fusion, Cerner, Allscripts, and athenahealth. Each vendor after that represents less than 4% of the responses.

## Group practice size and vendors

There is wide variance in the average group size (number of practitioners represented) for these vendors. The average number of practitioners in an Epic practice is 88, while the average for the #2 vendor (MEDENT) is just six. For Practice Fusion, the 4th most popular by percentage of practices, the average number of practitioners is just two.

# Non-Certified EHRs

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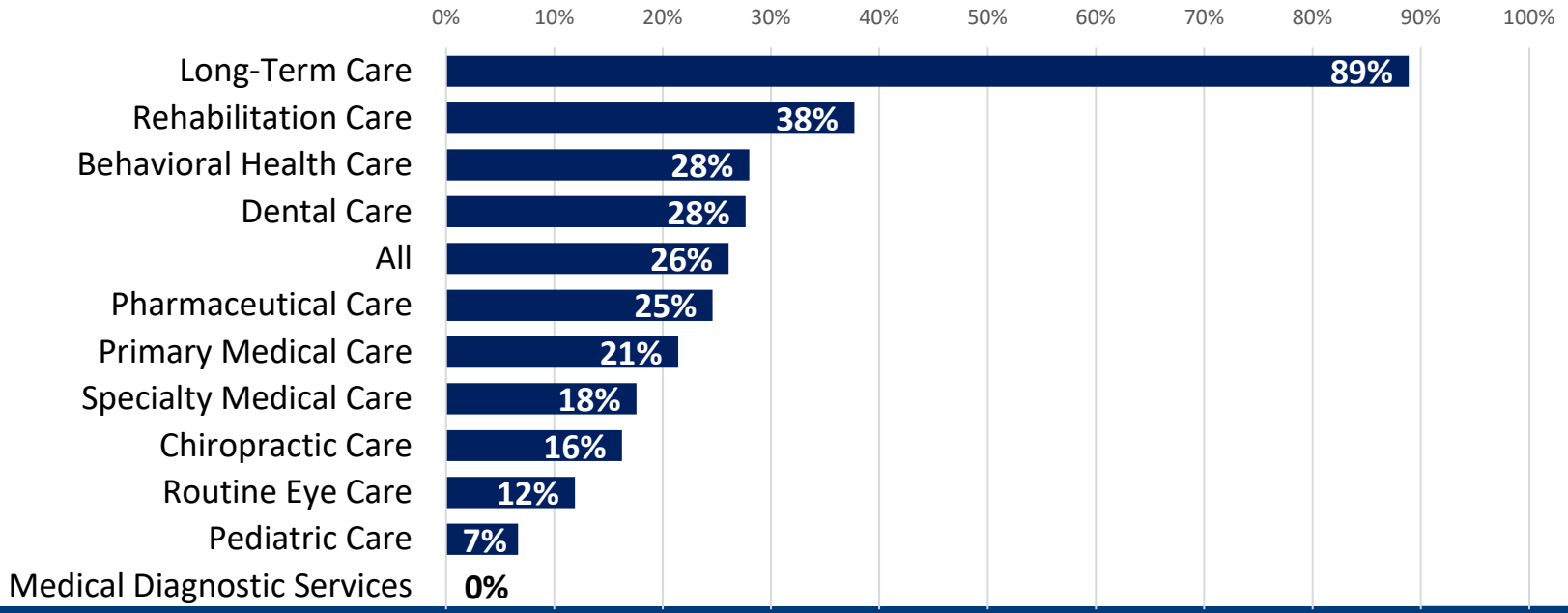
Of the survey respondents that do not use certified EHRs, more than a quarter (26%) use non-certified EHRs (with the remainder not using any EHR.) Nine out of ten (89%) Long-Term Care practices/organizations that do not use certified EHRs use non-certified EHRs, followed by 38% of those in Rehabilitation Care, and 28% in both Behavioral Health Care and Dental Care. The Pediatric Care Area is the least likely to use a non-certified EHR, followed by Routine Eye Care and Chiropractic Care.

**Percent of Practices Not Using Certified EHRs that Are Using Non-certified EHRs, by Care Area**



# Any EHR – Practices

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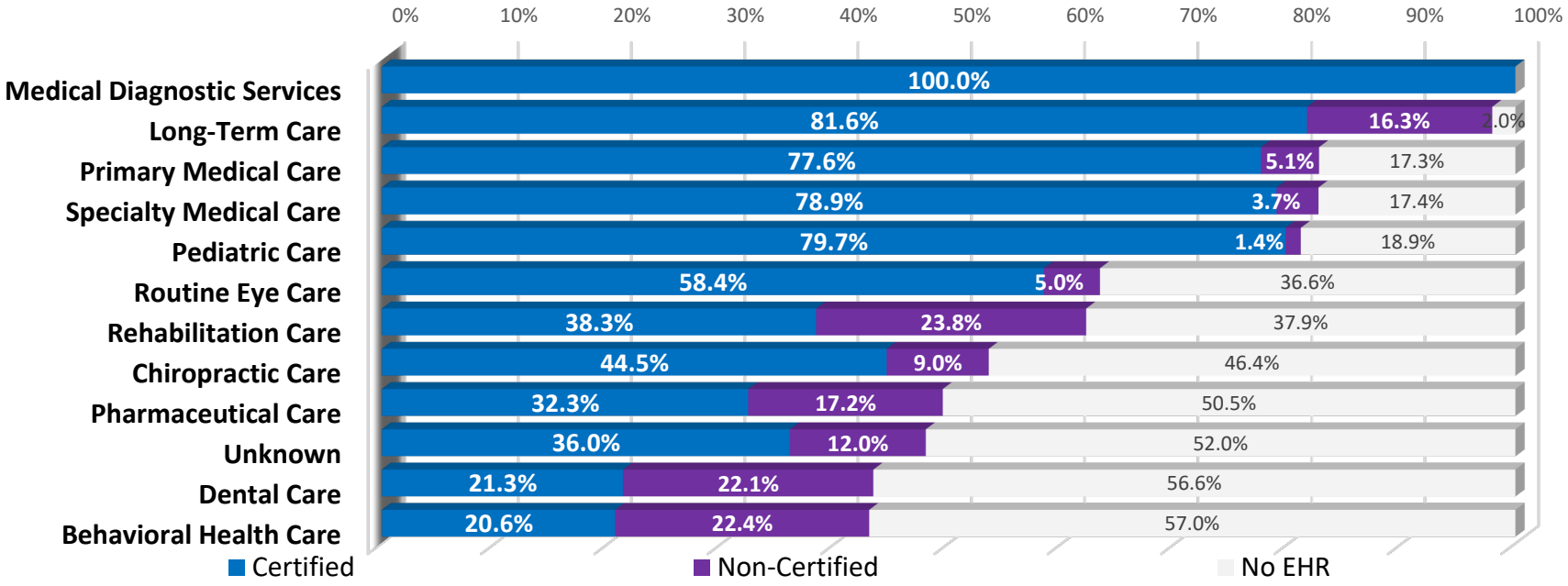
When certified and non-certified EHR adoption is combined (see chart below), the full picture of EHR usage is revealed. Even care areas with low certified EHR adoption show a total EHR adoption rate of at least 43% (Behavioral Health Care). More Behavioral Health Care and Dental Care practices use non-certified EHRs than use certified ones.

**EHR Adoption by Care Area (2020)**

Certified and Non-certified EHR Usage by Percent of Practices



# Any EHR – Practitioners

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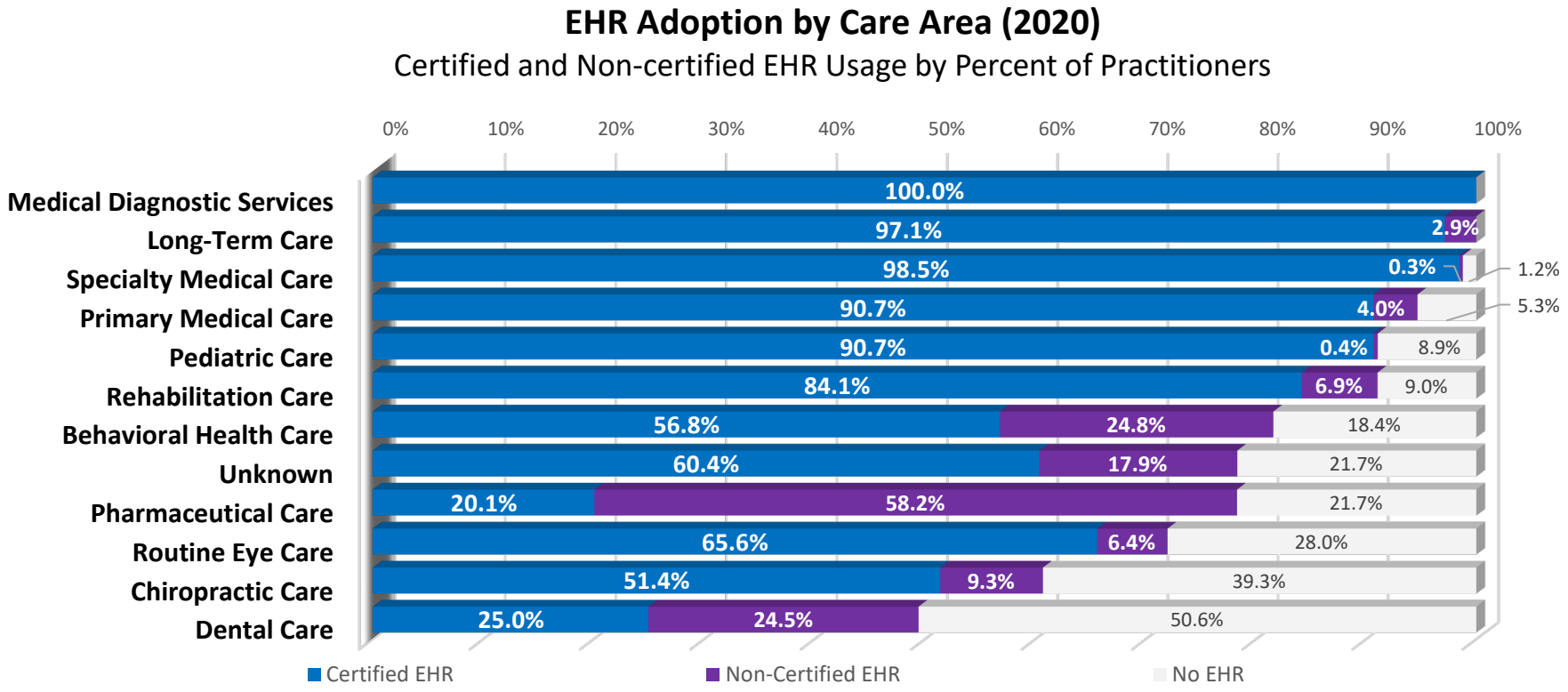
When use of any EHR by percentage of practitioners represented is examined (see chart below), the real progress in EHR adoption can be seen. At least 90% of practitioners in the three physical health medical areas, plus diagnostic services, long-term care, and rehabilitation care are using an EHR of some sort, and nearly all of them are using certified EHRs. Even at the low end of the chart, nearly half (49.5%) of dental practitioners are using an EHR of some sort.



# How long using an EHR?

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Nearly a third of the 1,327 practices that answered this question have been using an EHR more than ten years, and these practices employ 59% of practitioners represented. In 2016, only 12% had used an EHR that long.

# How long using an EHR?

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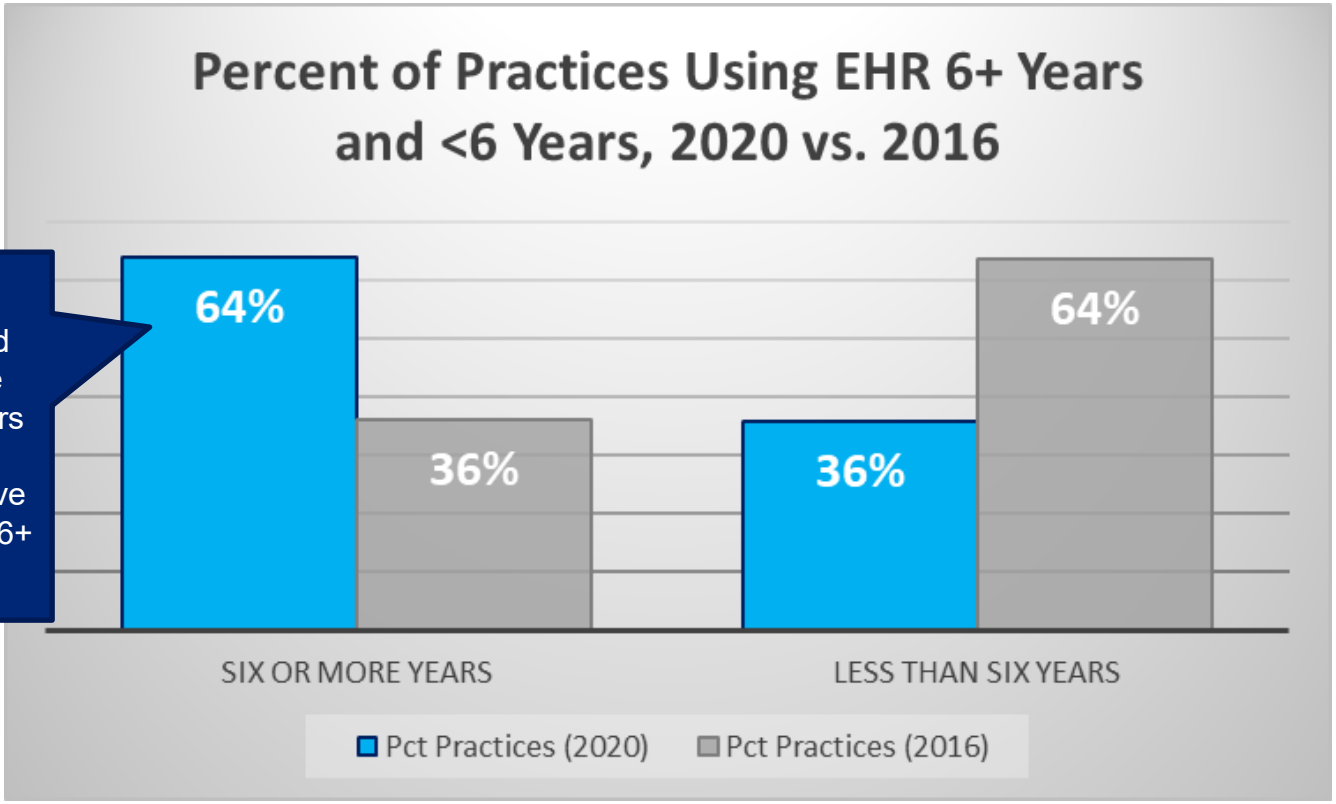
In 2016, 36% of practices had been using an EHR six or more years, with 64% having used an EHR for less than six years. In 2020, the percentages had flip-flopped. 64% of practices have used an EHR for six or more years, and 36% have used an EHR for less than six years.

82% of all practitioners and 88% of EP-type group practitioners work in these practices that have used an EHR for 6+ years



# Switched EHR System (Vendor)

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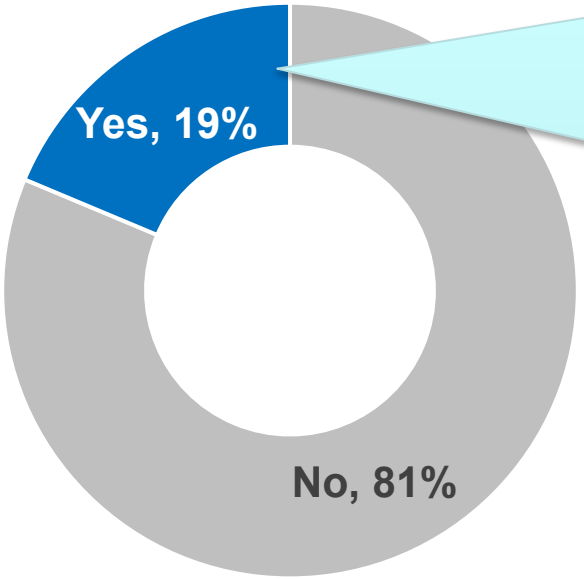
As in 2016, about one-fifth (19%) of practices changed EHR systems in the last five years. This switch affected 31% of individual practitioners.

**Percent of Practices that Changed EHR Systems in the Last Five Years (2020)**




The top reason cited for switching was **"Previous EHR did not have sufficient functionalities,"** followed by **"Our practice merged** (or entered a partnership) with another organization and we changed to the EHR system used by the other organization," and **"Previous EHR was too expensive."**

See the next slide for a full list of reasons.

# Switched EHR System (Vendor)

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Participants ranked reasons for switching with a 1, 2, or 3, with "1" indicating the most important reason.

| Rank | Response | 1 | 2 | 3 | Weighted Value |
|---|---|---|---|---|---|
| 1 | **Previous EHR did not have sufficient functionalities** | **83** | 30 | 27 | 336 |
| 2 | Our practice merged (or entered a partnership) with another organization and we changed to the EHR system used by the other organization | **37** | 7 | 10 | 135 |
| 3 | Previous EHR was too expensive | **23** | 14 | 10 | 107 |
| 4 | Previous EHR was not easy to use | **19** | 32 | 32 | 153 |
| 5 | Previous EHR was no longer supported by the vendor / vendor went out of business | **12** | 6 | 9 | 57 |
| 6 | Previous EHR was not customized for my practice specialty | **11** | 22 | 25 | 102 |
| 7 | Previous EHR was not compatible with EHR system used by practice/organization to which we often refer patients | **11** | 14 | 5 | 66 |
| 8 | Previous vendor did not provide adequate customer support | **8** | 14 | 16 | 68 |
| 9 | Previous EHR was not cloud-based, and we wanted a cloud-based/web-based system | **8** | 13 | 15 | 65 |
| 10 | Previous EHR did not have sufficient technical assistance | **7** | 22 | 19 | 84 |
| 11 | Previous EHR was not planning to maintain certification | **4** | 3 | 5 | 23 |
| 12 | Previous EHR was not ONC-certified | **3** | 4 | 1 | 18 |
| 13 | Previous EHR was cloud-based, and we wanted a system that is hosted on a server | **0** | 1 | 1 | 3 |

# Barriers to Maximizing EHR Use

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Survey-takers were asked to indicate the top 3 barriers to maximizing EHR usage and optimization in their organization. (They were asked to rank them by "1," "2," or "3", with 1 as the greatest barrier.)

- Just over 31% of practices indicated (with a "1") that they are not experiencing any such barriers.
- "Limited staff" and "Lack of IT experience" are the 2nd and 3rd-most cited barriers.
- EHR vendor technical assistance and privacy/security concerns are seldom barriers for those surveyed

| Rank | Barrier | 1 | 2 | 3 | Total responses (surveys) | Total Weight | Pct of "1" responses |
|---|---|---|---|---|---|---|---|
| **1** | **No barriers** | 349 | 45 | 172 | 566 | 1309 | **31.1%** |
| **2** | **Limited staff resources** | 123 | 132 | 74 | 329 | 707 | **11.0%** |
| **3** | **Lack of IT experience** | 108 | 108 | 81 | 297 | 621 | **9.6%** |
| 4 | Not customized to my practice specialty | 101 | 70 | 69 | 240 | 512 | 9.0% |
| 5 | Not easy to use | 99 | 71 | 70 | 240 | 509 | 8.8% |
| 6 | Not interoperable with other systems | 96 | 70 | 61 | 227 | 489 | 8.6% |
| 7 | Disruption to office business practices | 91 | 81 | 77 | 249 | 512 | 8.1% |
| 8 | Insufficient functionality | 65 | 84 | 81 | 230 | 444 | 5.8% |
| 9 | Inadequate customer support | 36 | 51 | 45 | 132 | 255 | 3.2% |
| 10 | Privacy/security concerns | 28 | 28 | 40 | 96 | 180 | 2.5% |
| 11 | Insufficient technical assistance | 26 | 60 | 51 | 137 | 249 | 2.3% |
| | | 1,122 | 800 | 821 | 2,743 | | |

# Plan to Change EHR System

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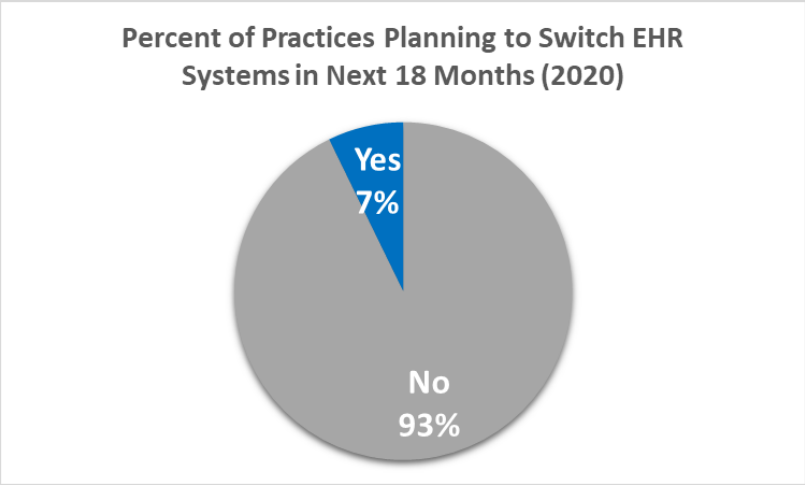
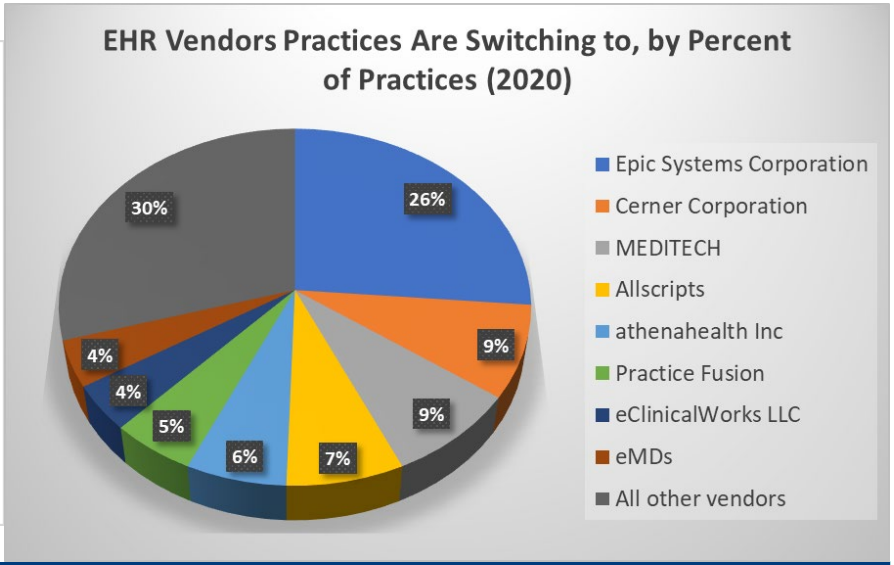
Seven percent of practices (employing just 3% of practitioners) plan to switch EHR systems within the next 18 months. In 2016, a higher percentage of practices (11%), employing 12% of practitioners, planned to switch EHR systems. This may suggest greater EHR satisfaction in 2020 vs. 2016.

- As in 2016, the most popular EHR vendor for those changing systems within the next 18 months is Epic Systems Corporation, although the percentage of practices switching to Epic dropped from ~42% in 2016 to ~26% in 2020.
- However, the percentage switching to Epic was still about three times the percentage of the next-closest vendor (Cerner and Meditech, each at around 9%).



# Reasons for Upcoming Change

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The top reason given for planning a change in EHR system is that the practice is merging with another. Practices also cited insufficient functionality in their current EHR and incompatibility with other providers' EHR systems as other major reasons.

| 2020 Rank | 2016 Rank | Response | 1 | 2 | 3 | Weighted Value |
|---|---|---|---|---|---|---|
| **1** | 1 | **Our practice is merging (or entering a partnership) with another organization and we are changing to the EHR system used by the other organization** | **18** | 4 | 0 | 62 |
| **2** | 3 | **Current EHR does not have sufficient functionalities** | **15** | 9 | 7 | 70 |
| **3** | 5 | **Current EHR is not compatible with EHR system used by practice/organization to which we often refer patients** | **10** | 5 | 4 | 44 |
| **4** | 6 | Current vendor does not provide adequate customer support | **9** | 9 | 8 | 53 |
| **5** | 2 | Current EHR is not easy to use | **8** | 8 | 6 | 46 |
| **6** | 9 | Current EHR is too expensive | **7** | 1 | 4 | 27 |
| **7** | 4 | Current EHR does not have sufficient technical assistance | **4** | 7 | 8 | 34 |
| **8** | 10 | Current EHR is no longer supported by the vendor / vendor is out of business | **4** | 1 | 1 | 15 |
| **9** | 7 | Current EHR is not cloud-based, and would like to switch to a cloud-based/web-based system | **2** | 4 | 1 | 15 |
| **10** | 11 | Current EHR is not planning to maintain certification | **2** | 0 | 3 | 9 |
| **11** | 12 | Current EHR is cloud-based, and would like to switch to a system that is hosted on a server | **1** | 3 | 0 | 9 |
| **12** | 8 | Current EHR is not customized for my practice specialty | **0** | 6 | 8 | 20 |

# Challenges to Changing EHR

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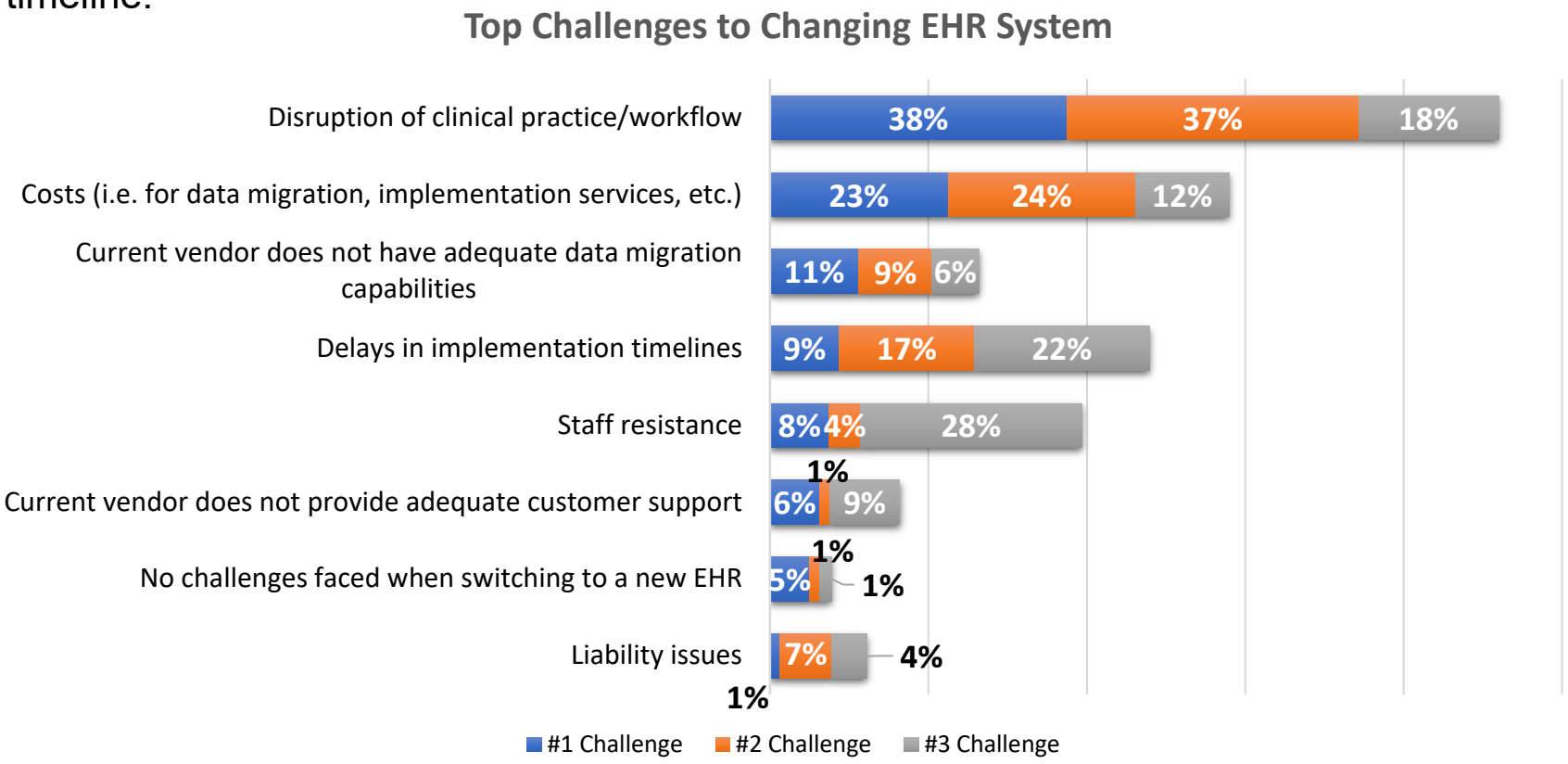
The number one challenge when changing from one EHR system to a new one is the disruption of clinical practice/workflow. Cost is the next-biggest challenge, followed by vendor not having adequate migration capabilities, and delays in implementation timeline.



# Top Barriers to Adopting EHR

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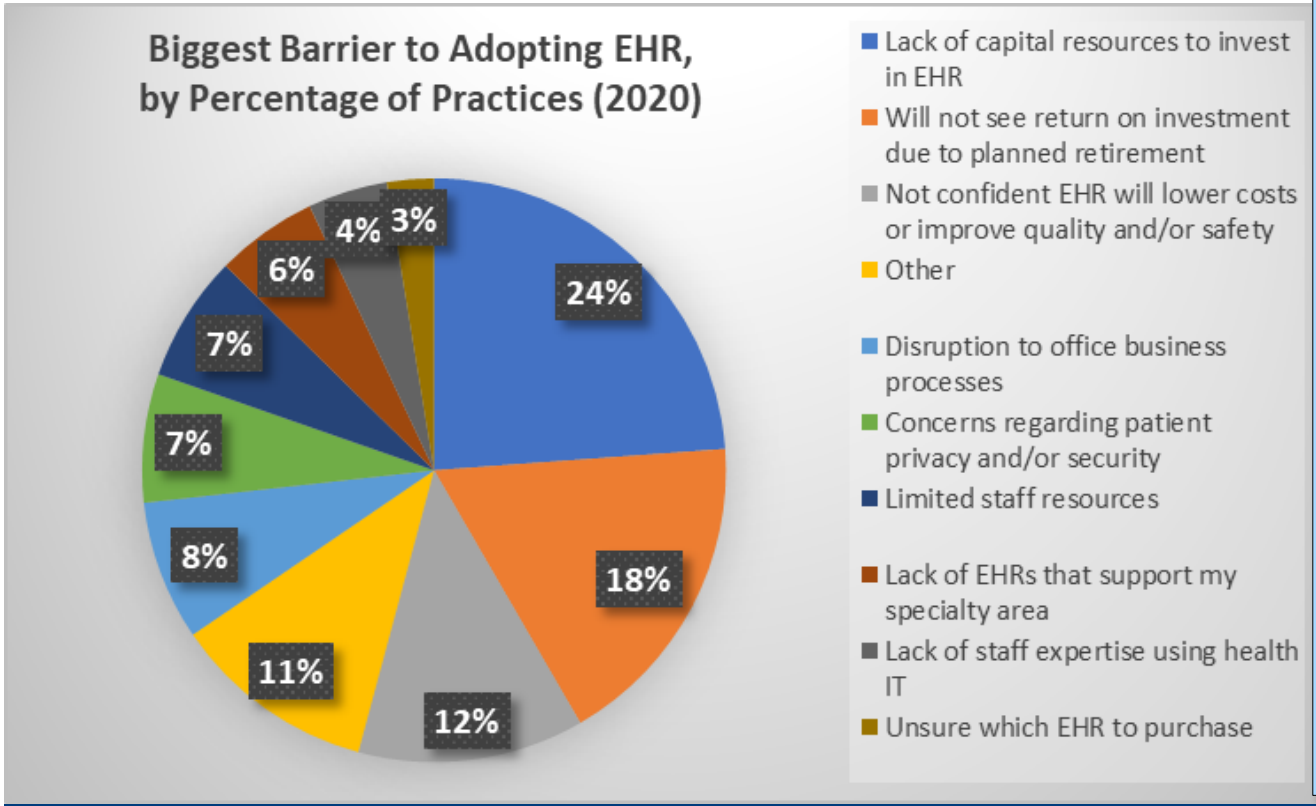
Practices not currently using an EHR were asked to identify the top barriers to EHR adoption.




About a quarter (24%) of the respondents consider **lack of capital resources** to be the biggest challenge to adopting EHR.

18% **will not see a return on their investment** because they are retiring.

Twelve percent of respondents are **not confident that an EHR will lower costs or improve quality and/or safety.**

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Survey Findings

# EHR Features & Usage

# EHR Features: 2020 vs. 2010

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Comparing EHR features and usage in 2020 to that in 2010 is imprecise due to the much smaller survey sample in 2010 and the different composition of the practice types. However, we can note the largest changes over ten years.

1. Feature availability: while fewer practices (-10%) can view lab results in 2020, more practices (+15%) can conduct public health reporting through their EHR.
2. Usage of features: there are large increases in use of public health reporting (+41%) and viewing imaging results (+33%), and a modest increase (+12%) in viewing lab results.

| | Percent of Practices with EHR Feature | | | Percent of Practices that Use Feature Most or All the Time | | |
|---|---|---|---|---|---|---|
| **Feature** | **2010** | **2020** | **Change** | **2010** | **2020** | **Change** |
| Patient problem lists | **99%** | **90%** | **-9%** | **92%** | **84%** | **-8%** |
| Patient allergy lists | **100%** | **97%** | **-3%** | **97%** | **91%** | **-6%** |
| Patient medication lists | **97%** | **96%** | **-1%** | **95%** | **91%** | **-4%** |
| Viewing Lab results | **84%** | **74%** | **-10%** | **70%** | **82%** | **12%** |
| Viewing Imaging results | **63%** | **63%** | **0%** | **47%** | **80%** | **33%** |
| Clinical notes or care plan | **93%** | **95%** | **2%** | **89%** | **84%** | **-5%** |
| Care gap reminders for guideline-based interventions and/or screening tests | **58%** | **58%** | **0%** | **44%** | **56%** | **12%** |
| Public health reporting | **12%** | **27%** | **15%** | **11%** | **52%** | **41%** |

# Management System Linkage

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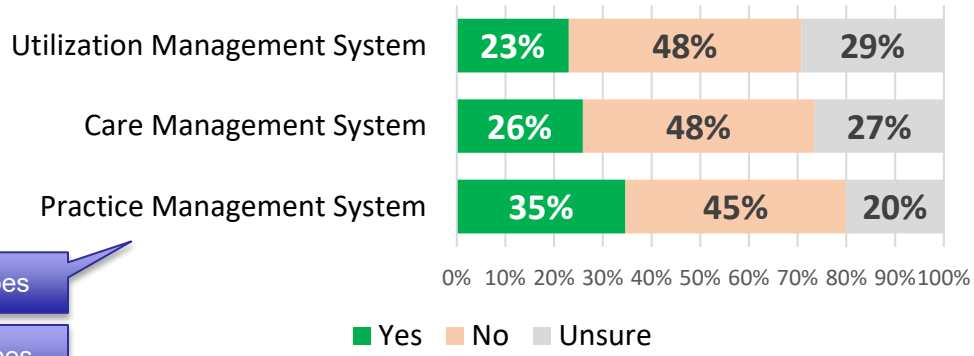
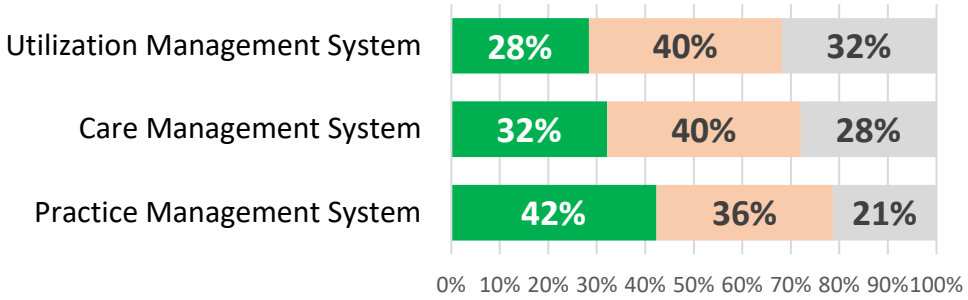
All Practice Types

Percentages of Practices with their Practice Management Systems, Care Management Systems, or Utilization Management Systems Linked to Organization's EHR System




EP Practice Types

Percentages of EP-type Practices with their Practice Management Systems, Care Management Systems, or Utilization Management Systems Linked to Organization's EHR System




Among both EP and non-EP practices, more practice management systems are linked to their EHR systems than care management system and utilization management system.

EP-type practices have a higher percentage of practice management system, care management system, or utilization management system being linked to organization's EHR system. For example, 42% of EP practices linked their practice management system to EHR system vs. 35% of all practice types.

# Certified Modules

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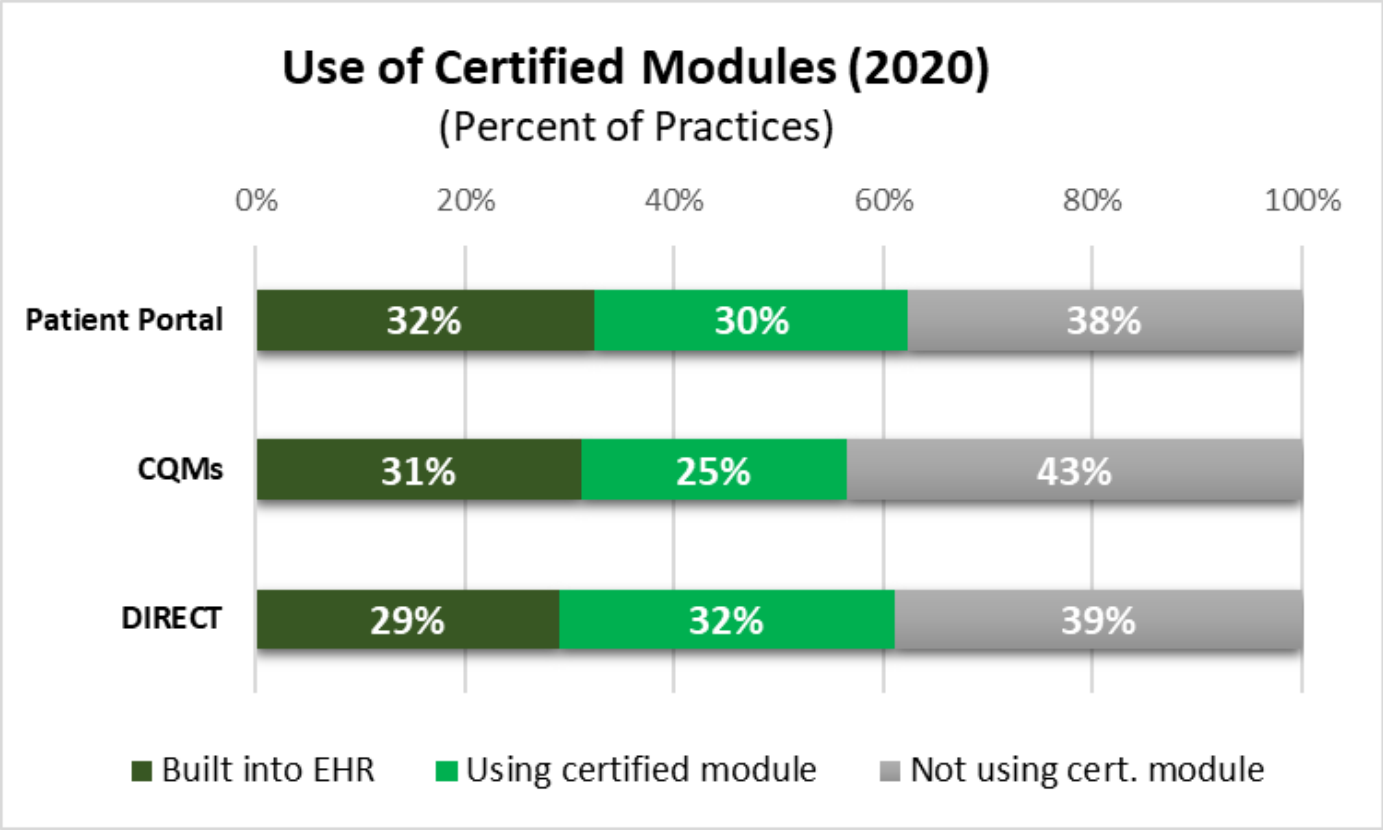
Almost a third of practices have the indicated capabilities built into their EHR systems, and another 25% to 32% are using certified modules to provide the capability. This is very similar to the 2016 results.



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Survey Findings

# E-Prescribing and PDMP

# E-Prescribe Controlled Substances

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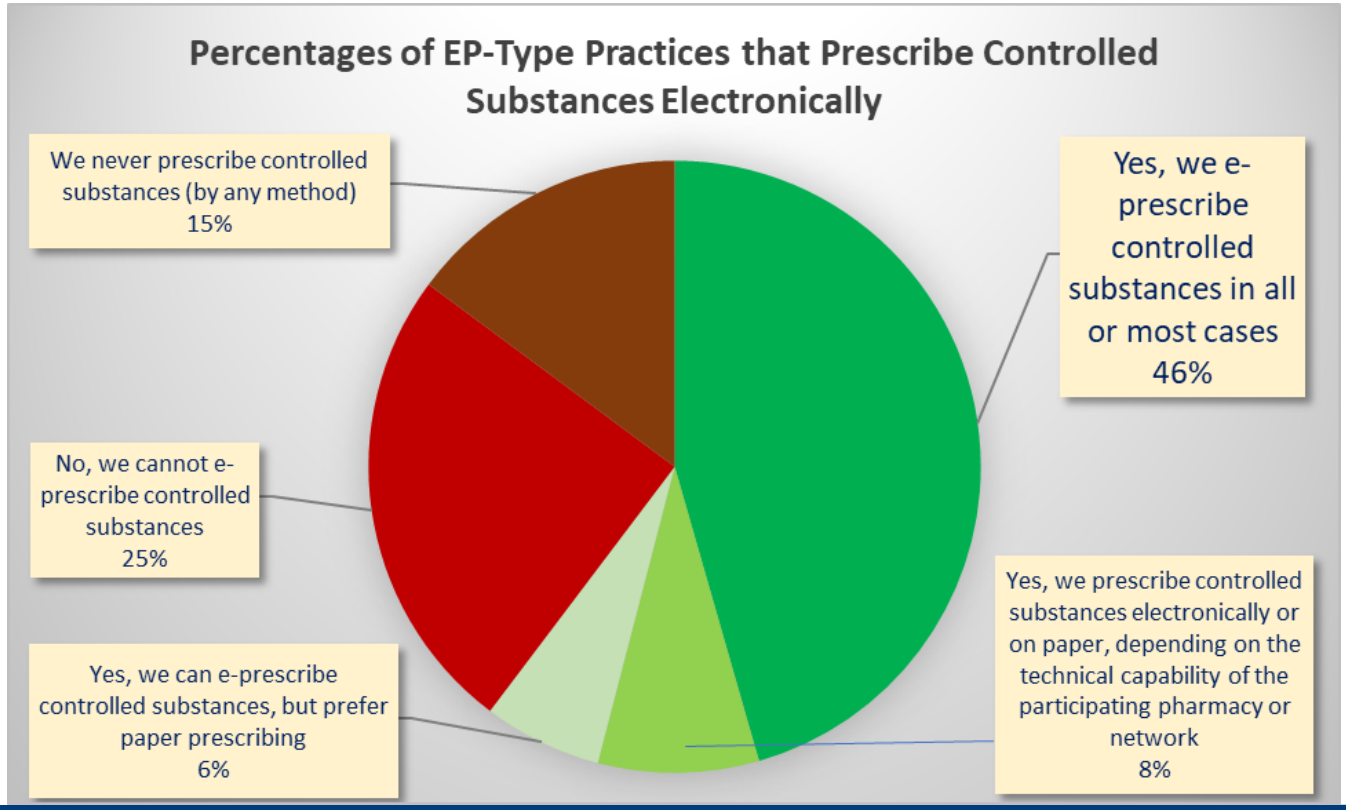
E-prescribing of controlled substances has increased dramatically since the 2016 HIT environmental scan. Nearly half (46%) of EP-type practices said they e-prescribed these drugs in "all or most" cases in 2020, as compared to just 7% in 2016.



# E-Prescribe Controlled Substances

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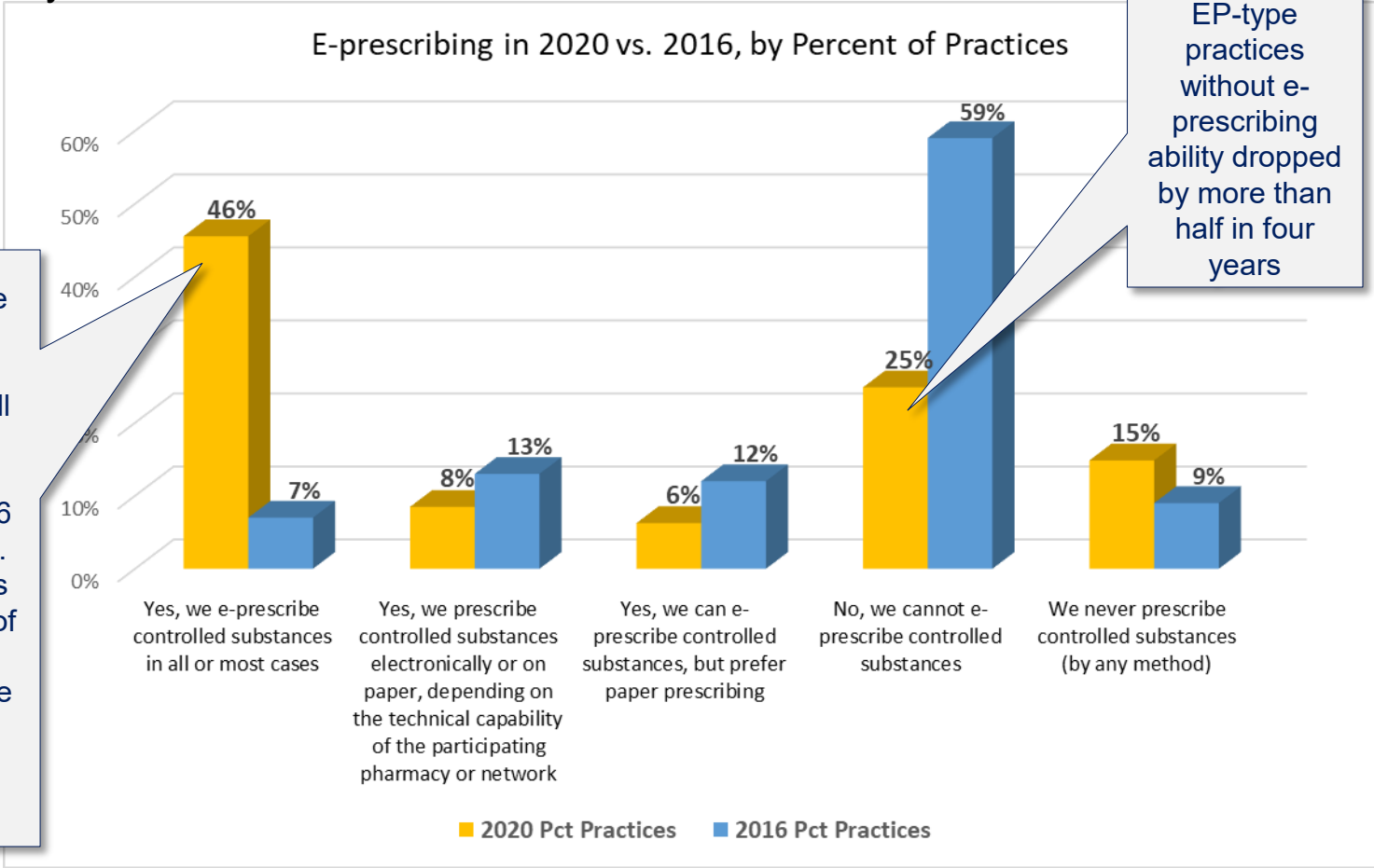
E-prescribing of controlled substances has increased significantly in the last four years.




The percentage of EP-type practices e-prescribing in all or most cases has increased from 7% in 2016 to 46% in 2020. These practices represent 72% of practitioners employed by the practices that answered this question

The percentage of EP-type practices without e-prescribing ability dropped by more than half in four years

# E-Prescribe With Certified Product

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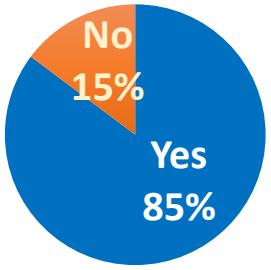
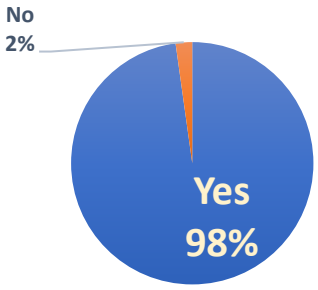
The percentage of EP-type practices using a certified product to e-prescribe controlled substances has increased from 66% in 2016 to 85% in 2020. Virtually all (98%) of the practitioners employed by practices that answered this question are in practices using a certified product to e-prescribe controlled substances.

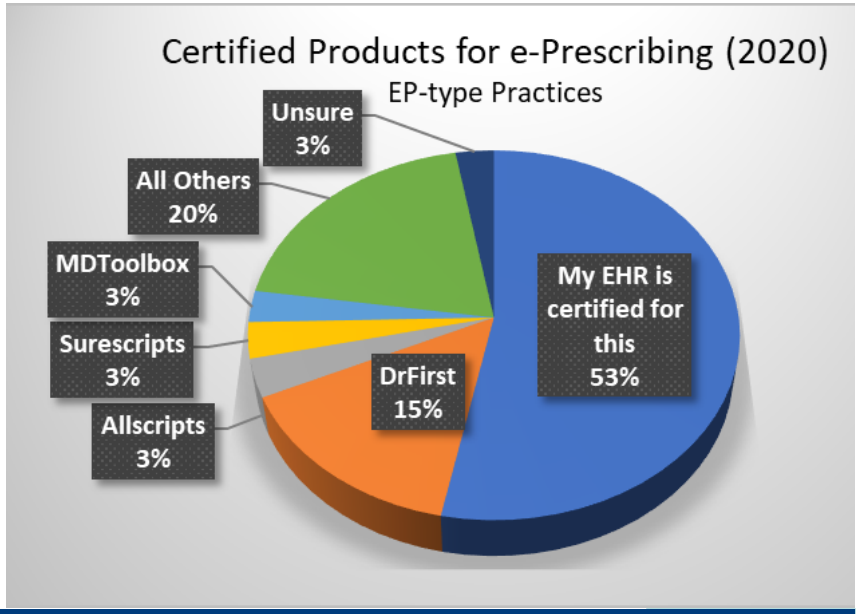
More than half (53%) of EP-type practices indicated that their EHR is certified for this function – similar to the 55% reported in 2016. DrFirst is the most-used non-EHR product (15% of these practices), as it was in 2016 (14%), followed by Allscripts (3%), Surescripts (3%), and MDToolbox (3%). 20% of EP-type practices use a variety of other products – each less than 3%.

Percentagesof EP-type Practices that Use a Certified Product to Prescribe Controlled Substances




Percentage of Practitioners Employed by EP-type Practices that Use a Certified Product to Prescribe Controlled Substances



# Rx Feature Availability & Use

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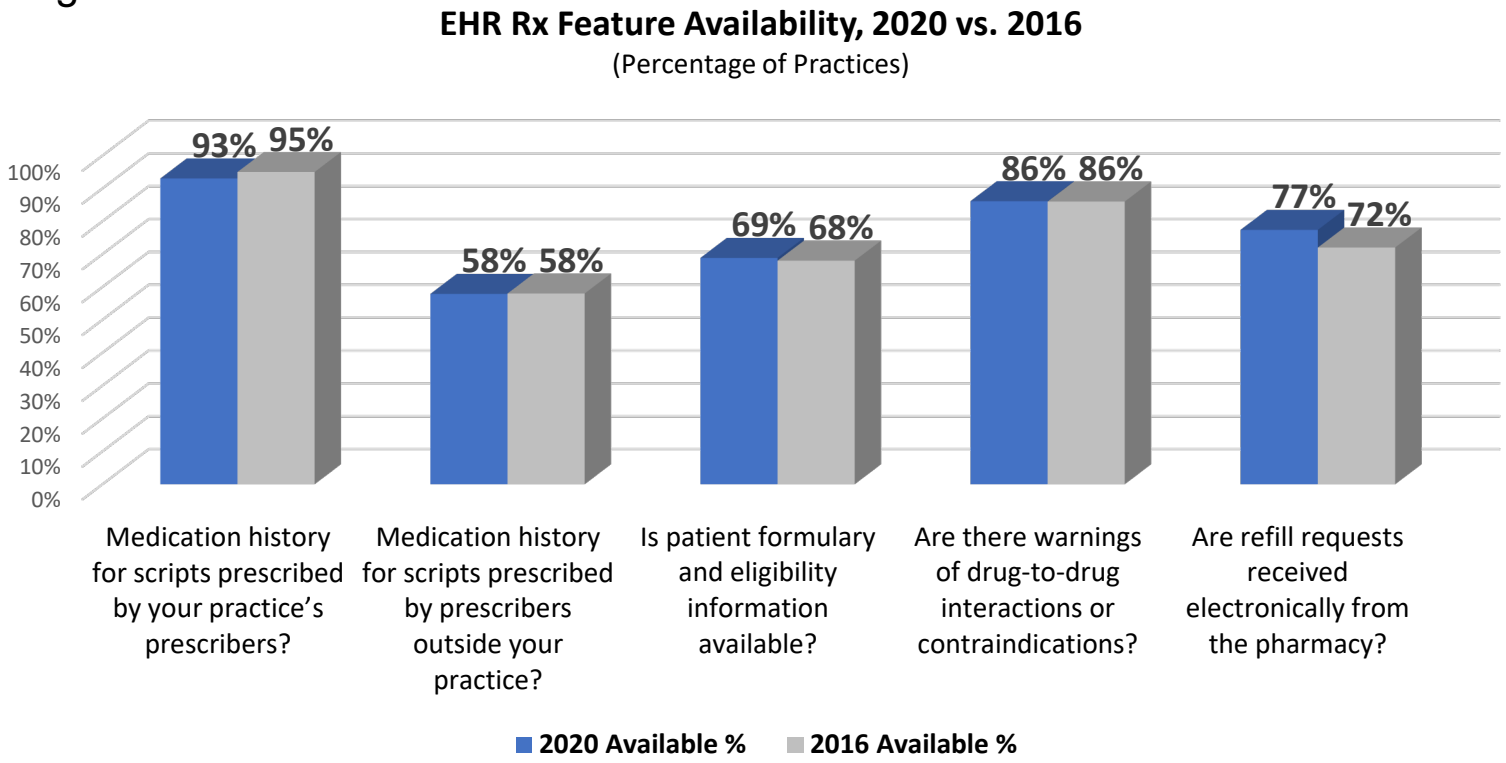
The majority of EHR systems used offer the medication/prescription features shown below: for example, 93% practices have medication history for scripts prescribed by practice's prescribers, and 69% practices indicate that patient formulary and eligibility information are available. The chart below shows how feature availability is almost unchanged since 2016.



# Rx Feature Availability & Use

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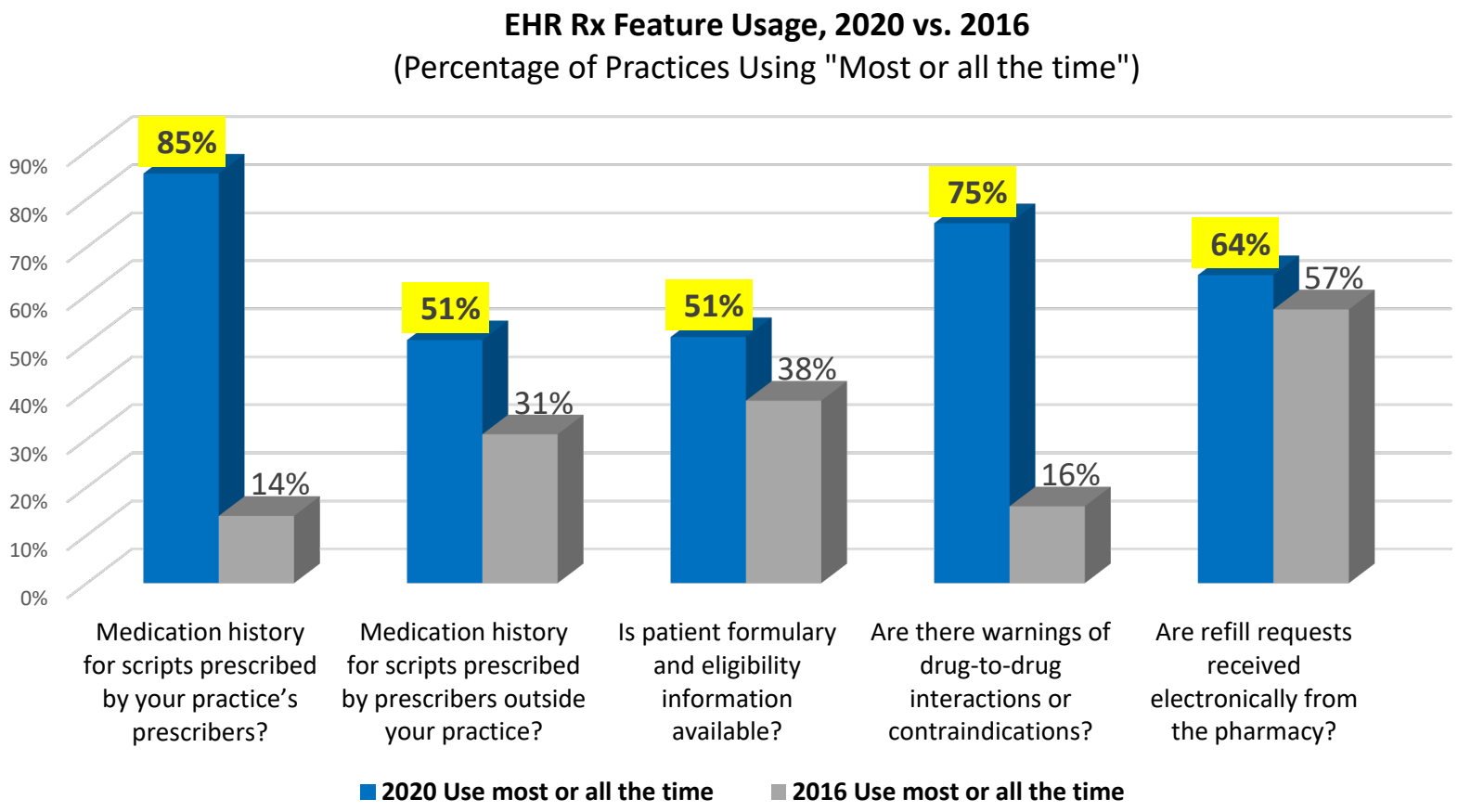
Usage of Rx features increased significantly between 2016 and 2020, as shown in the chart below:



# PDMP

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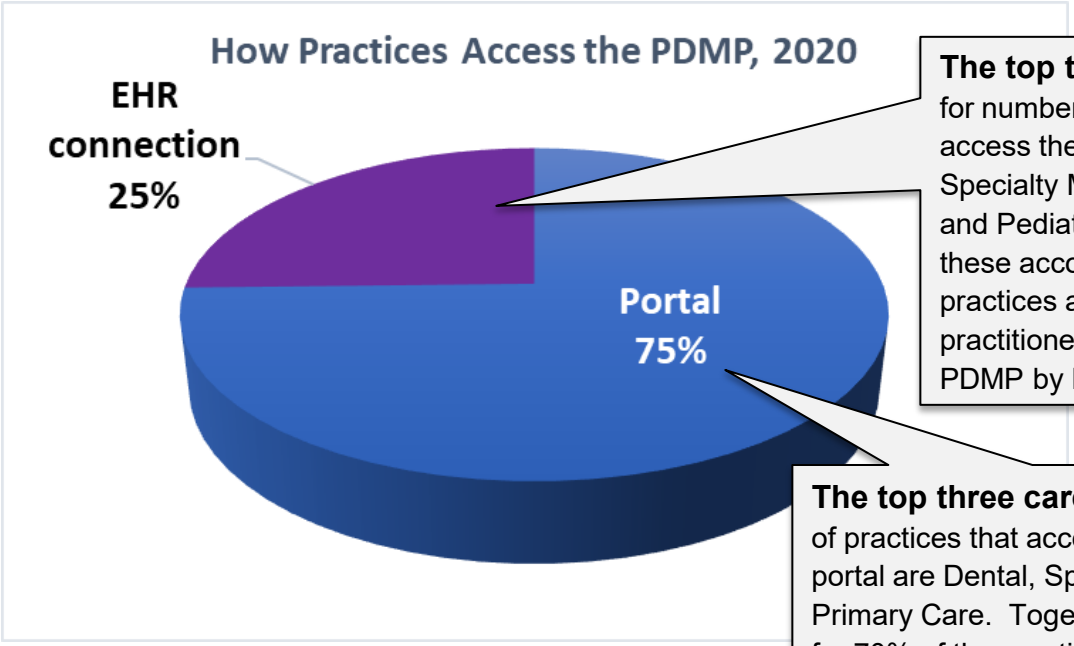
Almost half of surveyed practices do not access the Pennsylvania Prescription Drug Monitoring Program (PDMP). Of those that DO access the PDMP, 75% use the portal and 25% are able to access it through their EHR.




**The top three care areas** for number of practices that access the PDMP via EHR are Specialty Medical, Primary, and Pediatric Care. Together, these account for 82% of the practices and 92% of the practitioners accessing the PDMP by EHR.

**The top three care areas** for number of practices that access the PDMP via portal are Dental, Specialty Medical, and Primary Care. Together, these account for 70% of the practices accessing the PDMP by portal.

To help prevent prescription drug abuse, Pennsylvania's Prescription Drug Monitoring Program (PA PDMP) collects information on all filled prescriptions for controlled substances.

As of January 1, 2017, all Schedule II-V dispensed prescriptions must be reported by dispensers to the PDMP system no later than the close of the subsequent business day

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# Survey Findings

## Care Management, Patient Engagement, and Patient Population Analytics

# Care Management

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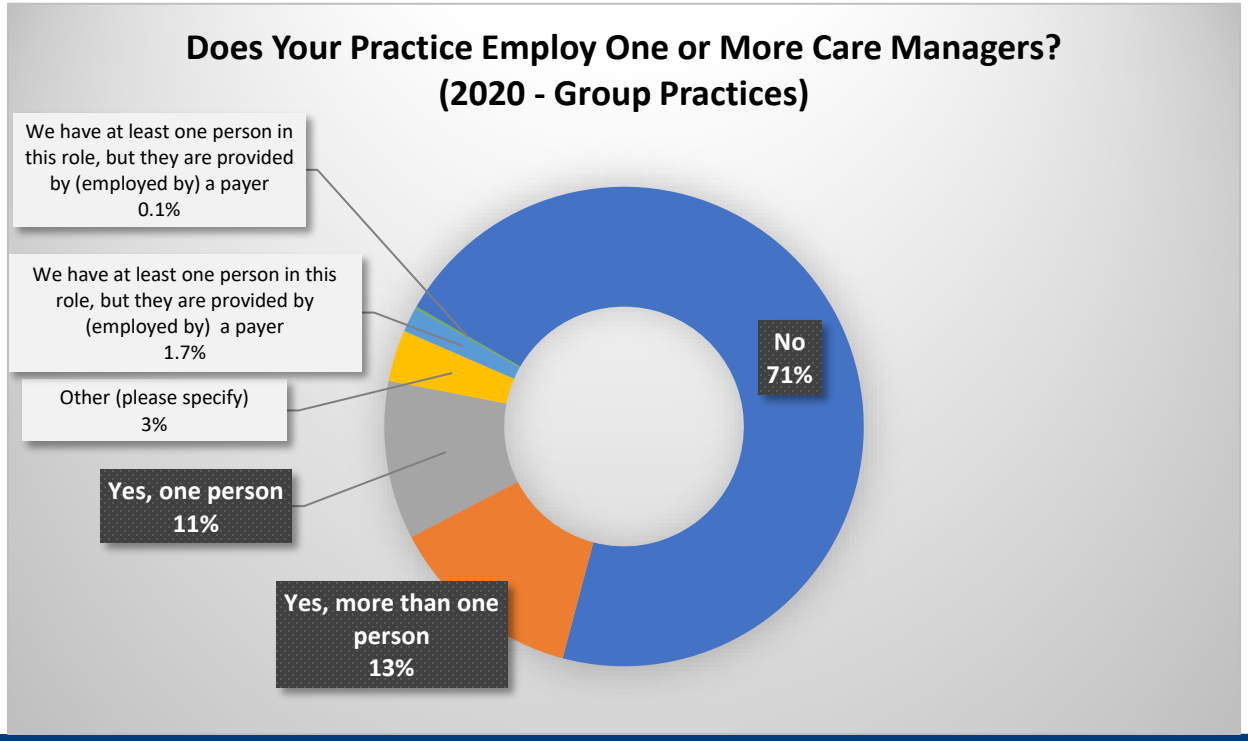
About a quarter (24%) of practices employ one or more persons whose primary role is to conduct care management, and another 1.7% have at least one person in this role, but they are provided by a payer. Three-quarters of practices have no one dedicated to care management. Many of the “other” answers indicated that the practitioners (doctors, nurses) at their practices are cross-trained to take care of their patients' care management.



# Care Management Methods

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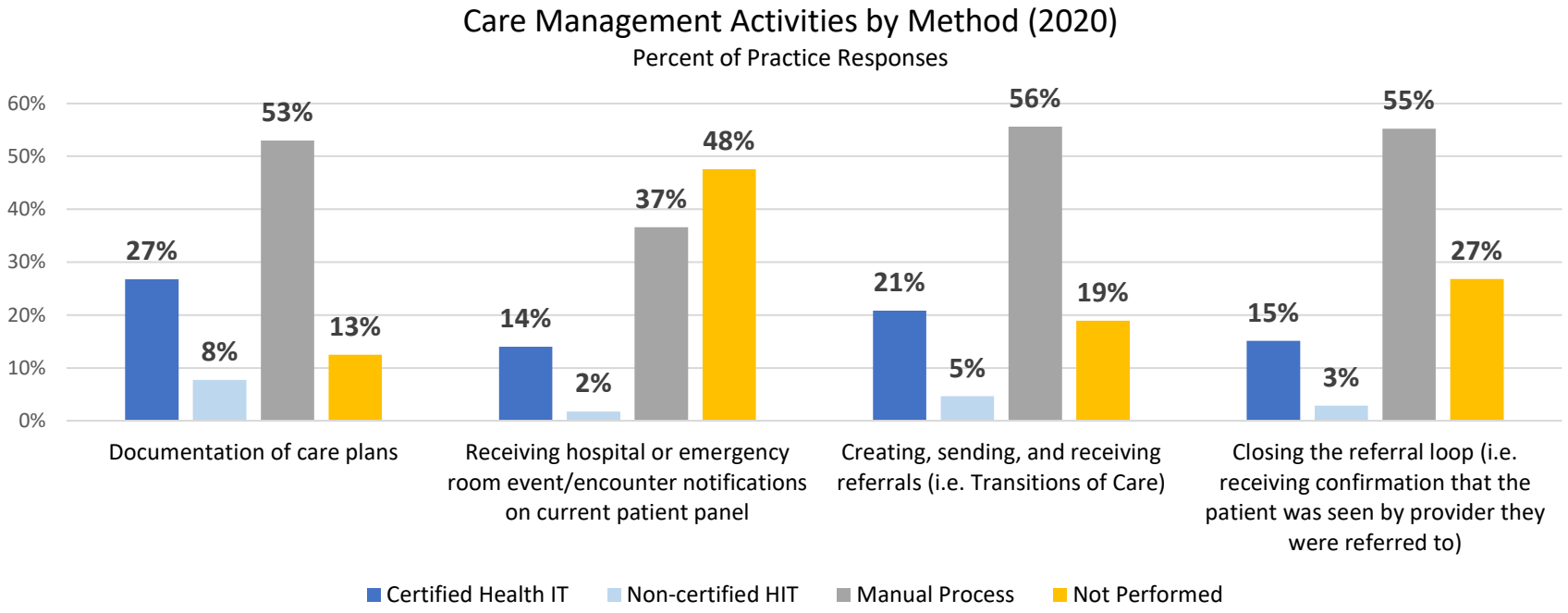
Care management activities are still carried out most often by manual methods. Compared to use of certified HIT, practices are almost four times more likely to close the referral loop manually, almost three times more likely to create/send/receive referrals manually, and 2.6 times as likely to receive hospital or emergency room event notifications manually. Of the four activities surveyed, "documentation of care plans" is the one most likely to be done with certified HIT, but only 35% of practices are using any health IT for this function.



# Transitions of Care (All Practices)

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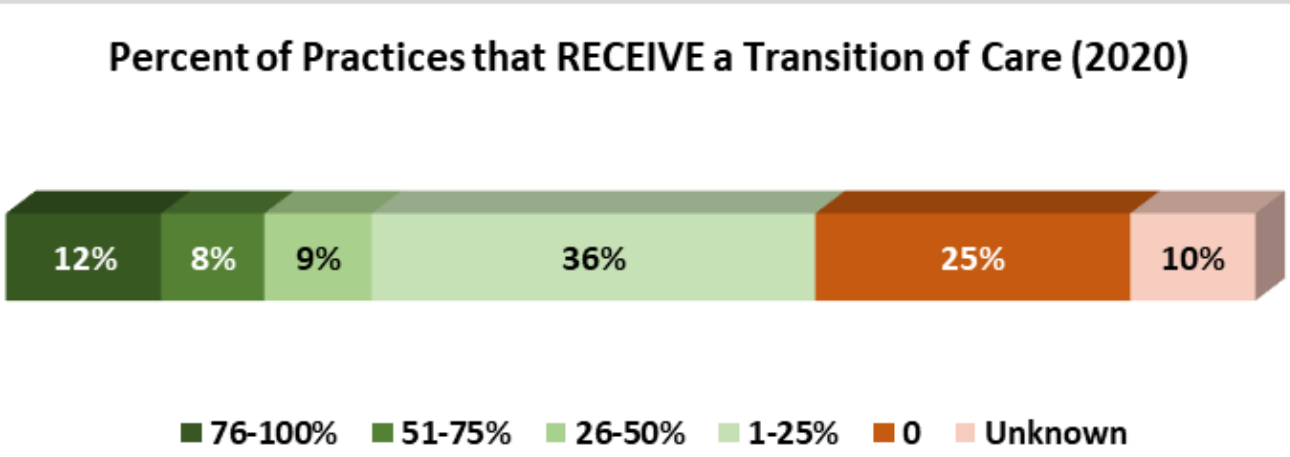
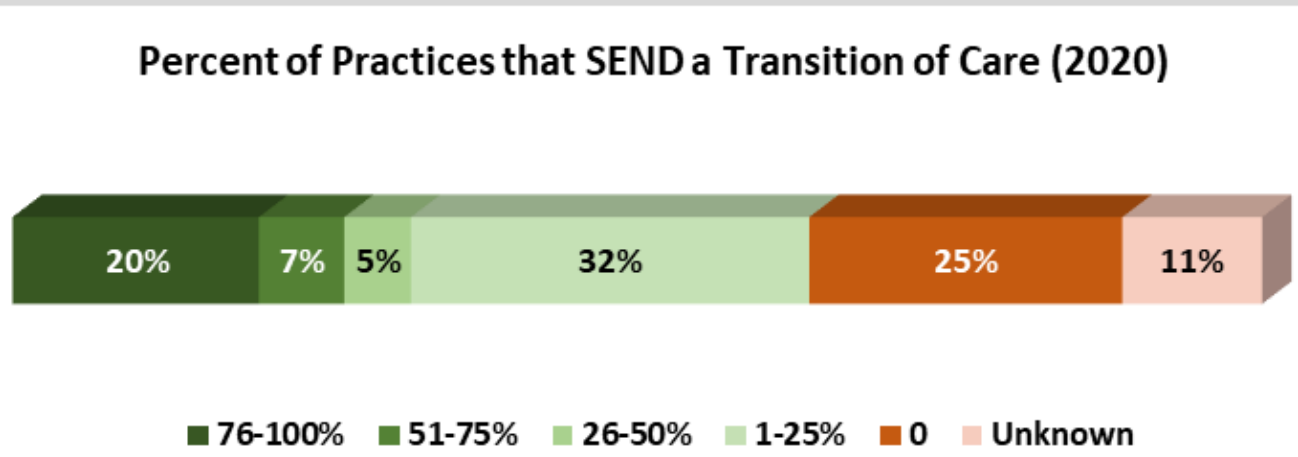
Each practice was asked to estimate the percentage of its patients for which it RECEIVES and SENDS Transitions of Care/Referral Care Summaries by any method. About a quarter of practices do not receive or send any. Only 12% report receiving TOC for 76% to100% of patients while 20% report sending TOC for 76% to 100% of patients. A third of all practices receive a TOC for 1% to 25% of patients, and a third send a TOC for 1% to 25% of patients.



# Transitions of Care (EP Practices)

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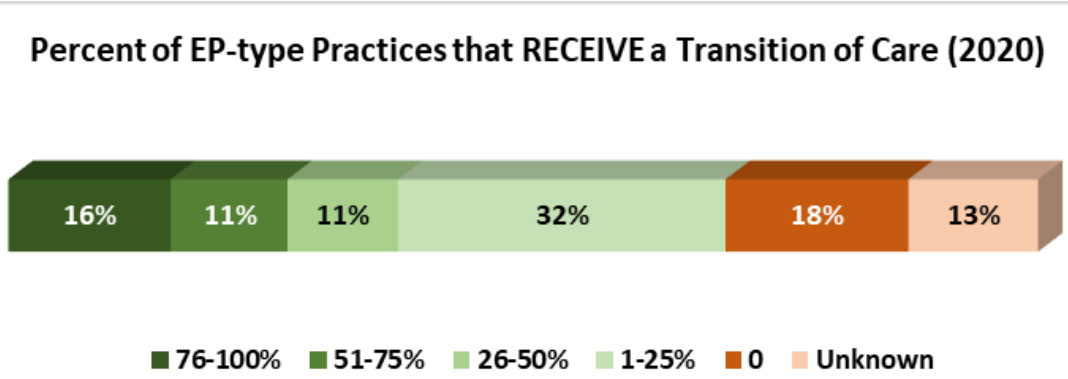
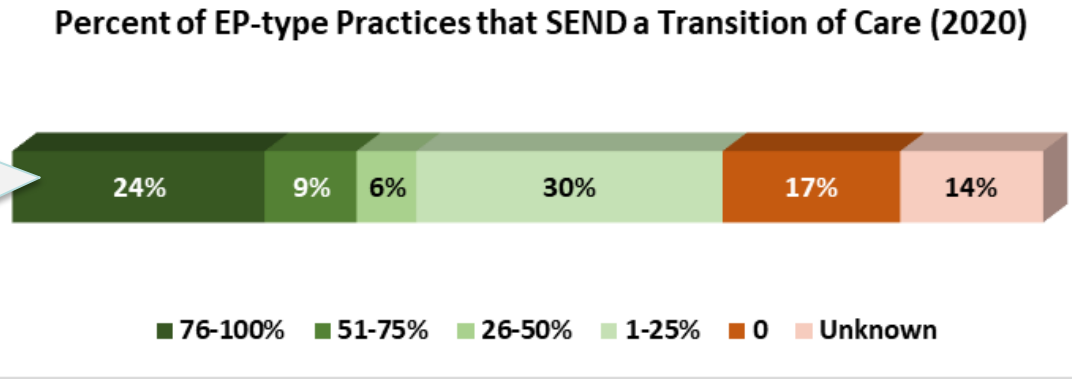
EP-type practices reported a slightly-higher rate of receiving and sending TOCs. Still, nearly a fifth of these practices do not receive or send any. Only 16% report receiving TOC for 76% to100% of patients while 24% report sending TOC for 76% to 100% of patients. 32% of EP-type practices receive a TOC for 1% to 25% of patients, and 24% send a TOC for 1% to 25% of patients.

About half (51%) of practitioners in EP-type practices are employed in this group that sends TOCs most often, but only 12% of practitioners are employed in the EP-type practices that receive TOCs most often, indicating the larger group practices are sending TOCs, but are not being sent them most of the time.



# Transitions of Care: How Sent?

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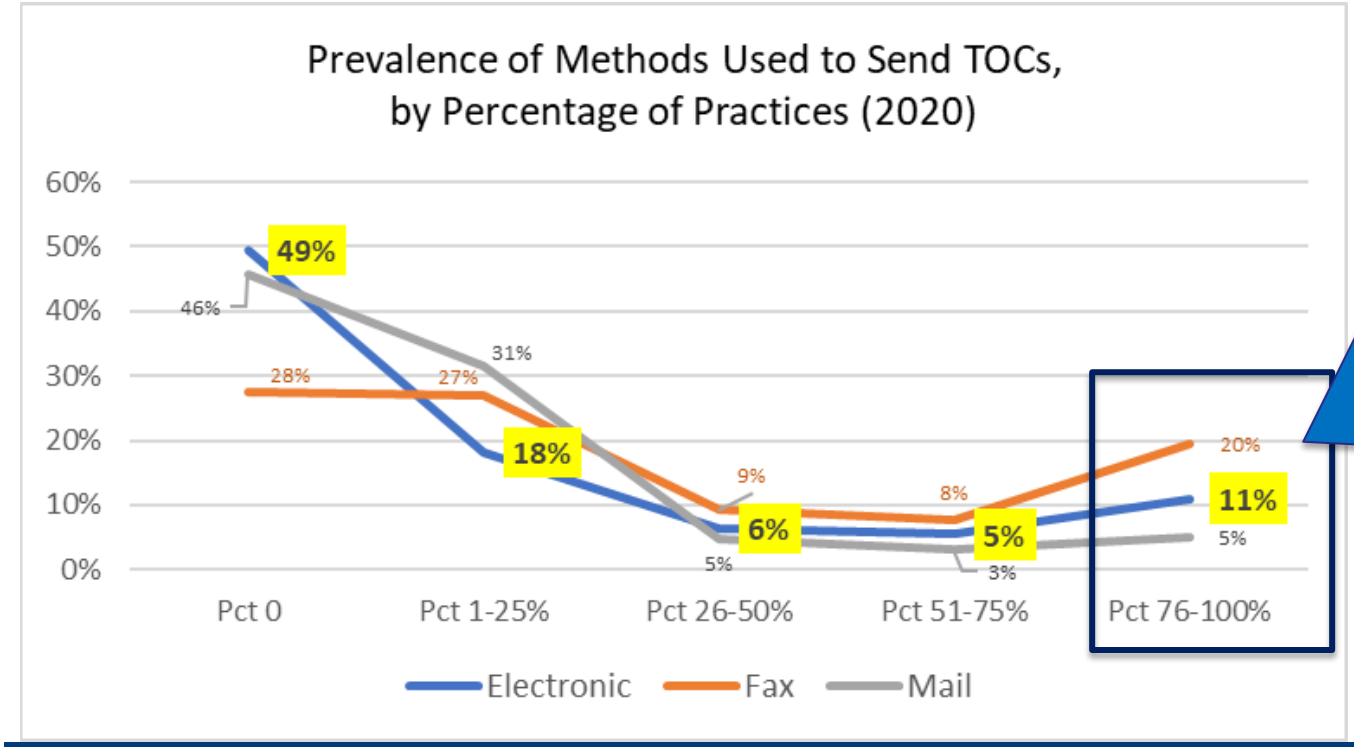
Each practice was asked to estimate the percentage of Transitions of Care/Referral Care Summaries that it sends electronically, via fax, and via mail to other practices, organizations, or facilities. Half said that they do not use electronic means at all, and only 11% use electronic means 76-100% of the time. By contrast, 20% use fax, and 5% use mail 76-100% of the time.




Twenty percent of practices send Transition of Care information for most of their patients by fax, while only 11% use electronic means. Five percent most often use “snail mail.”

# Patient Engagement

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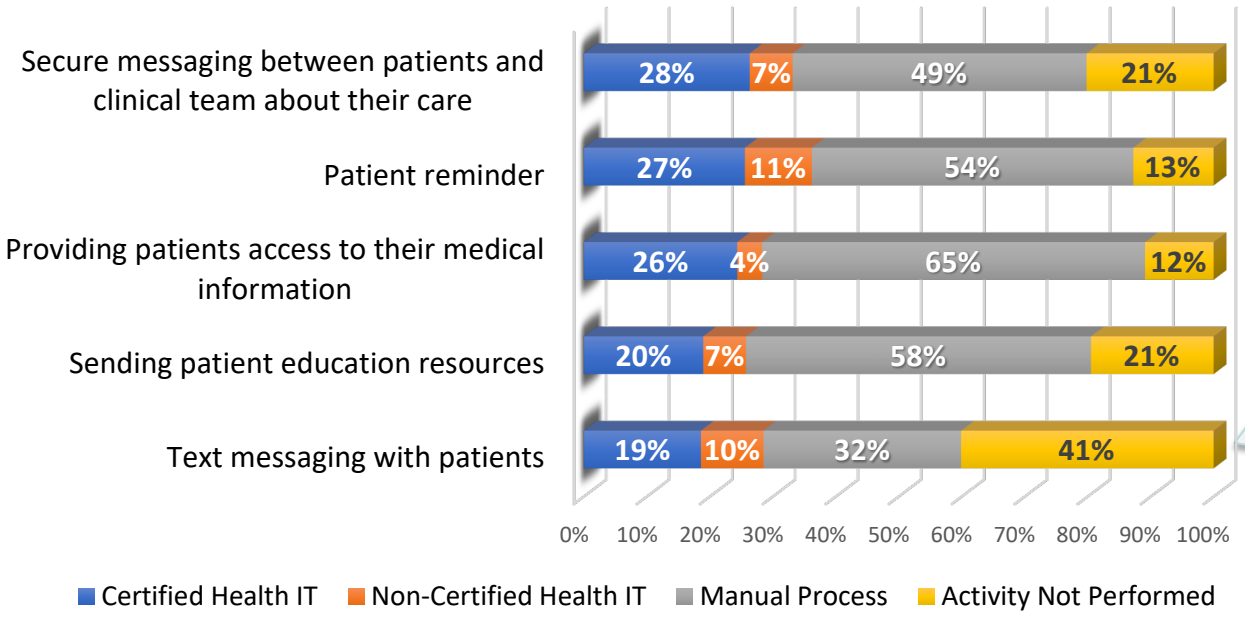
More than a quarter of practices are using certified HIT to send patient reminders, to provide patients access to their medical information, and for secure messaging capability. However, a larger percentage of practices perform these patient engagement activities manually, and 12% to 41% do not perform them at all.

**HIT Use for Patient Engagement (2020)**

(Percent of Practices)




Most results on this graph are similar to those observed from the 2016 environmental scan. However, there has been a significant increase in text messaging with patients in the last four years. Overall, texting is up by 49% since 2016. Texting via HIT is up 45% and via manual means by 52%.

# Patient Engagement

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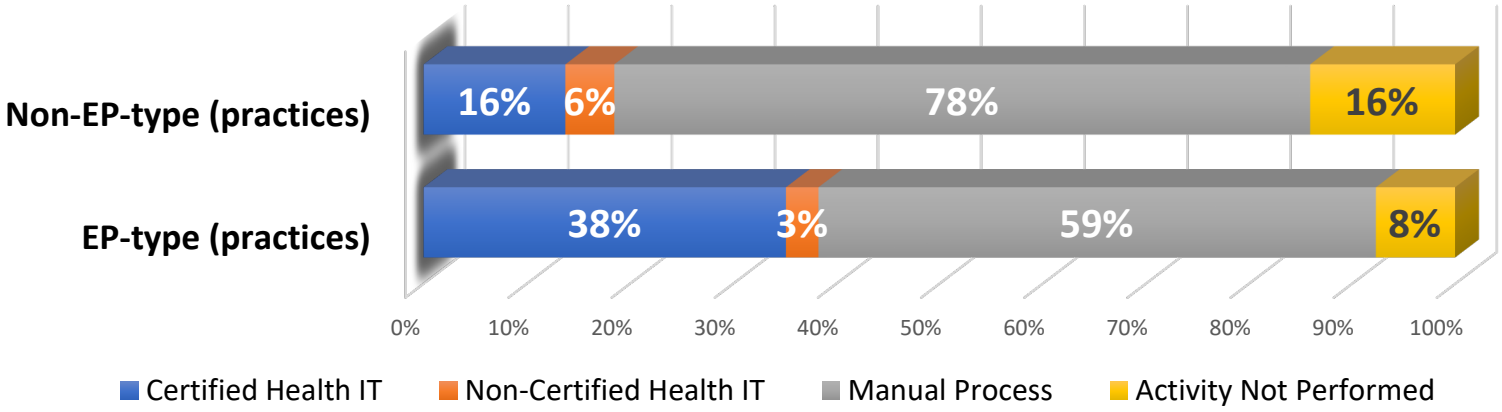
EP-type practices are far more likely than non-EP types to use certified HIT to share data with patients (38% vs. 16%.) When use of non-certified HIT is added, 41% of EP-type practices share data electronically – compared to the 59% that use a manual process. Over three quarters (78%) of non-EP-type practices employ a manual process, and only about a fifth use HIT (16% certified and 6% non-certified.)

**Methods of providing patients access to their medical information – EP-type Practices vs. Non-EP-type**
(Percent of Practices)



# Online Patient Portal

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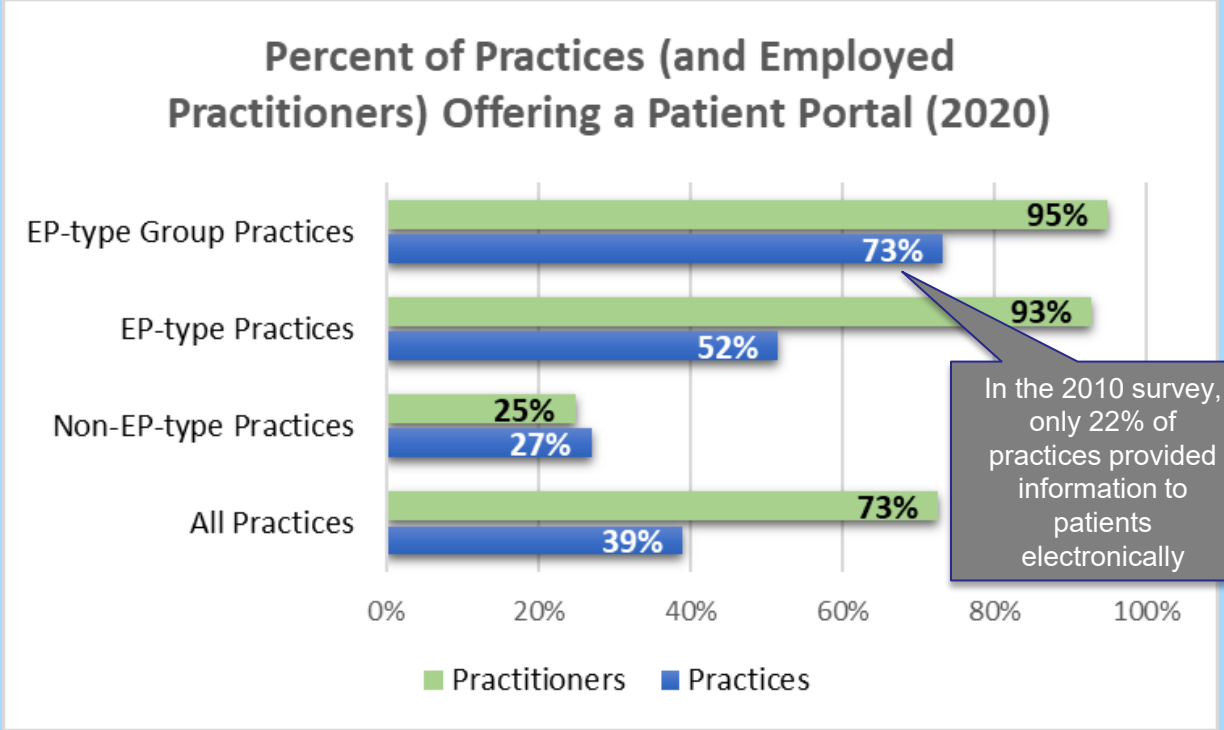
Overall, 39% of practices (employing 73% of practitioners) offer a patient portal. However, EP-type practices are much more likely than non-EP-type practices to offer a patient portal, and among EP-type practices, group practices are more likely than solo practices. For EP-type group practices, nearly three-quarters (73%) of practices (representing 95% of practitioners in this category) offer a portal. But only a quarter of the non-EP-type practices offer a portal.




Of the practices that offer an online patient portal, 88% indicated their portal is integrated into their EHR system. Three-quarters of practices offering a patient portal also offer an "app" that enables patients to access their online patient portal via a mobile device (smartphone, tablet, etc.) to access the portal. This is up from 59% in 2016 – an increase of 16 percentage points in four years, perhaps aided by the standardization of FHIR 4 for APIs.

# Online Patient Portal Functions

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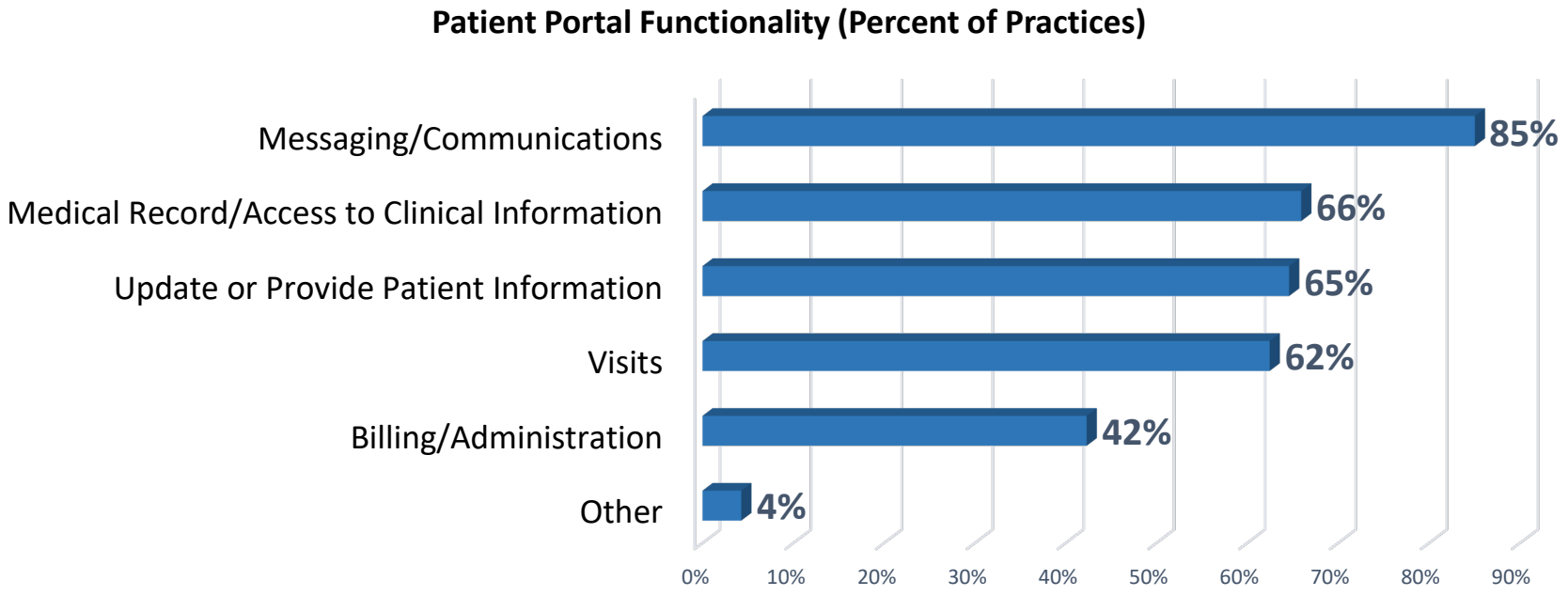
Of the online patient portals offered by survey respondents, 85% offer a means of messaging/communication between the patient and the practice, 66% offer access to the patient's medical record, 65% allow the patient to enter or update patient information, 62% enable the patient to schedule office visits, and 42% are linked to a billing/administration system.



# Patient Population Analytics

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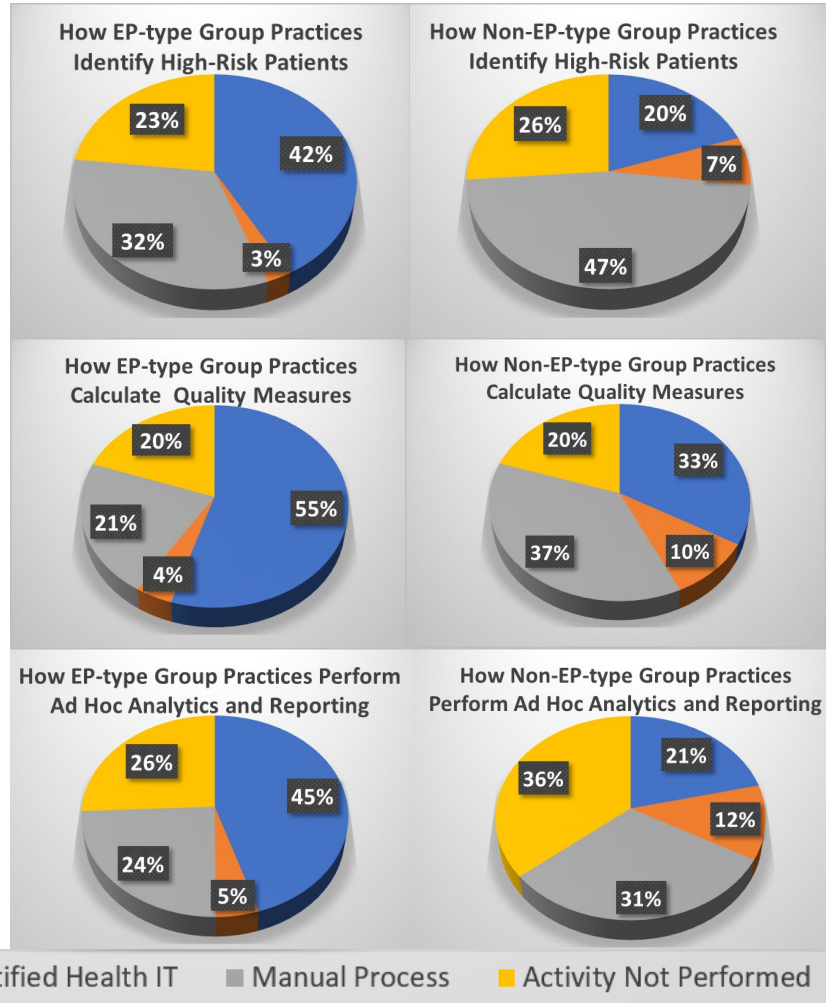
Practices were asked how they conduct certain patient population analytics. While 42% of EP-type practices use certified HIT to identify high-risk patients, only 20% of non-EP-type practices do. Fifty-five percent of EP-type practices use certified HIT to calculate quality measures, compared to 33% of non-EP-type practices.

Forty-five percent of EP-type practices use certified HIT to perform ad hoc analytics and reporting compared to only 21% of non-EP-type practices.



# Barriers: Care Management, etc.

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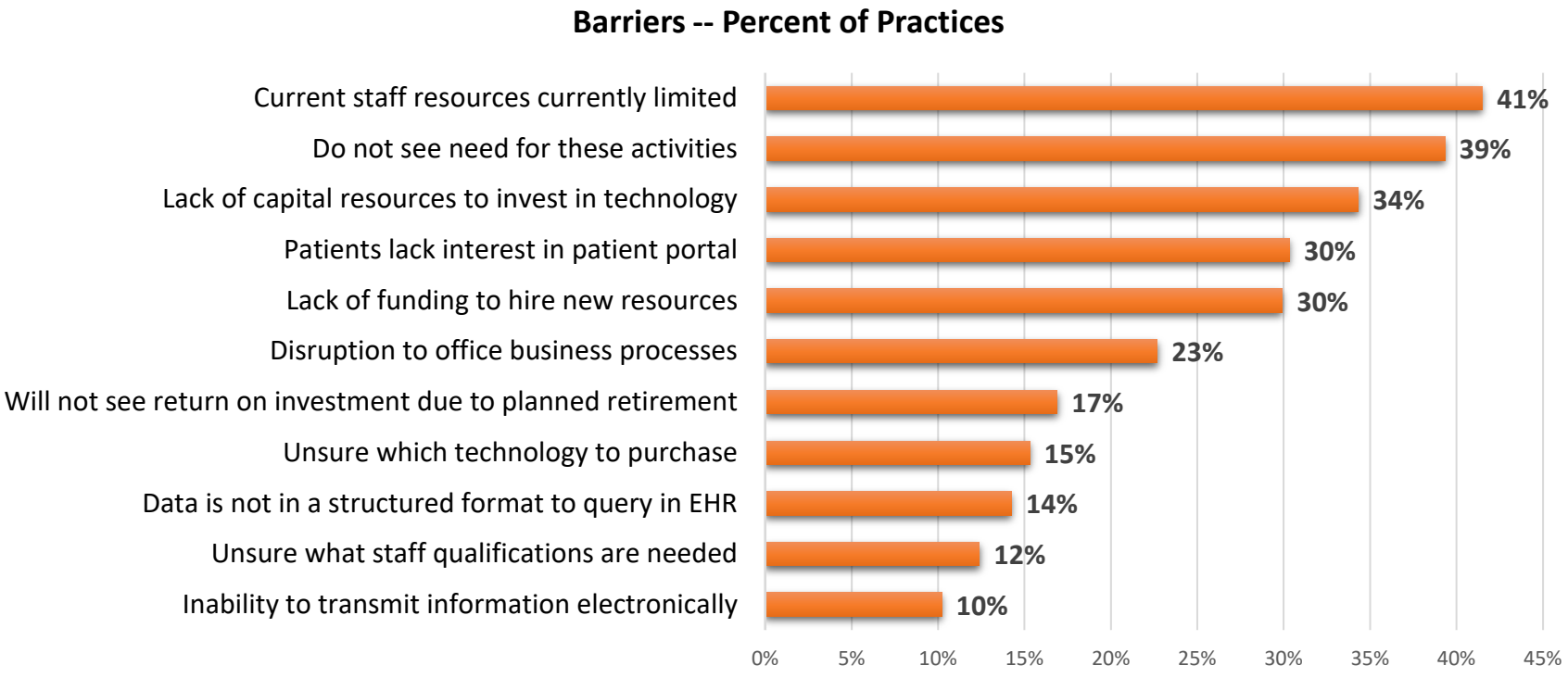
Survey-takers were asked to identify the barriers associated with care management, patient engagement, and population health analytics activities for their practices. The biggest barrier -- listed by 41% of practices -- was "current staff resources currently limited." A close second (39%) was "do not see need for these activities," followed by "patients lack interest in patient portal," "lack of capital resources for technology," and "lack of funding to hire new resources."



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Survey Findings

# Health Information Exchange (HIE)

# Methods of Sending/Receiving

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Each practice was asked to indicate the typical manner in which it sends, receives, or queries patient data. For each type of data, answer options were "EHR System," "HIO," "Fax," and "Other." Some survey-takers selected more than one method. The table on the next slide shows responses by percentage of all mentions per data type.

- **Medication history, summary of care, and care plan were the data types with the highest EHR System usage**, while radiology images and radiology reports experienced the lowest.
- **Faxing remains the most common method for all but radiology images and medication history**, ranging from 31% to 48% of mentions, with its greatest use related to summaries of care and radiology reports.
- **Only two to three percent** of all mentions, regardless of which data type, were related to use of an **HIO**.
- **About 40% of the 806 "other" responses** indicated that some combination of the following was used (sometimes in addition to electronic methods): **mail, email, secure email, fax, phone, hard copies, compact discs**.
- More than one-fourth of all responses indicated that **one or more of the reports in the question were not applicable to their practice type**, with many (especially pharmacies, dentists, and behavioral health practices) calling out radiology reports and imaging.

# Methods of Sending/Receiving

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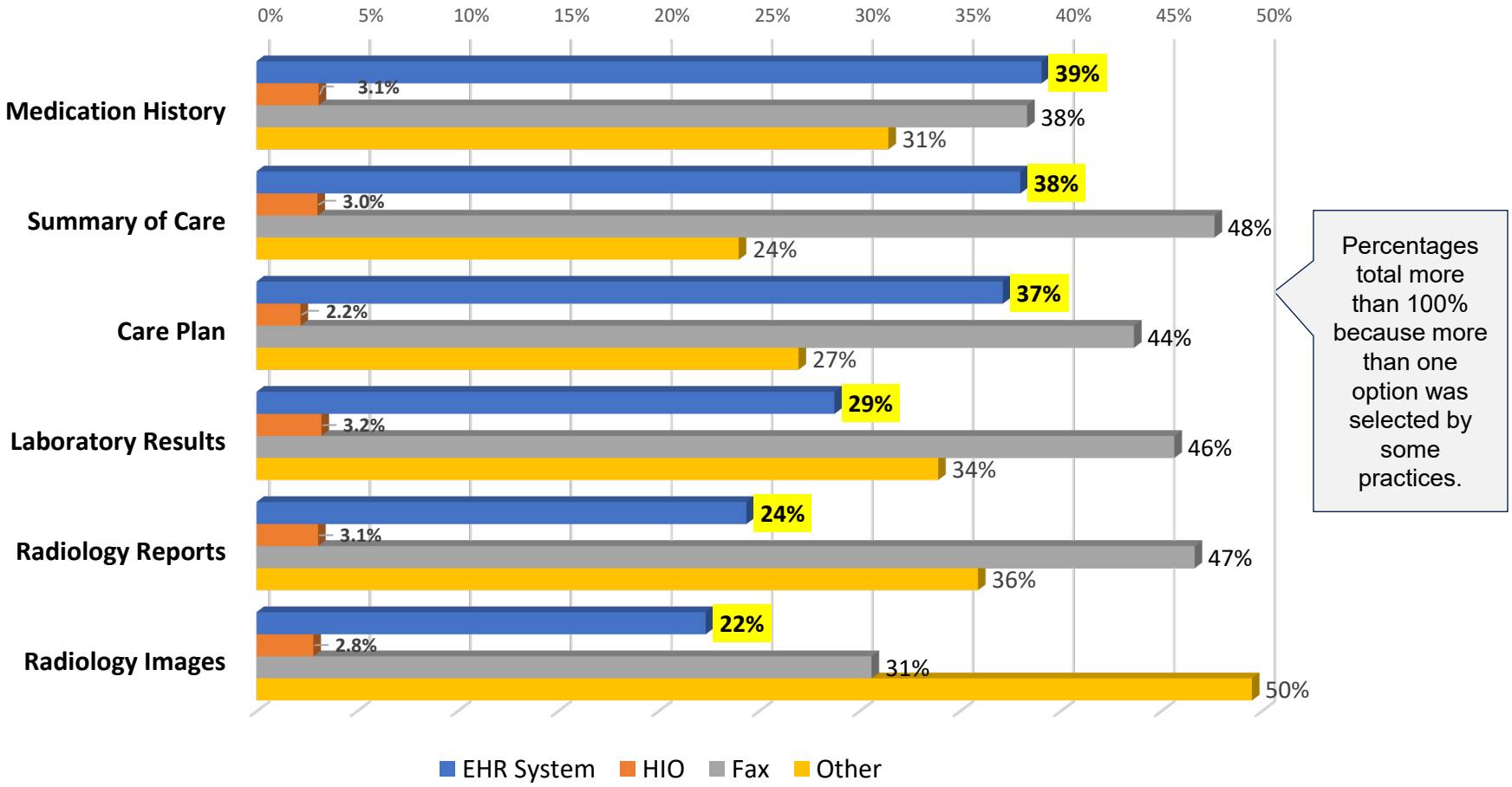
## Typical Methods for Sending/Receiving/Querying Specified Patient Data (2020)




Percentages total more than 100% because more than one option was selected by some practices.

# Destinations for Electronic Data

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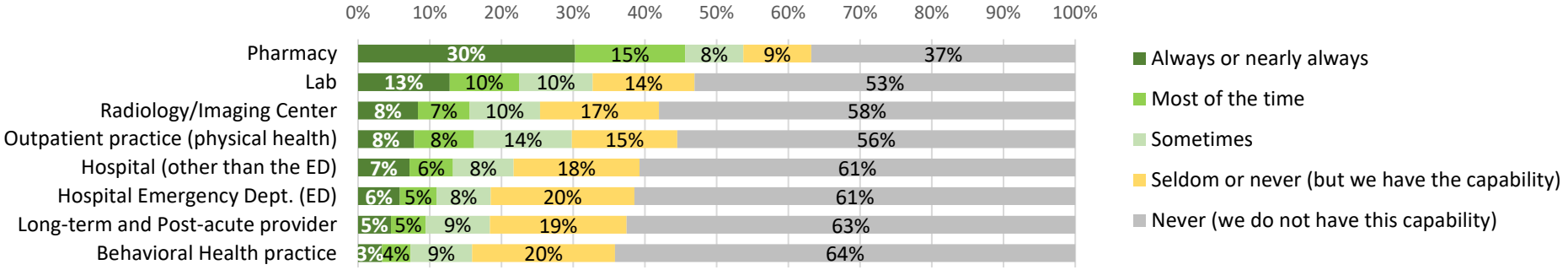
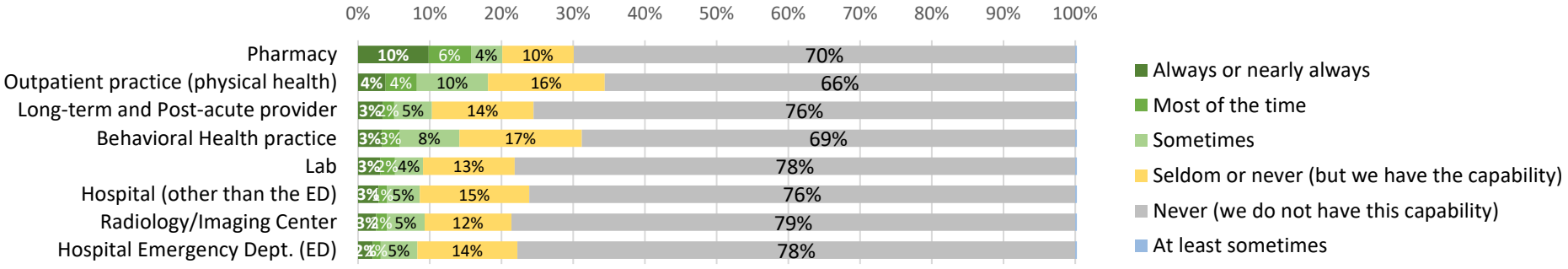
The percentages of practices sending this data electronically have not changed much since 2016. EP-type practices in general are more likely to send patient data electronically (not including E-faxing) to facilities outside of their organizations. However, more than half report that they do not have the ability to send to facilities other than pharmacies.

**Percentage of EP-Type Practices that Send Patient Data Electronically to the Destination Types Listed**




**Percentage of Non-EP-Type Practices that Send Patient Data Electronically to the Destination Types Listed**



# Capability to Send (vs. 2010)

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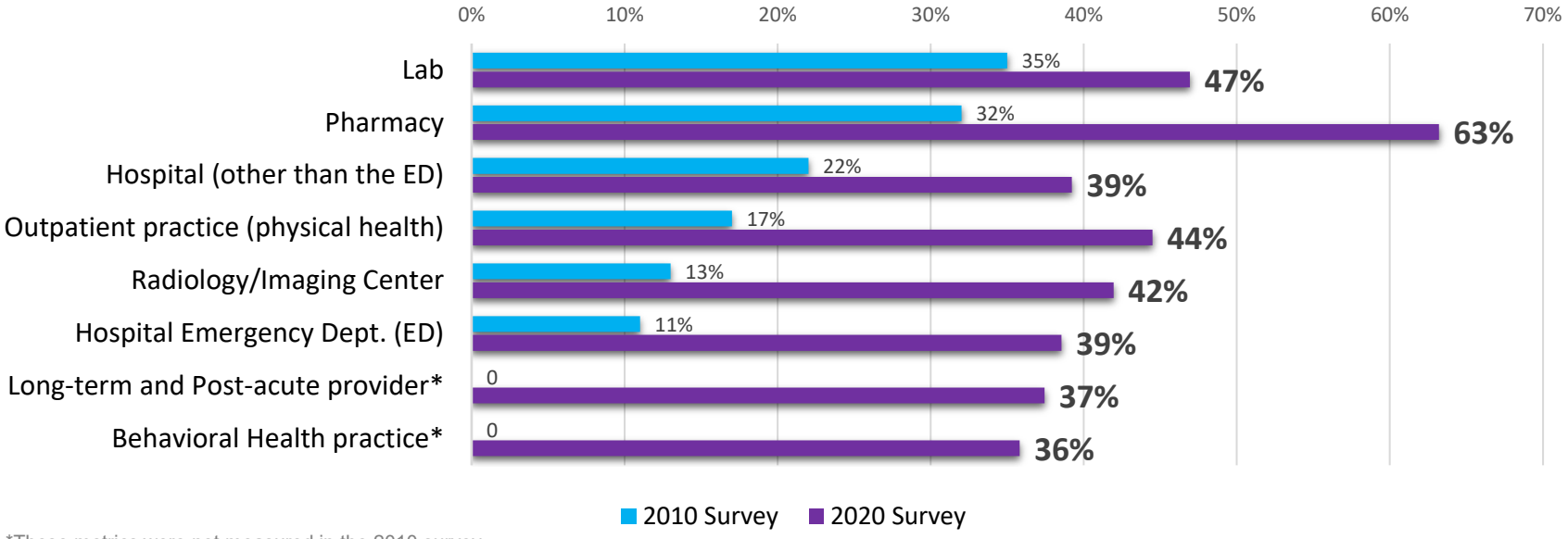
The percentage of EP-type practices with the capability to send patient data electronically to other facilities has increased dramatically since the 2010 provider HIT survey was conducted. The percentage able to send data to a hospital emergency department or radiology/imaging center has tripled, and roughly twice as many can send data to a pharmacy, other outpatient practice, or hospital emergency department. The portion that is able to send data to a lab has increased from about a third to about half.

**Capability to Send Patient Data Electronically, 2020 vs. 2010**




*These metrics were not measured in the 2010 survey.

# Methods of Sending Data

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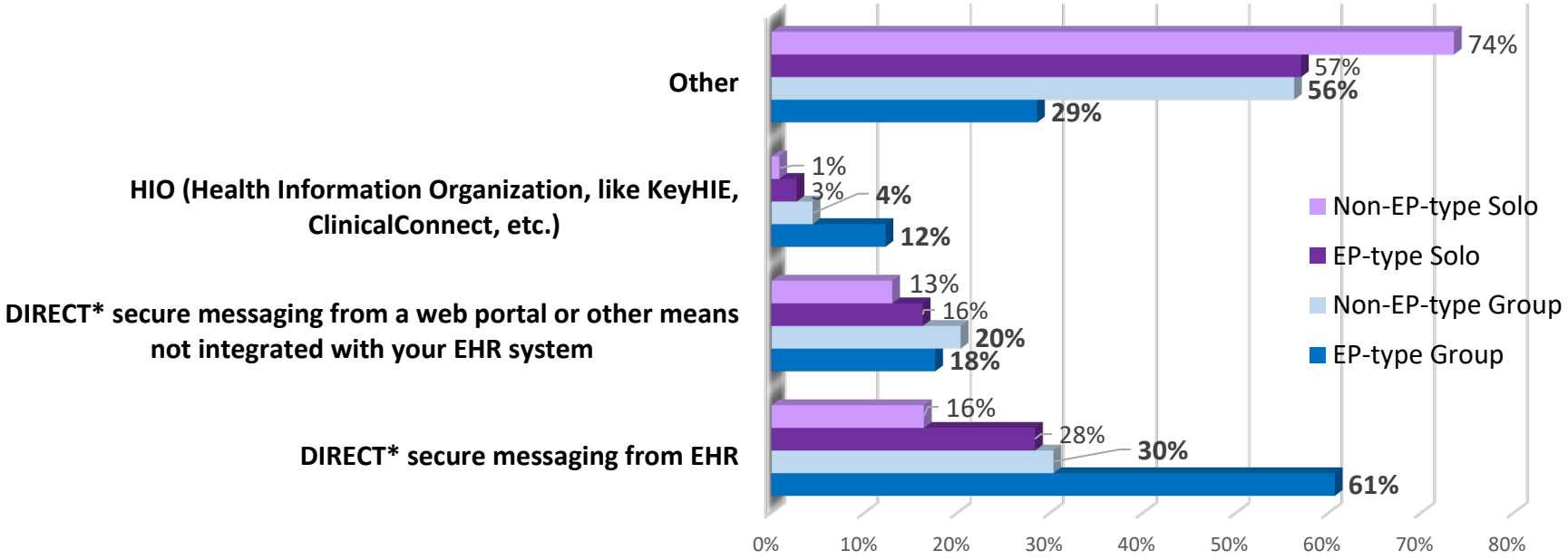
Among the respondents that use electronic methods to send information to other providers or health organizations, the most popular method is to use DIRECT secure messaging from their EHR. HIOs are rarely used. Among the respondents that don't use DIRECT secure messaging or HIO, the most-used methods are fax, mail, and email. EP-type group practices use DIRECT (from EHR) twice as much as non-EP-type group practices, and use HIOs for sending data three times as often.

**Percent of Practices Sending Health Information Electronically by Specified Methods**



# Methods of Sending Data

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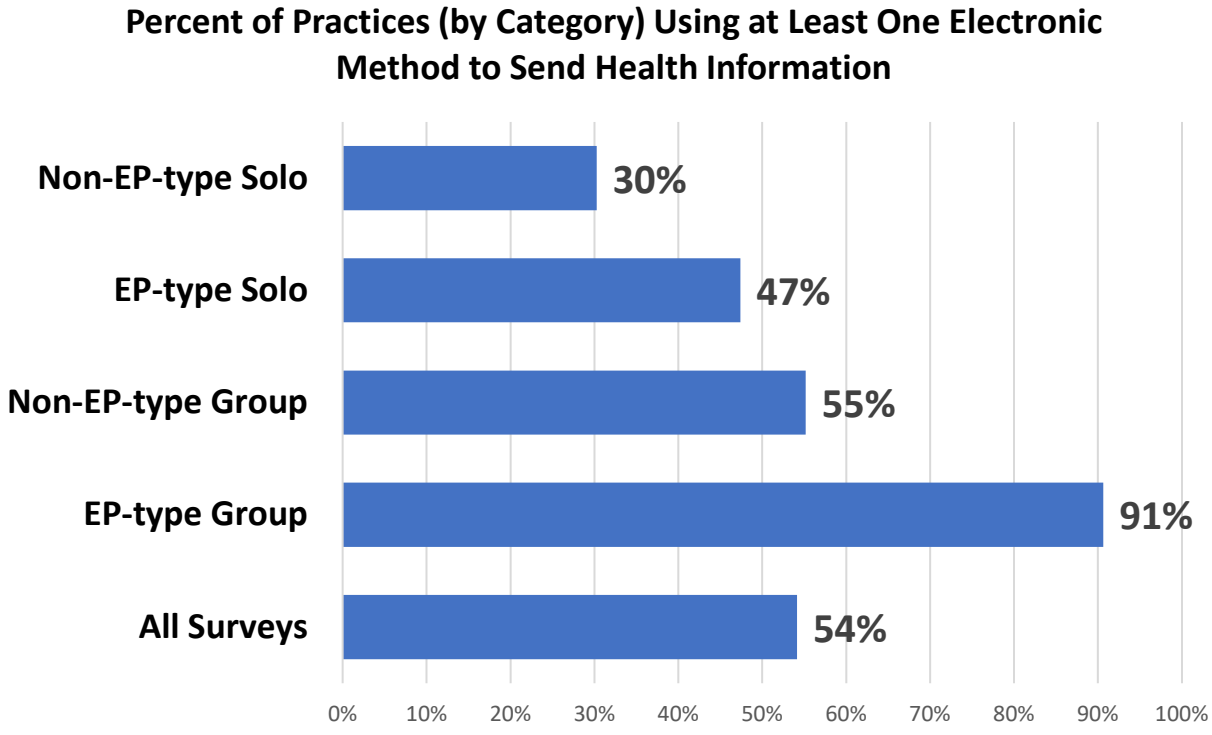
As shown below, there is a significant difference between EP-type and non-EP-type practices, as well as group and solo practices with regard to sending health information electronically. While 91% of EP-type practices are using at least one electronic method, only 55% of their non-EP-type counterparts are doing so. Rates for solo practices are less, with just 30% of non-EP-type practices using at least one electronic means.



# Senders of Electronic Data

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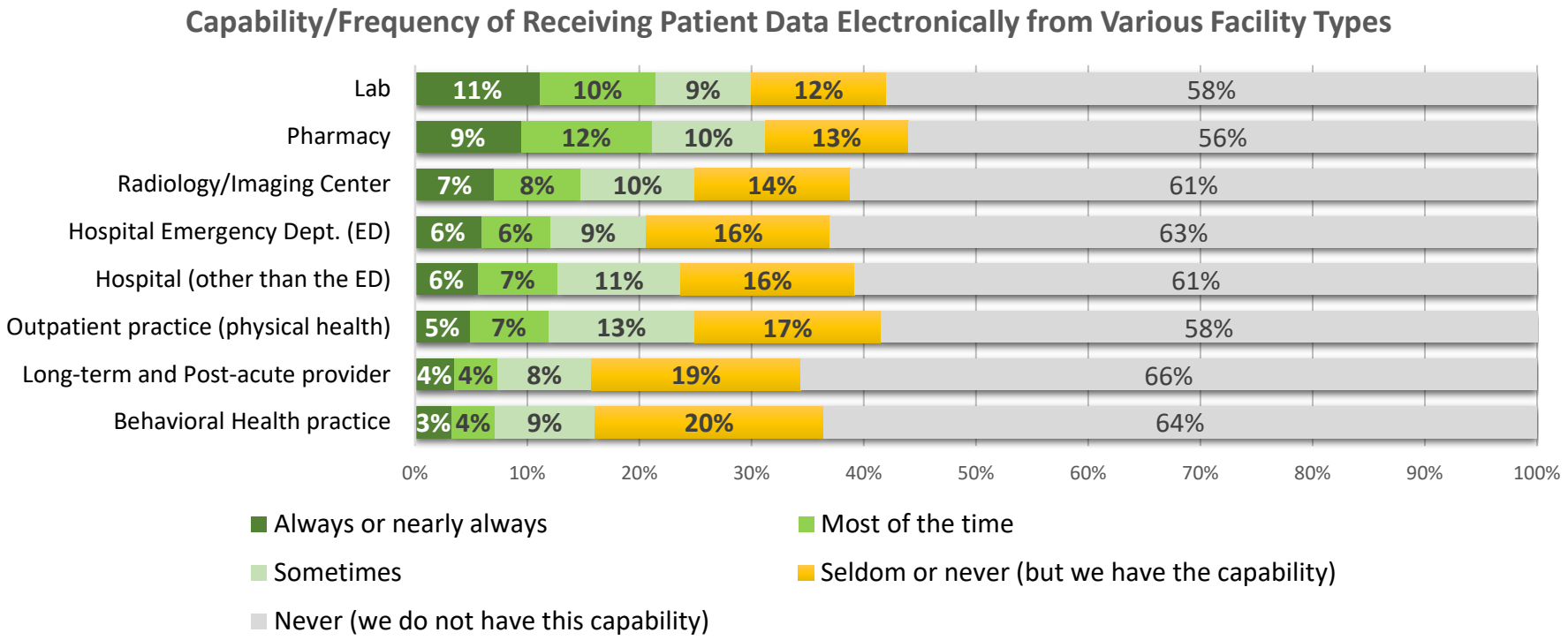
More than 40% of practices have the capability to receive patient data from labs and pharmacies, but less than a quarter of them receive it electronically most or all the time. Only about a third of practices can receive data electronically from long-term and post-acute providers and behavioral health practices, with just 4% and 3% receiving such data always or nearly always, respectively. About 12% to 15% receive data electronically most of the time from radiology/imaging centers, physical health outpatient practices, and hospitals.



# Senders of Electronic Data

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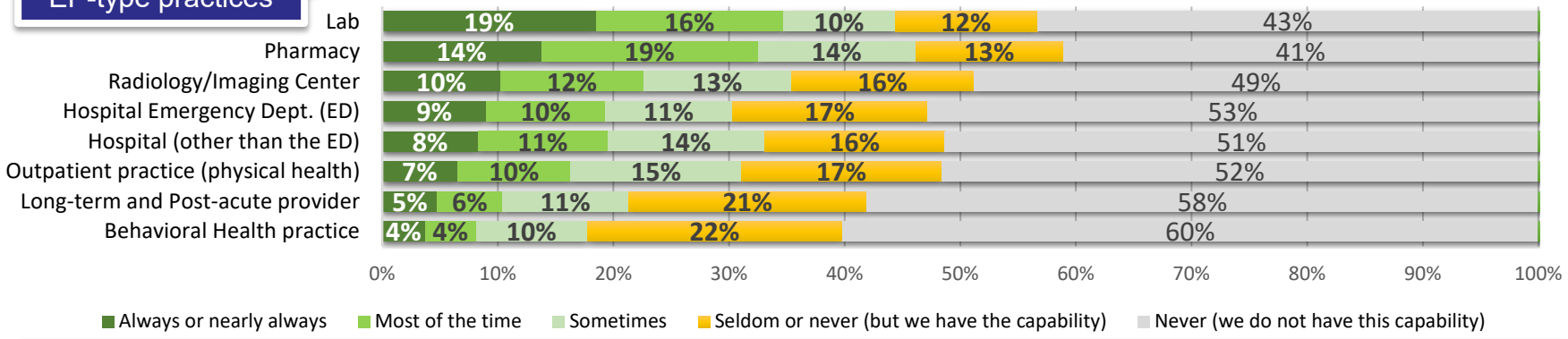
EP-type practices report more capability (40% to 60%) than non-EP types (27% to 34%) to receive patient data electronically from the specified source types, and more usage (up to 35% receiving data this way most or all the time, vs. up to 10%.)

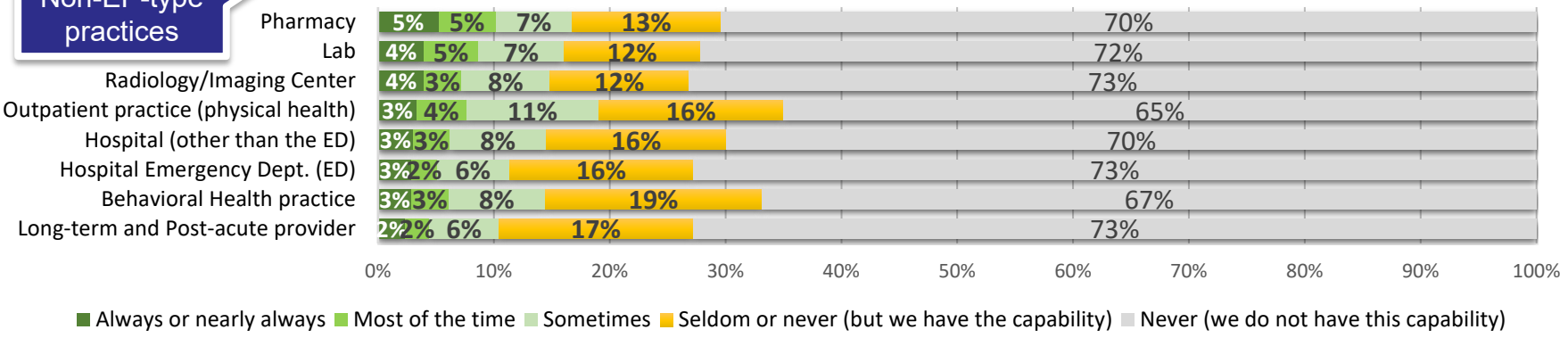
**EP-type Practices' Capability/Frequency of Receiving Patient Data Electronically from Various Facility Types**

EP-type practices




**Non-EP-type Practices' Capability/Frequency of Receiving Patient Data Electronically from Various Facility Types**

Non-EP-type practices



# HIO Participation

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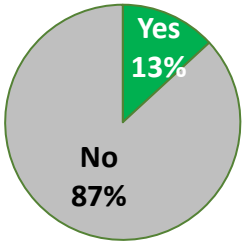
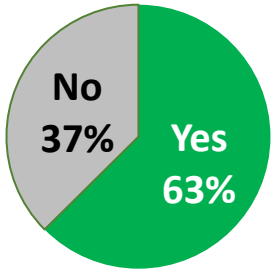
**Percent of Practices Participating with Any HIO**



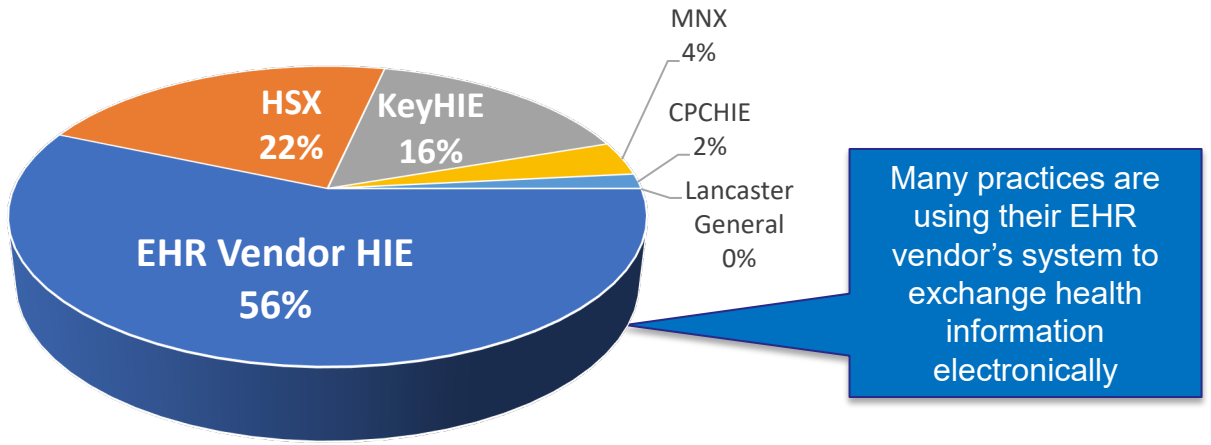

**Percent of Practitioners Participating with Any HIO**




Most practices (87%) are not participating with any HIO, but the 13% that do represent 63% of practitioners. More practices are using their EHR vendor's system for HIE than are using an HIO. Among those which are using an HIO, HSX had the most users, with KeyHIE in second.

- The "Other" answers indicate that most practices don't know if they participate in any HIO, or they don't even know what an HIO is. In hospital/health system-owned practices, the survey-takers may not know exactly how the owner organization has arranged for HIE services.
- Note that inpatient acute care hospitals – the most likely provider type to use HIO services -- were not included in this survey.

**Percent of Practices by HIO**



# HIO Services Used and Adding

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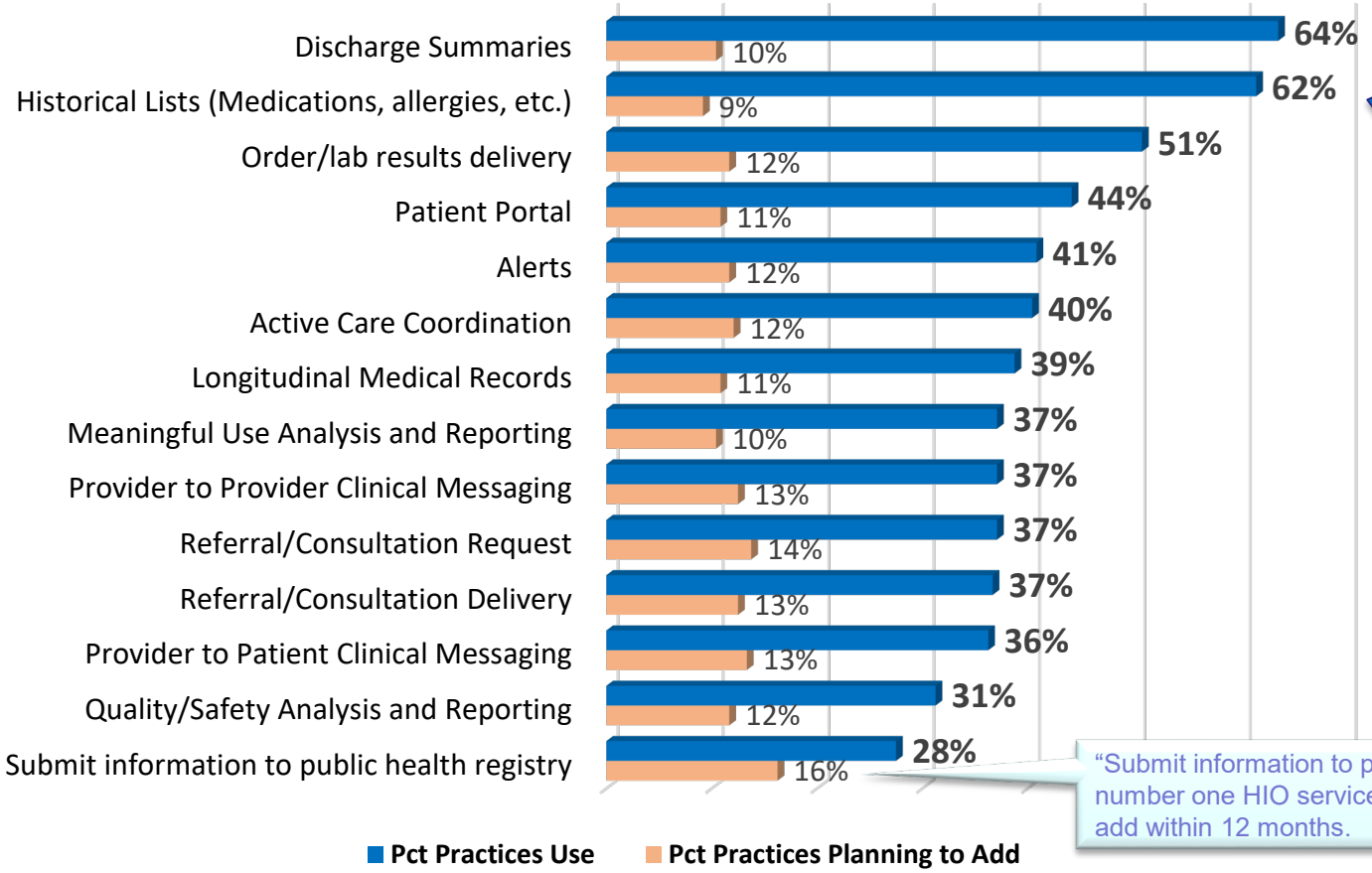
**HIO Services by Percentage of Practices Using Them**

(Also showing percentage of practices planning to add the service)




The top three HIO services used by surveyed practices are “discharge summaries,” “historical lists (medications, allergies, etc.),” and “order/lab results delivery.”

“Submit information to public health registry”” is the number one HIO service surveyed practices plan to add within 12 months.

# Reasons for using an HIO

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Practices that are using the services of an HIO were asked what the primary reason was for doing so.

Responses were grouped into themes, as shown at right. While the top reason was to exchange clinical data, 6% were unsure.

In 2016, 9% indicated they participated because of the government requirement (for Meaningful Use incentives, we assume), but no practices mentioned this in 2020. About 8% indicated they only use an HIO because the Health system to which they belong uses an HIO.

| Theme | Practices | Practitioners | Pct Practices | 2016 Pct Practices | 2020 vs. 2016 |
|---|---|---|---|---|---|
| **Exchange clinical data** | **43** | **4,694** | **26%** | **13%** | **13%** |
| **misc.** | **30** | **579** | **18%** | **10%** | **8%** |
| **Improve Communication** | **10** | **1,267** | **6%** | **6%** | **0%** |
| **Unsure** | **10** | **126** | **6%** | **12%** | **-6%** |
| **Continuity of Care** | **8** | **68** | **5%** | **13%** | **-8%** |
| **Convenience** | **8** | **80** | **5%** | **0%** | **5%** |
| **Improve Coordination of Care** | **8** | **1,277** | **5%** | **2%** | **3%** |
| Lab/imaging results | 7 | 75 | 4% | 5% | 0% |
| Patient Care Quality | 6 | 1,224 | 4% | 2% | 2% |
| Required | 6 | 912 | 4% | 0% | 4% |
| Report healthcare measures | 5 | 17 | 3% | 2% | 2% |
| ACO compliance | 4 | 146 | 2% | 0% | 2% |
| Track Inpatient Admissions/Discharges | 4 | 78 | 2% | 3% | -1% |
| Timeliness and/or accuracy of data available | 4 | 16 | 2% | 0% | 2% |
| To meet MU requirement | 2 | 38 | 1% | 0% | 1% |
| Securely share info | 2 | 27 | 1% | 0% | 1% |
| Access to Patient Info. | 2 | 11 | 1% | 3% | -2% |
| Part of health system that joined | 2 | 8 | 1% | 8% | -6% |
| Forced by insurers | 1 | 3 | 1% | 2% | -1% |
| Pharmacy Data | 1 | 1 | 1% | 2% | -1% |
| Government requirement | 0 | - | 0% | 9% | -9% |
| Reduce workload | 0 | - | 0% | 8% | -8% |
| View old records | 0 | - | 0% | 2% | -2% |
| Decided by someone else | 0 | - | 0% | 2% | -2% |
| Total | 163 | 10,647 | 100% | 100% | 0% |

# HIO Services – Barriers

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Half of the 1,849 practices that answered a question about barriers to utilizing HIO services indicated that they are not familiar with HIO services and about one-fifth do not know which HIO(s) offer service where they are located. A quarter of respondents have cost concerns, making that the number two barrier. Only 3% of practices are affiliated with a Health System with HIO services, while 7% do not need HIO services because their EHR vendor provides their health exchange services.
A quarter of the 184 "other" responses said HIO services are not applicable to their practice. Twelve percent said HIO services are not needed.

| Rank | Response | Practices | Pct of Practices |
|---|---|---|---|
| 1 | **Not familiar with HIO services** | 921 | **50%** |
| 2 | Cost concerns | 456 | **25%** |
| 3 | Lack of staff expertise using health IT | 371 | **20%** |
| 4 | I do not know which HIO(s) offer service where my practice is located | 346 | **19%** |
| 5 | Insufficient benefits from HIO services (i.e. lower cost, higher quality, improved safety) | 328 | **18%** |
| 6 | Will not see return on investment due to planned retirement | 255 | **14%** |
| 7 | Concerns regarding patient privacy and/or security | 175 | **9%** |
| 8 | Workflow redesign to use HIO services | 154 | **8%** |
| 9 | Current EHR product does not support data exchange | 132 | **7%** |
| 10 | My EHR vendor provides me with these services so I have no need for HIO services | 132 | **7%** |
| 11 | The Health System I am affiliated with has HIO services, so I have no need for other HIE services | 59 | **3%** |

This was the number one barrier in 2016, too..

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Survey Findings

# Telemedicine Services

# HIT For Telemedicine Service

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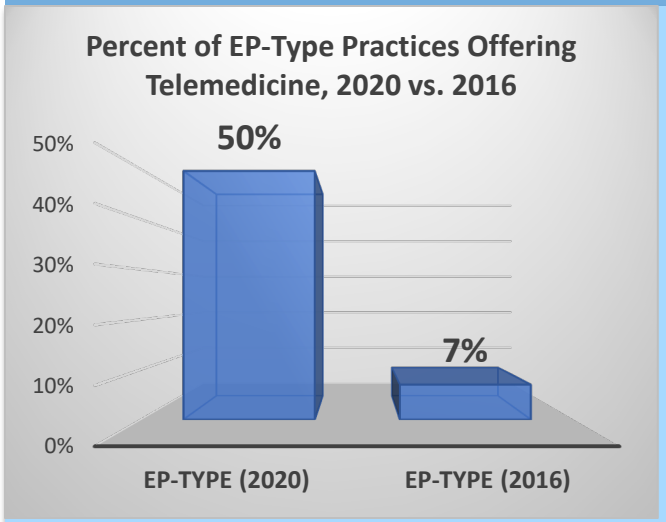


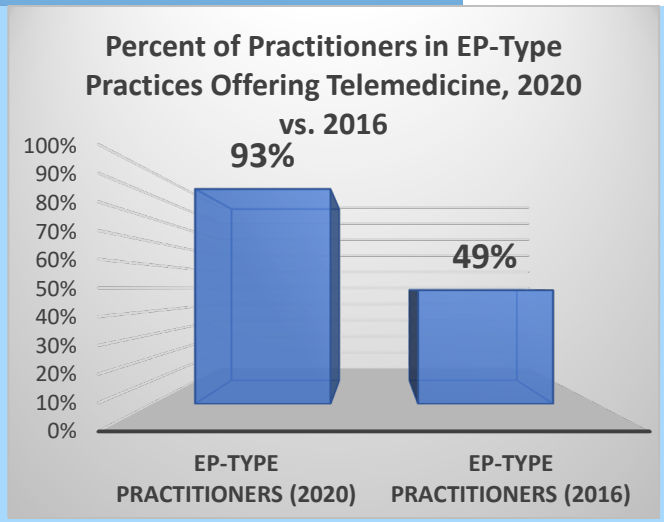


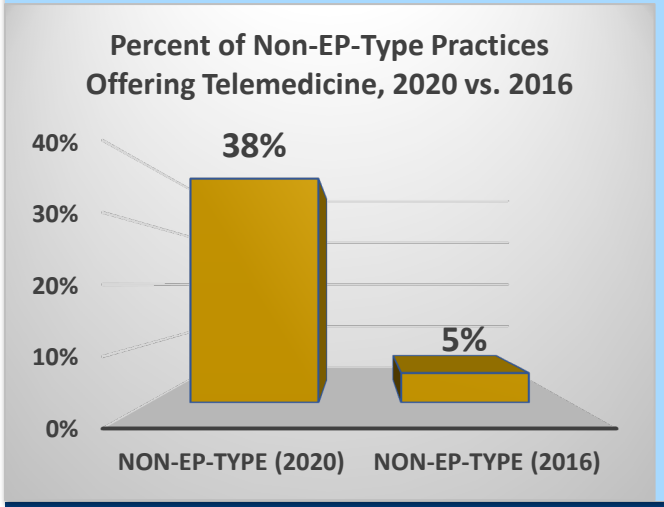


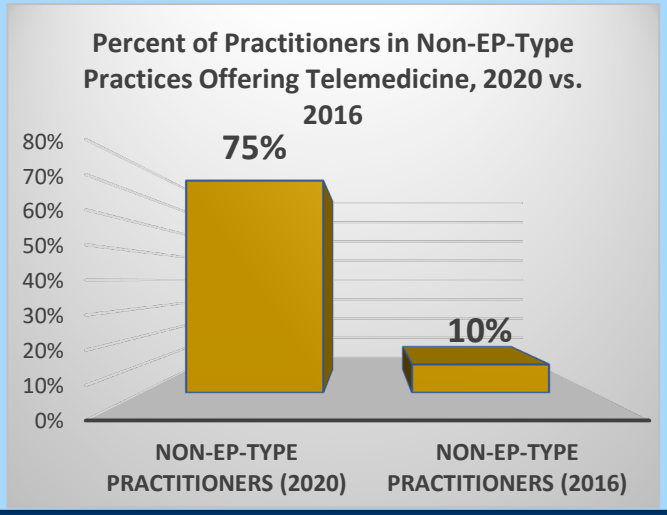


**There has been dramatic growth since 2016 in the percentage of office-based practices offering telemedicine.**
Among EP-type practices, 50% are offering telemedicine in 2020, a seven-fold increase in four years. These practices employ 93% of EP-type practitioners.

Non-EP-type practices also experienced seven-fold growth over 2016, and these practices represent 75% of the non-EP-type practitioners.

# Timeline to Adopt Telemedicine HIT

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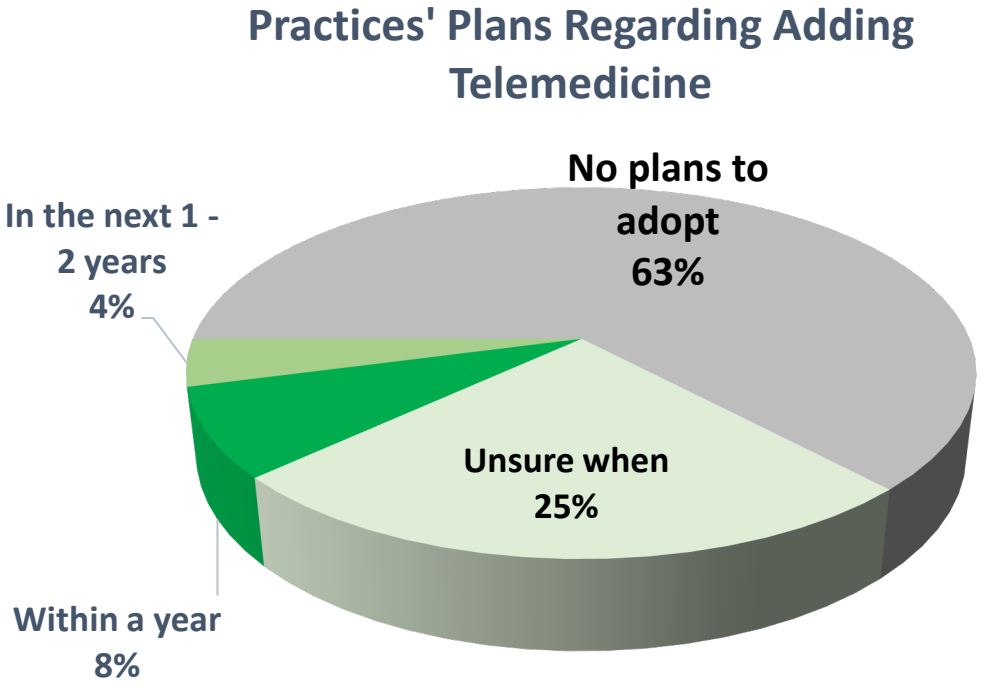
Group practices lead the way in adopting telemedicine – 60% of practices representing 91% of practitioners. Only a third (32%) of solo practices are offering telemedicine. It is important to note that telemedicine is not appropriate for some practice types such as dentistry, chiropractics, acupuncture, etc., although these were included in the survey.

Among the practices that still have not adopted telemedicine HIT, 8% plan to do so within a year, 4% plan to within the next one to two years, and 25% do not know when. Nearly two-thirds (63%) have no plans to adopt telemedicine.



# Barriers To Providing Telemedicine

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Only the practices that indicated they do not offer telemedicine, or that they plan to, were asked to provide feedback regarding the barriers to providing telemedicine. Nearly half (45%) of all surveys that offered any response to this question said they do not see a need to provide telemedicine. Almost a third (30%) said they are unsure of the value/benefit. (Note: these results have not been filtered to practice types for whom telemedicine is practical.) About a fifth have cost or reimbursement concerns.

| Rank | Response | Practices | Practitioners | Pct of Practices | Pct of Practitioners |
|---|---|---|---|---|---|
| 1 | None because we do not see a need to provide telemedicine/telehealth services | 422 | 696 | **45%** | 11% |
| 2 | **Unsure of the value/benefit** | 286 | 708 | **30%** | 11% |
| 3 | **Cost concerns** | 210 | 707 | **22%** | 11% |
| 4 | **Concerns about reimbursement for telemedicine services** | 206 | 759 | **22%** | 12% |
| 5 | Lack of necessary technology (hardware, infrastructure, software) | 191 | 653 | **20%** | 10% |
| 6 | Lack of staff expertise using health IT | 160 | 408 | **17%** | 6% |
| 7 | Unsure of best practices for providing telemedicine services | 160 | 401 | **17%** | 6% |
| 8 | Liability/Legal Concerns | 155 | 527 | **16%** | 8% |
| 9 | Other | 151 | 342 | **16%** | 5% |
| 10 | Concerns regarding patient privacy and/or security | 133 | 529 | **14%** | 8% |
| 11 | Negative patient perception of telemedicine | 109 | 288 | **11%** | 4% |
| 12 | Workflow redesign issues | 97 | 336 | **10%** | 5% |
| 13 | Negative organizational perception of telemedicine | 51 | 104 | **5%** | 2% |
| 14 | Prohibitive or restrictive internal policy | 26 | 102 | **3%** | 2% |
| | **Total Mentions** | **2,357** | | | |

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Survey Findings

# Incentive Program Participation and Interest

# Incentive Program Utilization

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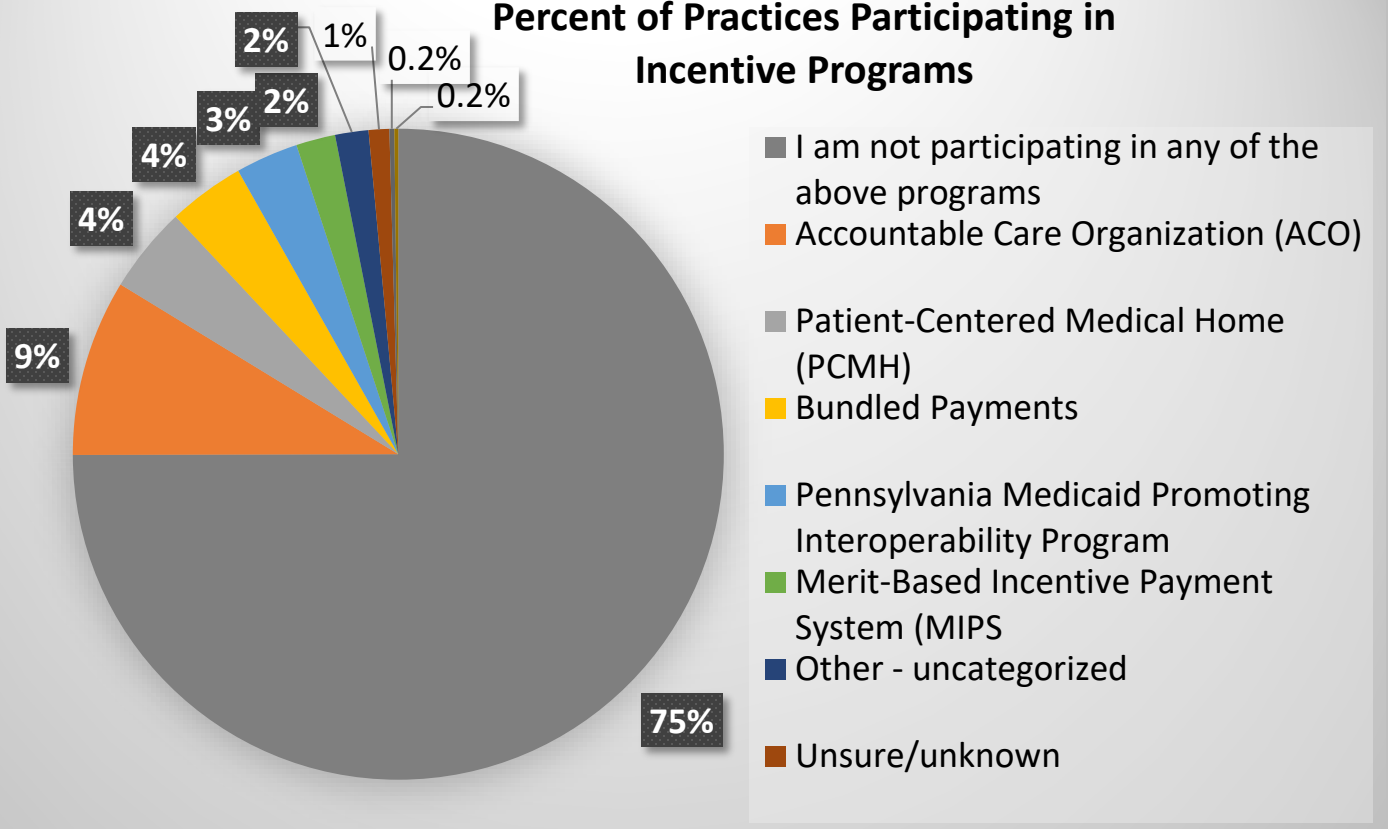
Among the five incentive programs listed, the **Accountable Care Organization (ACO) is the most popular**, followed by the Patient-Centered Medical Home (PCMH) and Bundled Payments programs. The Merit-Based Incentive Program (MIPS) is used by the least number of practices.

**Three-quarters of practices do not plan to participate in any EHR incentive or value-based program.** Among those that did express an interest, the MIPS program was most popular (14%), followed by the ACO (7%) and .PCMH (4%) programs.

Results for [Medicaid] non-EP-type practices have been included but may not be applicable since they may not be ineligible for participation, depending on each program's criteria.



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Survey Findings

# Internet Service

# Internet Service Condition

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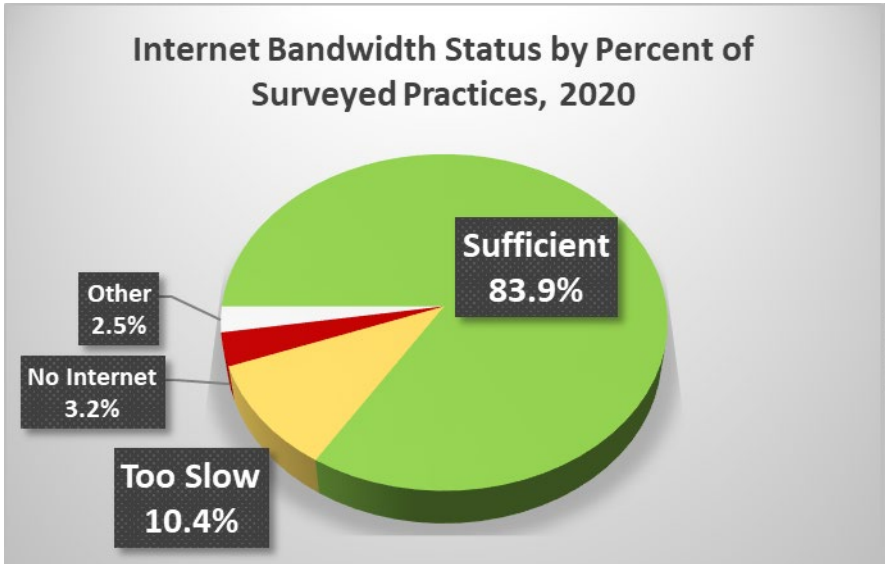
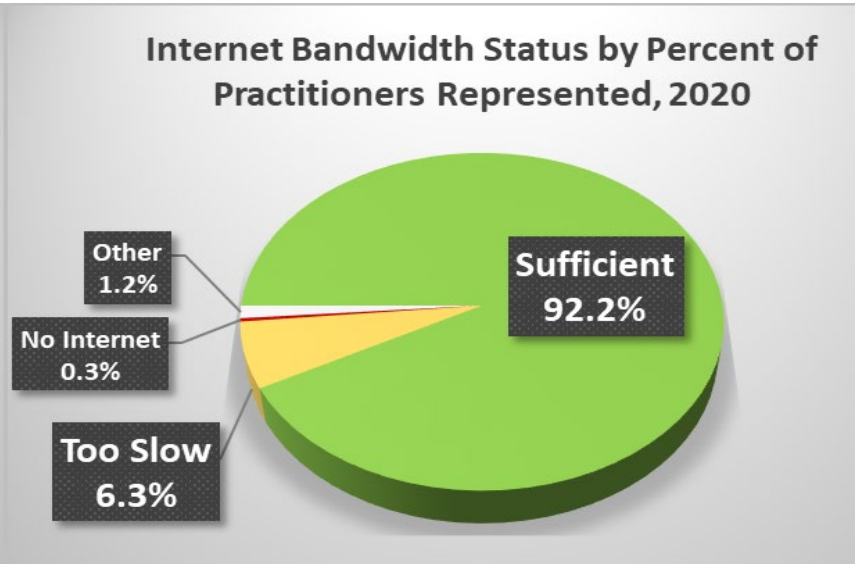
Most practices (84%, representing 92% of practitioners) indicated their offices' internet services (bandwidth) to be sufficient for their needs. This represents an improvement from the 2016 results of 80% of practices and 85% of practitioners. About 10% of practices (6.3% of practitioners) said their bandwidth is too slow, down from 15% of practices and 13% of practitioners in 2016, and just 3.2% of practices (0.3% of practitioners have no internet service (about the same as in 2016.)



# Practices with No/Slow Internet

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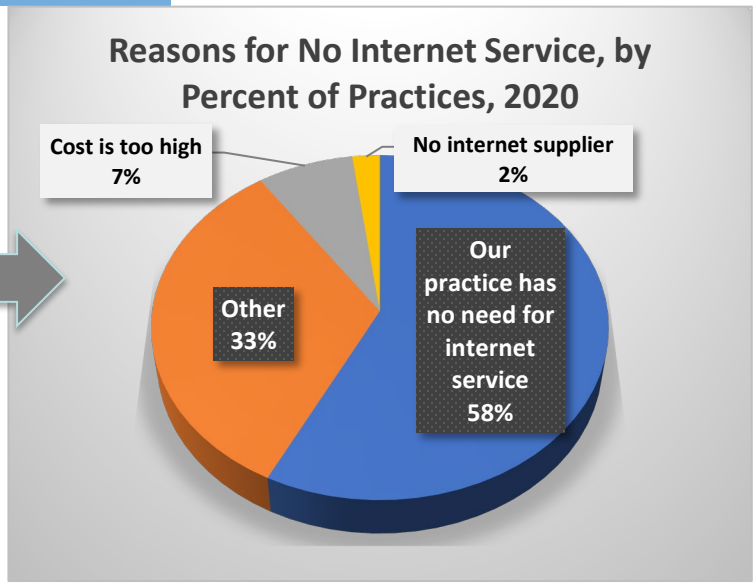
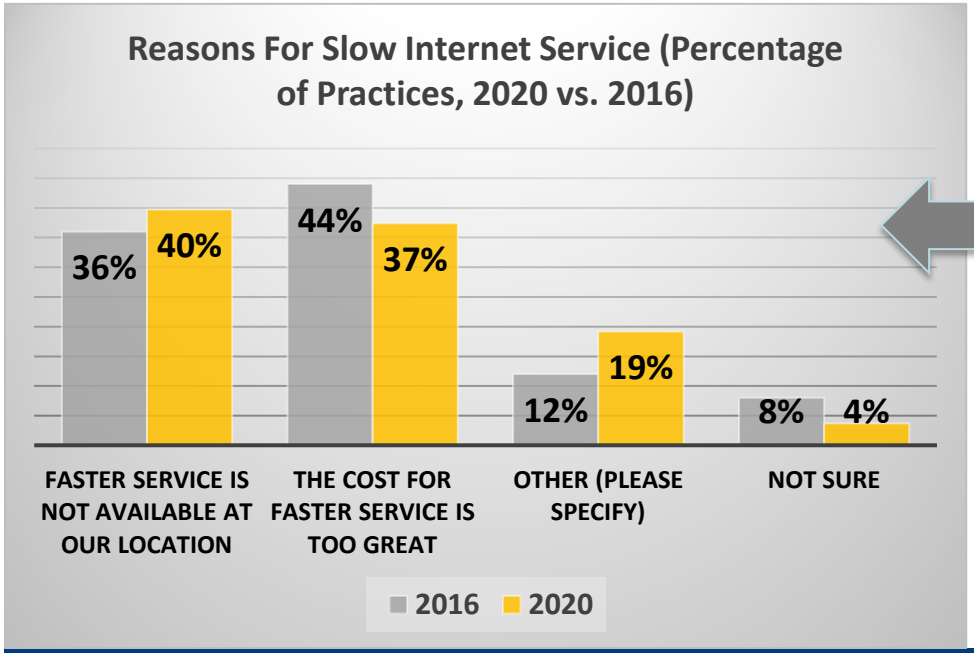
## No Internet

Of the practices reporting that they do not have internet services at their offices:

- 58% say they have no need for internet; 7% felt the cost of internet is too high; and 2% said there is no internet supplier at their location. A third provided "Other" answers.




## Slow Internet

Compared to 2016, a greater percentage of practices that have slow internet service indicate that faster service is not available at their location, while a smaller percentage cite high cost for more bandwidth as the reason their service is slow.

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# Appendix I

## Glossary

# Glossary (slide 1 of 4)

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| Term | Description |
|---|---|
| **Basic EHR** | An EHR system that has all of the following functionalities: patient history and demographics, patient problem list, physician clinical notes, comprehensive list of patient's medications and allergies, computerized orders for prescriptions, and ability to view laboratory and imaging results electronically. (ONC definition) |
| **Certified EHR** | An EHR system that meets meaningful use standards as defined by the Department of U.S. Health and Human Services' Office of the National Coordinator (ONC) for Health Information Technology. |
| **CMS** | The Centers for Medicare & Medicaid Services (CMS) is part of the U.S. Department of Health and Human Services. CMS oversees many federal healthcare programs, including Medicare, Medicaid, CHIP, HIPPA, MACRA, and those that involve health information technology such as the meaningful use incentive programs for electronic health records. |
| **CRNP** | Certified Registered Nurse Practitioner |
| **DHS** | Pennsylvania Department of Human Services, the single state agency for the Medicaid program ("Medical Assistance") in Pennsylvania |
| **DOH** | Pennsylvania Department of Health |
| **eCQM** | Electronic Clinical Quality Measure |
| **EHR** | Electronic Health Record |
| **Eligible Professional** | CMS has defined the types of healthcare providers that may participate in the Medicaid and Medicare EHR Incentive Programs and refers to each of these providers as an "Eligible Professional" or "EP." When this report makes reference to "EP types," it refers to the types of providers or practices of those providers that would be considered eligible for the Medicaid EHR Incentive Program, without considering any additional criteria such as Medicaid patient volume, etc. |

# Glossary (slide 2 of 4)

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| Term | Description |
|---|---|
| **EMR** | Electronic Medical Record. Often used synonymously with EHR, but some define EMRs as lacking the ability to exchange electronic patient data with other entities (hospitals, labs, pharmacies, other ambulatory providers, etc.) |
| **FQHC** | Federally Qualified Health Center |
| **GAC** | General Acute Care (describes a typical hospital) |
| **Healthcare providers** | For the 2016 and 2020 OMAP HIT Surveys, healthcare providers were defined as “physicians, physician assistants, certified registered nurse practitioners, certified nurse midwives, dentists, psychologists, behavioral health therapists or counselors, optometrists, occupational therapists, physical therapists, respiratory therapists, acupuncturists, chiropractors, and others providing direct patient care.” Survey-takers were instructed not to include nurses (practical or registered), dental hygienists, or administrative staff. |
| **HHS** | Federal Department of Health and Human Services |
| **HIE** | Health Information Exchange. Generally refers to the practice of healthcare providers sending and receiving patient data electronically to/from other healthcare providers. Occasionally, HIE is used to refer to a specific system or service (like that of an HIO) that enables this kind of information exchange. |
| **HIO / RHIO** | Health Information Organization. This report refers to RHIOs as simply HIOs. According to the U.S. Health Resources & Services Administration (HERSA), "A regional health information organization (RHIO) is a type of health information exchange organization (HIO) that brings together health care stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community. In present form, most current efforts for health information exchange are regional health information organizations." |
| **HIT** | Health Information Technology. Includes Electronic Health Records and more. |

# Glossary (slide 3 of 4)

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| Term | Description |
|---|---|
| **HIT/E** | Health Information Technology and Health Information Exchange |
| **NCQA** | National Committee for Quality Assurance. The NCQA is a private, 501(c)(3) not-for-profit organization that works to improve health care quality through the administration of evidence-based standards, measures, programs, and accreditation. |
| **NEHRS** | National Electronic Health Records Survey. This is a questionnaire designed to be completed by physicians in an ambulatory setting. The tool includes questions to assess the current state of EHR adoption in ambulatory settings. Conducted annually by the National Center for Health Statistics, Centers for Disease Control and Prevention. |
| **OMAP** | DHS Office of Medical Assistance Programs, administrator of the state's Medicaid EHR Incentive Plan. |
| **ONC** | The Office of the National Coordinator for Health Information Technology, a division of the U.S. Department of Health and Human Services. |
| **ONC-certified** | Refers to EHR systems that have been certified by the ONC as having met the its requirements for meeting meaningful use. |
| **PA PDMP** | The Pennsylvania Prescription Drug Monitoring Program. A new program in 2016, the PDMP was created within the Pennsylvania Department of Health to help prevent prescription drug abuse and protect the health and safety of Pennsylvanians. To do this, the PA PDMP collects information on all filled prescriptions for controlled substances. This information helps health care providers safely prescribe controlled substances. |
| **PCMH** | Primary Care Medical Home is a team-based health care delivery model led by a health care provider that is intended to provide comprehensive and continuous medical care to patients with the goal of obtaining maximized health outcomes. |

# Glossary (slide 4 of 4)

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| Term | Description |
|---|---|
| **Primary Care Providers** | Physicians practicing general/family medicine, internal medicine, obstetrics/gynecology, or pediatrics. |
| **Primary Medical Care** | Primary care is the level of a health services system that provides entry into the system for all new needs and problems, provides person-focused (not disease-oriented) care over time, provides care for all but very uncommon or unusual conditions, and coordinates or integrates care, regardless of where the care is delivered and who provides it. -Johns Hopkins Bloomburg School of Public Health |
| **RHC** | Rural Health Center |
| **Small Practice** | A physician practice consisting of 10 physicians or less. (ONC definition) |
| **SMHP** | State Medicaid Health IT Plan. Five-year plan required by CMS. |
| **Telemedicine** | The remote diagnosis and treatment of patients by means of telecommunications technology. Also known as telehealth. |
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# Appendix II

## Survey Approach

# Survey Purpose

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- The Centers for Medicare & Medicaid Services (CMS), a federal agency within the United States Department of Health and Human Services (HHS), requested that each state assess the current degree of Health Information Technology (HIT) adoption/usage by its healthcare providers as part of the sunset of the Medicaid Promoting Interoperability (PI) Program. The PI Program (formerly the Medicaid EHR Incentive Program) has provided $448 million in incentive payments to qualifying PA providers from 2011 through 2021.

- OMAP decided to survey the state's office-based providers to obtain information regarding outpatient HIT usage, and to utilize inpatient hospital HIT data provided through the most recent AHA HIT survey for the 2020 environmental scan report.

- The purpose of this Health IT provider survey and the larger HIT "environmental scan" of which it is a part is to collect data regarding HIT and Health Information Exchange (HIE) adoption, use, and challenges throughout Pennsylvania. Scan results will be reported to CMS as part of the Commonwealth's 2021 State Medicaid Health IT Plan (SMHP) and will be used to inform policy decisions by the Department of Human Services and/or the Department of Health as part of the Commonwealth's efforts to encourage meaningful use of HIT and HIE.

# Survey Objectives

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Specific objectives of the survey and environmental scan:

- Provide data in response to CMS request
- Obtain data to update statistics and other content in the next SMHP revision
  - Make comparisons to the 2010 baseline scan
- Identify provider types lagging in Health Information Technology / Health Information Exchange (HIT/E)
- Measure progress of HIT/E in Pennsylvania
- Identify barriers to HIT/E
- Identify EHR product type and solution in use
  - Note: some providers use more than one EHR solution and multiple modules
- Identify degree/level of HIE within provider's health system (and for what uses)
- Identify degree/level of HIE outside provider's health system, what uses, and with what types of providers
- Identify providers' HIT/E plans for the short term and long term
- Identify when/if providers plan to affiliate with an HIO

# Survey Scope

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The customized survey that was created specifically for the office-based provider portion of the 2016 environmental scan was updated and distributed to various healthcare provider types throughout the Commonwealth.

Although the 2020 survey and environmental scan were conducted by the DHS Office of Medical Assistance Programs, which operates the state's PI Program, the scope was not limited to Medicaid providers.

The survey was intended to reach and obtain responses from solo or group provider practices representing a variety of outpatient provider types/facilities including, but not limited to the list at right.

## Provider Types Surveyed

- Physicians (general practice as well as specialists)
- Physician Assistants
- CRNPs
- Psychiatrists and Psychologists
- Behavioral Health Therapists and Counselors
- Long-Term Care facilities
- Long-Term Care practitioners, such as Home Health Aides, etc.
- Chiropractors
- Physical and Occupational Therapists
- Dentists
- Optometrists
- Pharmacists
- Laboratories and Imaging Centers
- Urgent Care Centers
- FQHCs and RHCs
- and more . . .

# Survey Distribution: Channels

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The survey invitations were distributed via three channels:

| # | Distribution Channel | Distribution Method |
|---|---|---|
| 1 | **Various healthcare provider associations within the Commonwealth** | OMAP asked participating associations to distribute an invitation and link to the survey, and to encourage their members to participate. Associations could choose to send an email to their membership, include information and the link in a newsletter, or communicate with their members in multiple ways |
| 2 | **Pennsylvania Medicaid PI Program participants and interested parties** (list maintained by OMAP) | A survey invitation and web link was sent to the members of this list by DHS via a mass emailing |
| 3 | **Healthcare provider licensee lists** (supplied by the Pennsylvania Department of State's Bureau of Professional and Occupational Affairs) | A survey invitation and web link was sent to the members of these lists by DHS via a mass emailing |

# Channel #1: Associations

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The following healthcare provider associations, representing more than 39,000 individual providers and 1,905 multi-provider organizations, circulated the survey invitation to their members:

| Association | Number of Members | Provider Type(s) |
|---|---|---|
| **Hospital and Healthsystem Association of PA (HAP)** | 240+ | acute care (community and teaching institutions), non-acute care (chronic, rehabilitation, and psychiatric institutions), pre-acute and post-acute patient care facilities, patient care organizations, professional services firms |
| **PA Medical Society (PMS)** | 20,000 | physicians and medical students |
| **PA Association of Community Health Centers (PACHC)** | 200+ | primary health care providers |
| **PA REACH / Quality Insights** | 5,000 | Primary care providers, subspecialists |
| **PA Chapter, American Academy of Pediatricians** | 2,200 | pediatricians |
| **PA Academy of Family Physicians** | 5,000+ | family physicians and family medicine residents and students |
| **PA eHealth Partnership Program** | | healthcare providers, insurers, academics, consumer advocates |
| **PA Dental Association** | 6,500 | dentists |
| **Leading Age PA** | 365+ | nursing homes, continuing care retirement communities, senior housing facilities, assisted living and personal care residences, community service providers |
| **PA Homecare Association** | 700 | organizations that provide care and support to individuals in their own homes |
| **PA Health Care Association** | 400+ | long-term care, senior service providers |

# Channel #2: PI Program Lists

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Survey invitations were emailed to providers on these lists maintained by the Office of Medical Assistance Programs' Bureau of Data and Claims Management (BDCM) for the Medicaid Promoting Interoperability (PI) Program:

| List Description | Number of Providers | Provider Type(s) |
|---|---|---|
| **Participants of the Pennsylvania PI Program** | **~8,000** | Eligible Professionals as defined by CMS with regard to the Medicaid Promoting Interoperability Program |
| **Parties voluntarily signed up for the Pennsylvania Medicaid EHR Incentive Program's news emails (ListServ)** | **~1,300** | Healthcare providers, provider associations, etc. |
| **TOTAL** | **~9,300** | |

# Channel #3: State Licensee Lists

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A current list of healthcare provider licensees was obtained from the PA Department of State's Bureau of Professional and Occupational Affairs. The table below shows the license types OMAP selected for inclusion in the survey mailing, as well as the number invited for the 2020 and 2016 surveys, and the difference. The table also shows each license type's percentage of the total list for both 2020 and 2016, as well as the amount of change.

| | Number Invited | | | Percent of Total List | | |
|---|---|---|---|---|---|---|
| License Type | 2020 | 2016 | Change | 2020 | 2016 | Change |
| Physician and Surgeon (Medical and Osteopathic) | 48,789 | 43,510 | **5,279** | 31.7% | 38.9% | **-7.2%** |
| Pharmacist | 21,554 | 14,639 | **6,915** | 14.0% | 13.1% | **0.9%** |
| Physical Therapist | 14,716 | 9,255 | **5,461** | 9.6% | 8.3% | **1.3%** |
| Certified Registered Nurse Practitioner | 14,127 | 8,753 | **5,374** | 9.2% | 7.8% | **1.3%** |
| Dentist | 9,169 | 5,678 | **3,491** | 6.0% | 5.1% | **0.9%** |
| Occupational Therapist | 8,863 | 5,329 | **3,534** | 5.8% | 4.8% | **1.0%** |
| Physician Assistant (Medical and Osteopathic) | 9,802 | 7,605 | **2,197** | 6.4% | 6.8% | **-0.4%** |
| Respiratory Therapist (including Osteopathic) | 7,577 | 4,596 | **2,981** | 4.9% | 4.1% | **0.8%** |
| Psychologist | 5,847 | 3,786 | **2,061** | 3.8% | 3.4% | **0.4%** |
| Dietitian-Nutritionist (LDN) | 4,435 | 1,817 | **2,618** | 2.9% | 1.6% | **1.3%** |
| Chiropractor | 3,884 | 2,560 | **1,324** | 2.5% | 2.3% | **0.2%** |
| Optometrist (all 3 types) | 2,552 | 1,895 | **657** | 1.7% | 1.7% | **0.0%** |
| Doctor of Podiatric Medicine | 1,393 | 1,108 | **285** | 0.9% | 1.0% | **-0.1%** |
| Acupuncturist (all 3 types) | 634 | 566 | **68** | 0.4% | 0.5% | **-0.1%** |
| Nurse-Midwife (both types) | 498 | 616 | **(118)** | 0.3% | 0.6% | **-0.2%** |
| **Grand Total** | **153,840** | **111,713** | **42,127** | **100.0%** | **100.0%** | **0.0%** |

# State Licensee List: Breakdown

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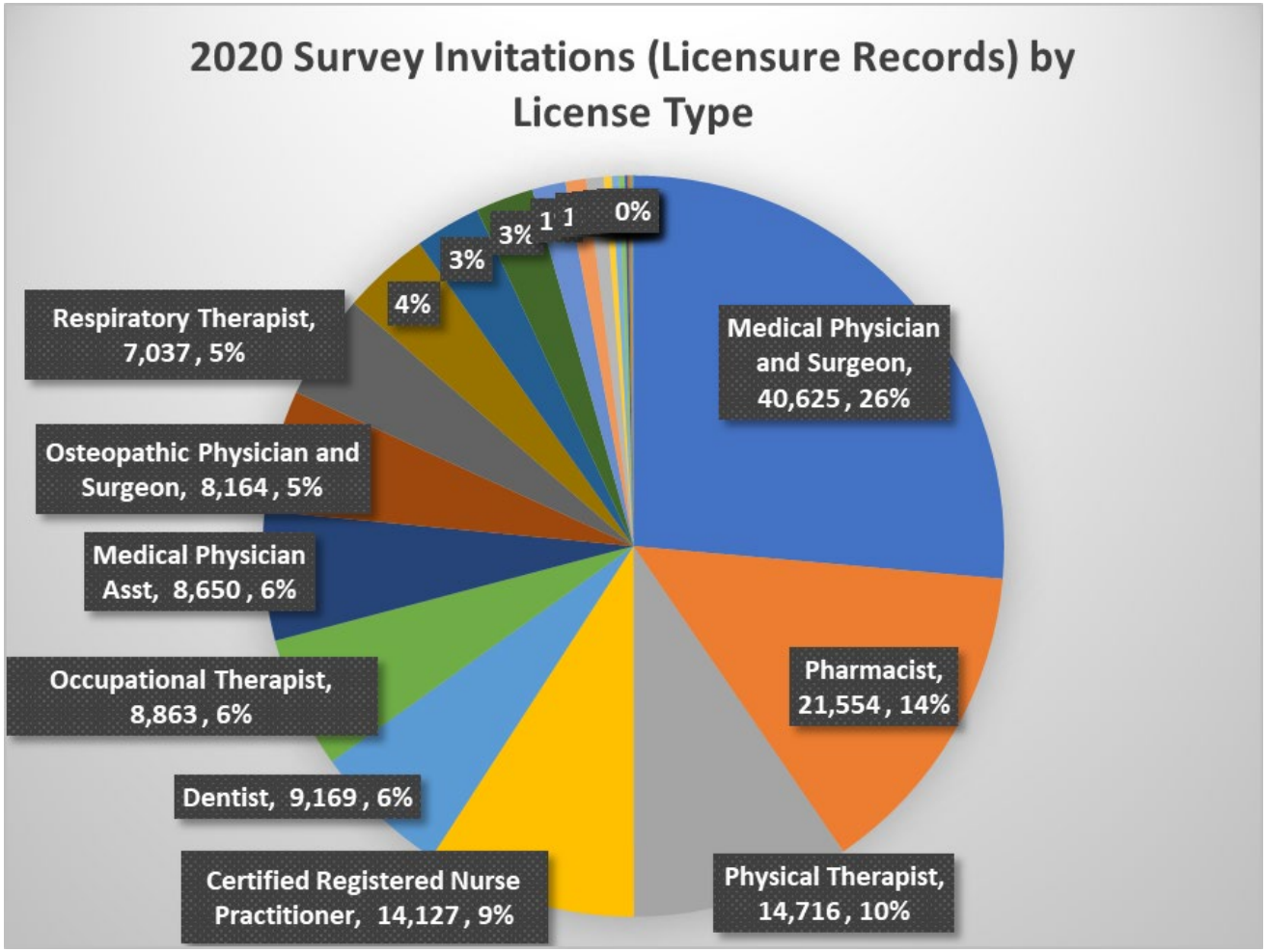


About a quarter (26%) of the licensees with email addresses were medical physicians or surgeons, followed by pharmacists (14%), physical therapists (10%), Certified Registered Nurse Practitioners (9%), dentists (6%), occupational therapists (6%), etc.

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# Appendix III

## Characteristics of Survey Populations

# Overall Survey Response

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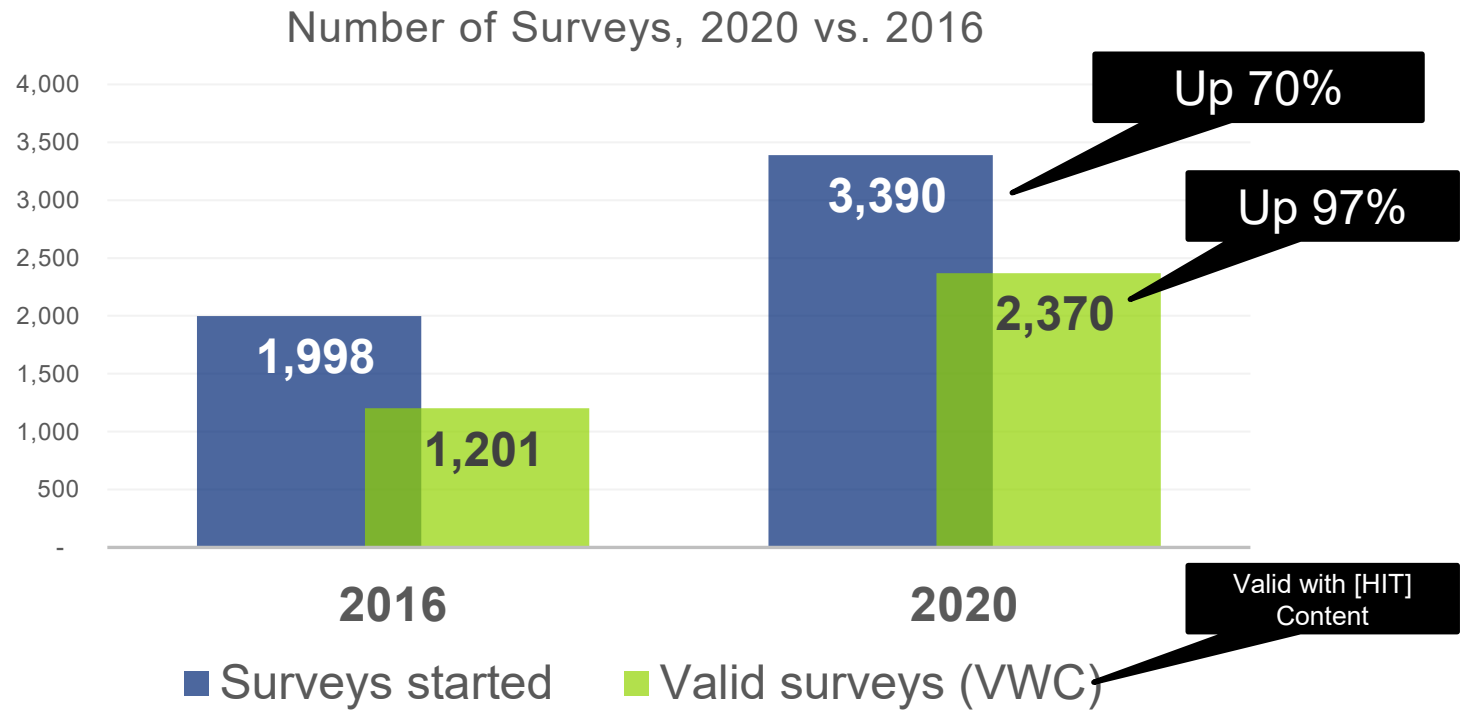
3,390 outpatient practice surveys were started, with 2,370 of them meeting the criteria to be considered valid (see next slide.) The licensee list used as the primary survey invitation channel grew by 37.7% since the last HIT environmental scan in 2016, but the number of valid surveys nearly doubled.



# Surveys by Solo / Group

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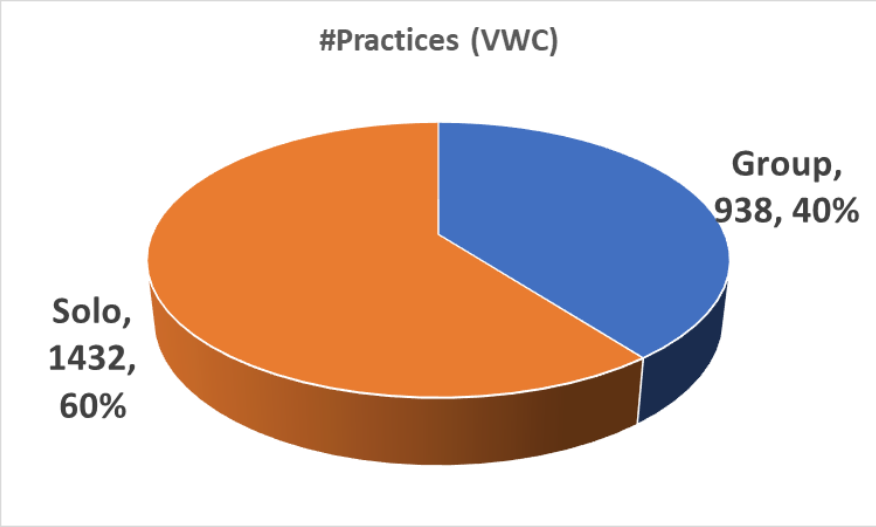
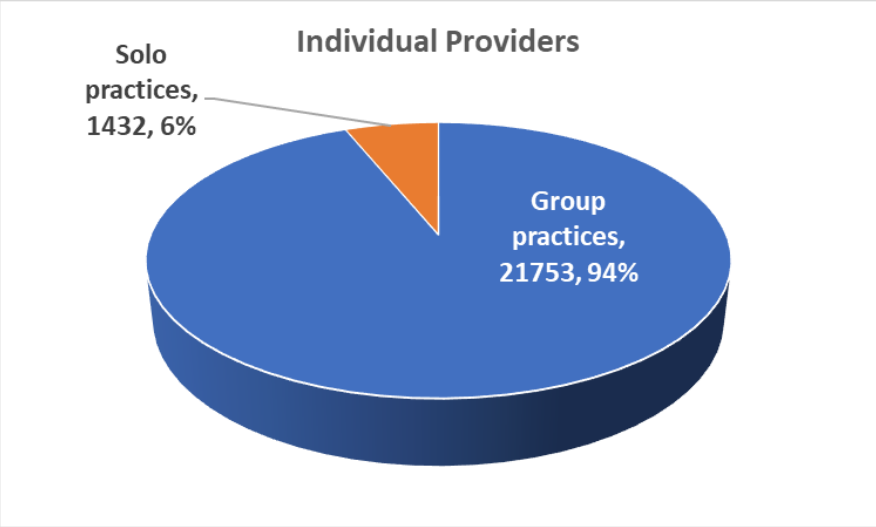
Of the 2,370 surveys analyzed, 60% were from solo practices, and 40% were from group practices.

However, 94% of the 23,185 individual providers (practitioners) represented by the surveys are members of group practices.



# Solo Practices by Type

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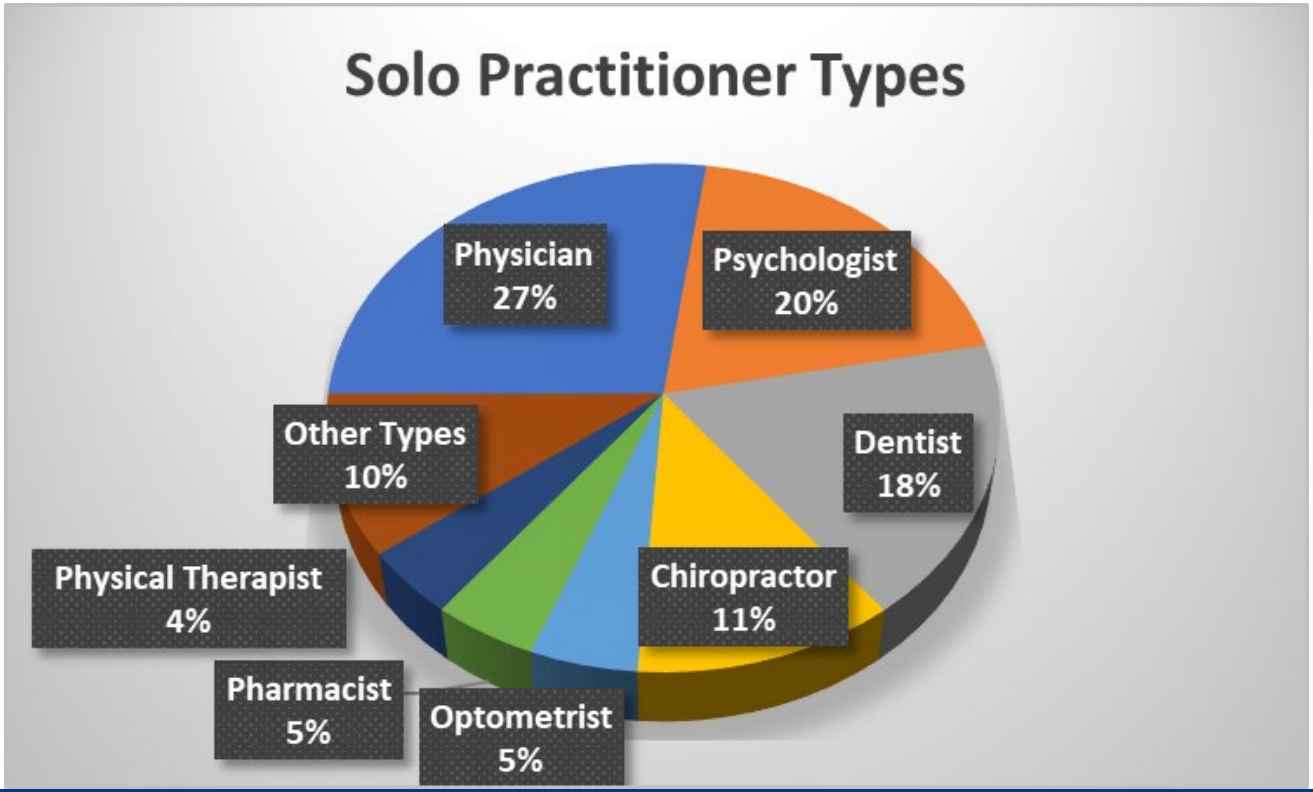
The most prevalent type of solo practice was ”Physician,” followed by “Psychologist,” “Dentist,” and “Chiropractor.” These four types comprised three-quarters of all solo practices.



# Group Surveys by Type

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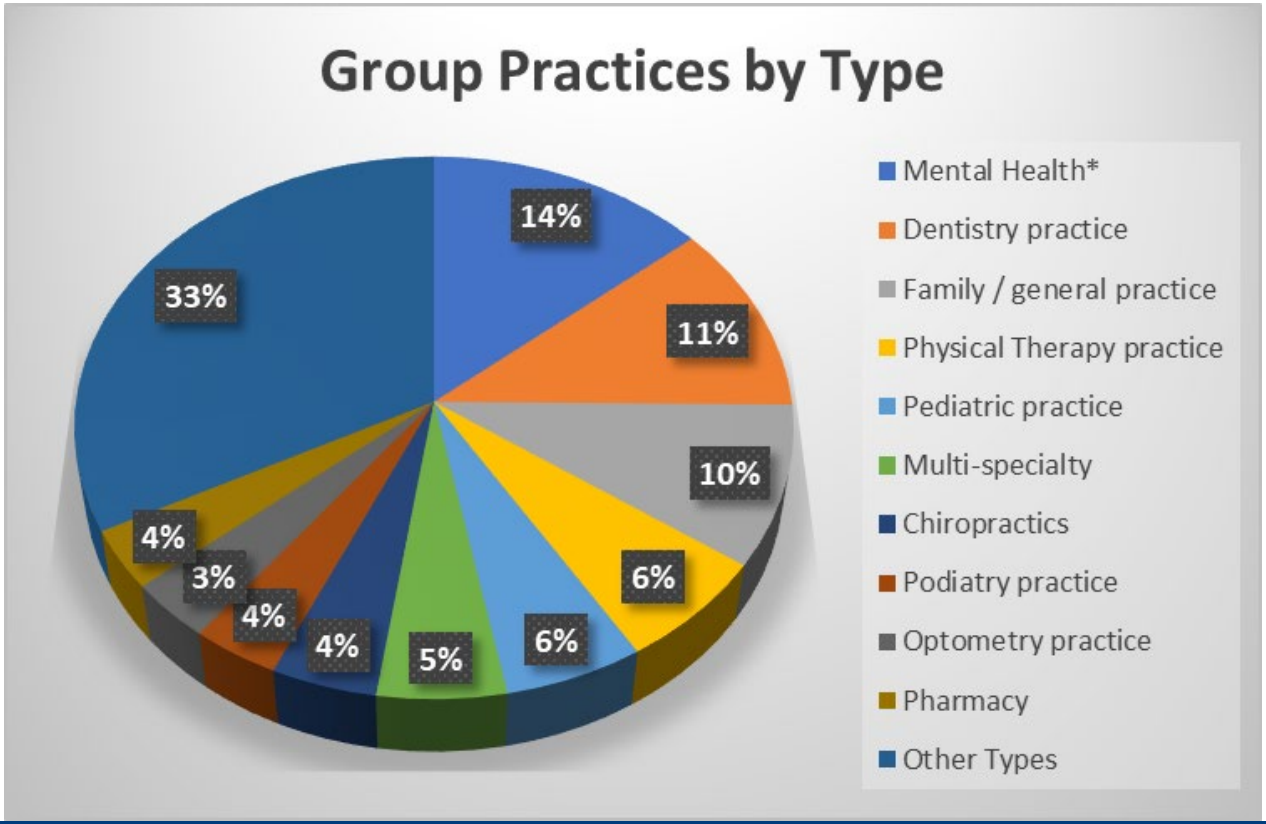
Most group practice surveys came from mental health practices, followed by dentistry and family/general practices. Together, these three categories represent 35% of all group surveys.



# Group Practitioners by Type

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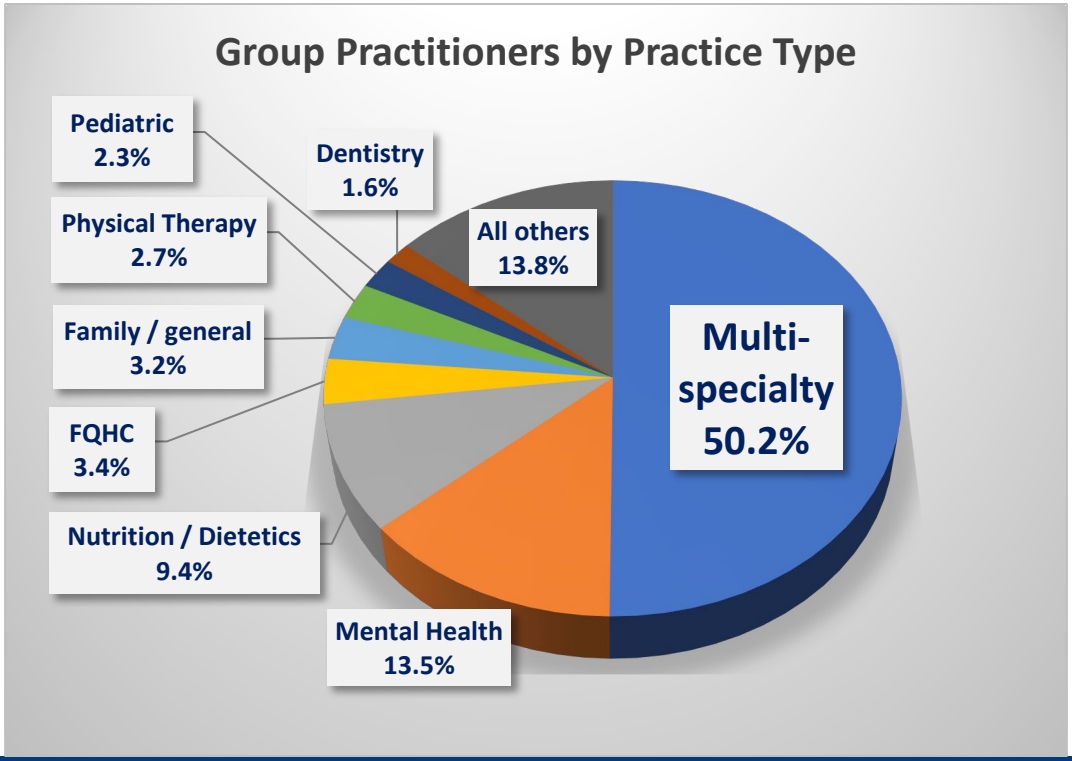
Practitioners in multi-specialty practices account for half of all those employed by group practices. Mental health practitioners (13.5%) and nutrition/dietetics practitioners follow. These top three categories represent about three-quarters (73%) of all group practitioners.



# Group Practice Sizes

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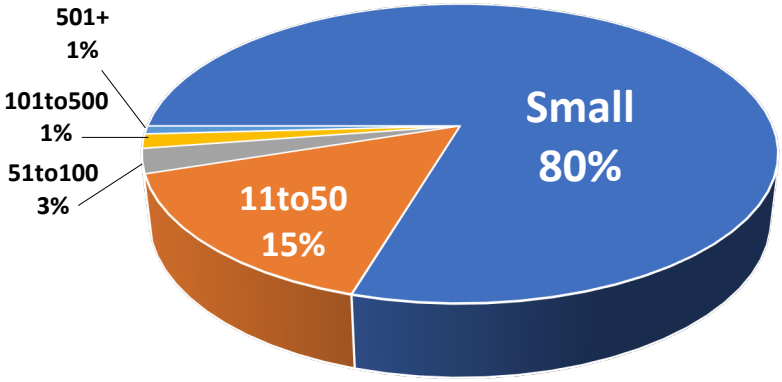
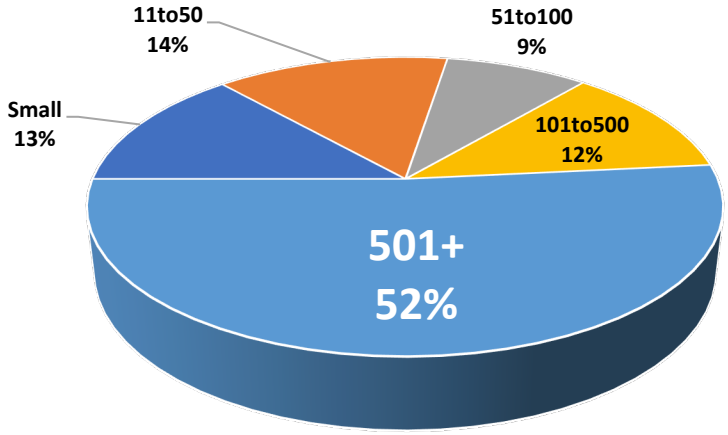
- Eighty percent of the group practice surveys received were from small practices. (The ONC defines “small practice” as a physician practice consisting of 10 physicians or fewer.)
- Fifteen percent were from practices with 11 to 50 individual providers.
- However, the one percent of group practices with 501+ practitioners accounts for 52% of all group practice practitioners represented in the survey.

**Group Practices by Size**
("Small" = 10 or fewer)




**Practitioners by Group Size**
("Small" = 10 or fewer)



# Long-term Care Surveys

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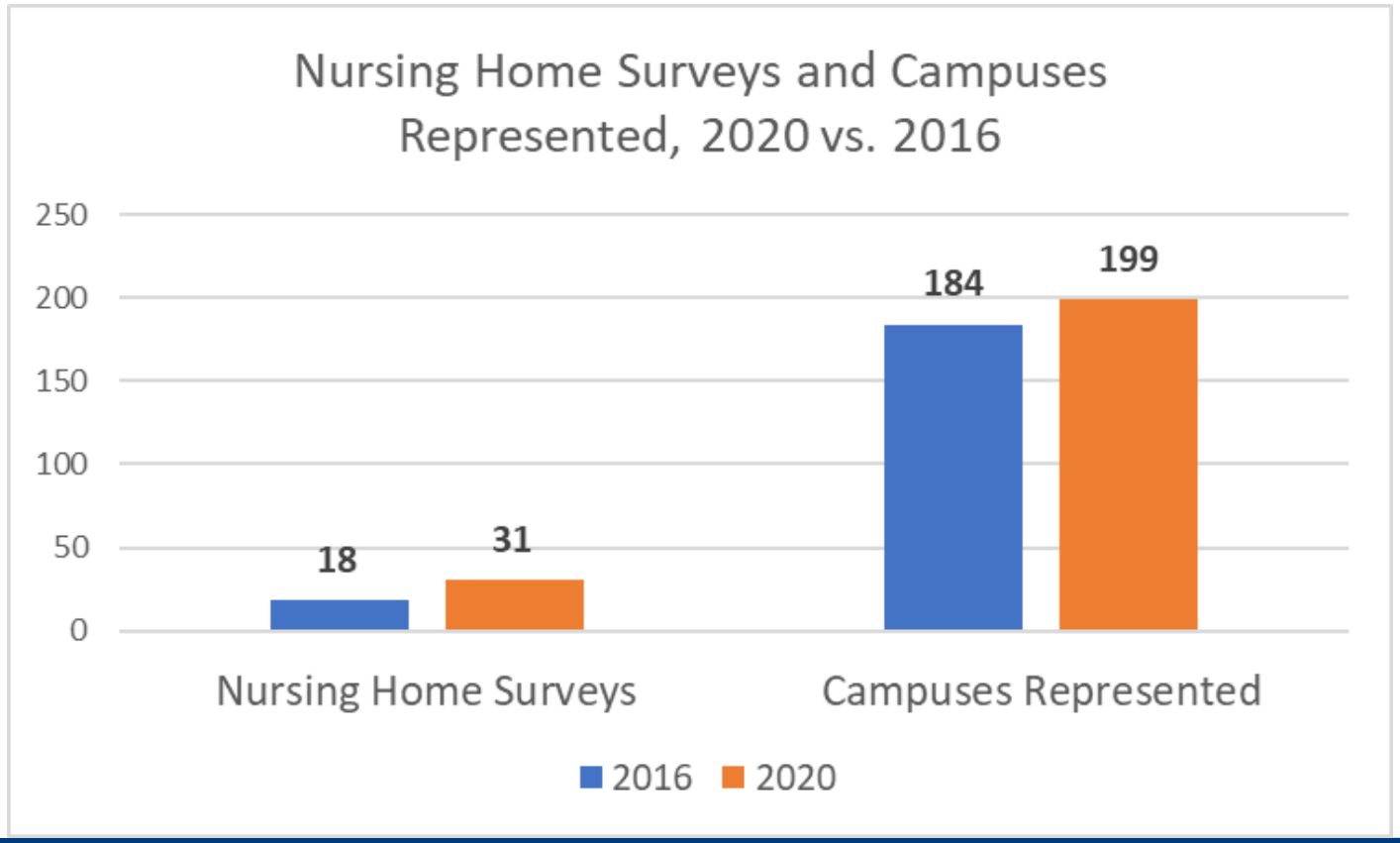
Surveys from 31 nursing home organizations representing 199 campuses were received, compared to 18 surveys and 184 campuses in 2016.



# Surveys by Care Area

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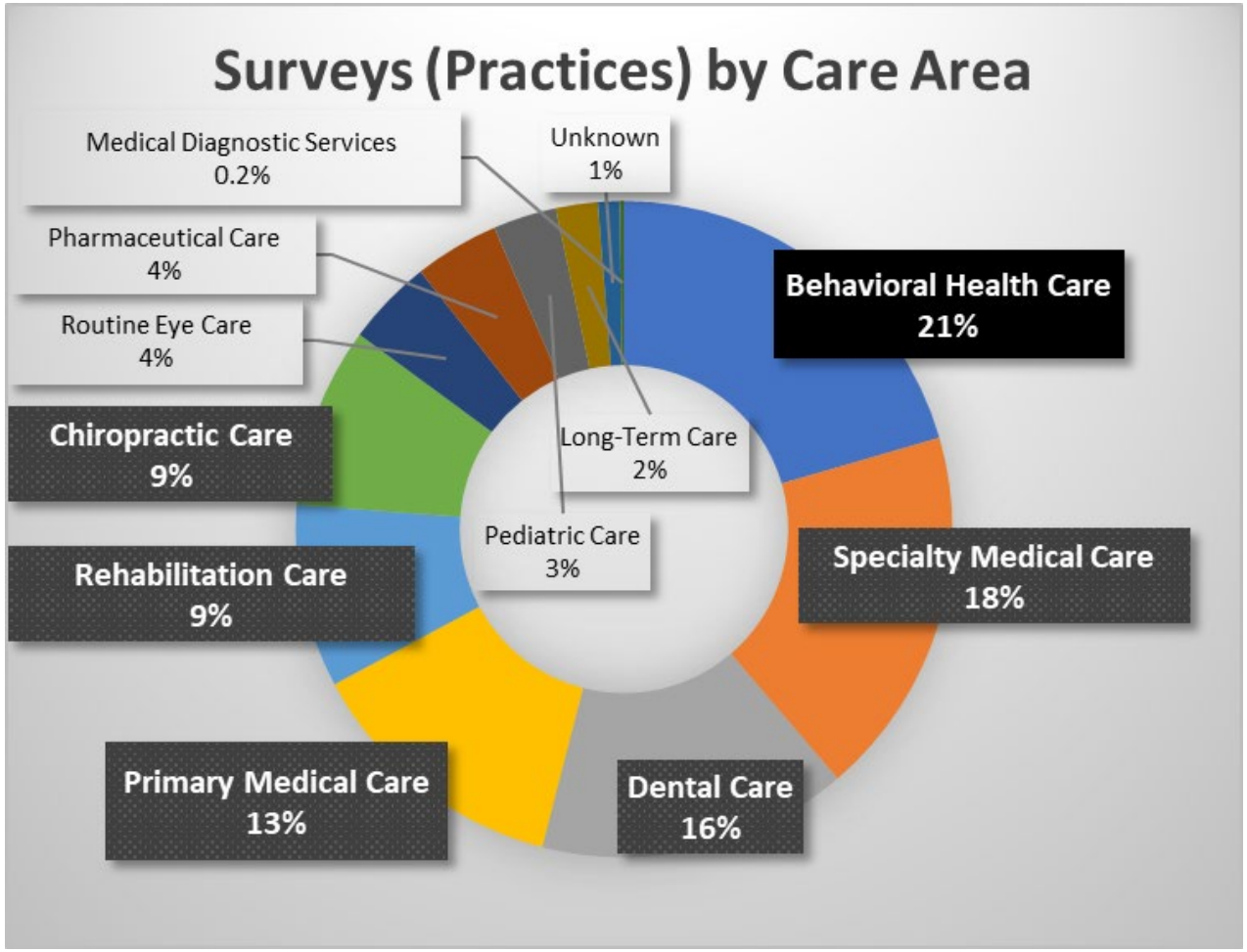
Each survey (healthcare practice) was assigned to one of eleven high-level "Care Areas" based on its provider type.

OMAP received the most surveys from practices in the behavioral health area, followed by specialty medical care and dental care. These three areas accounted for more than half of all surveys.



# Practitioners by Care Area

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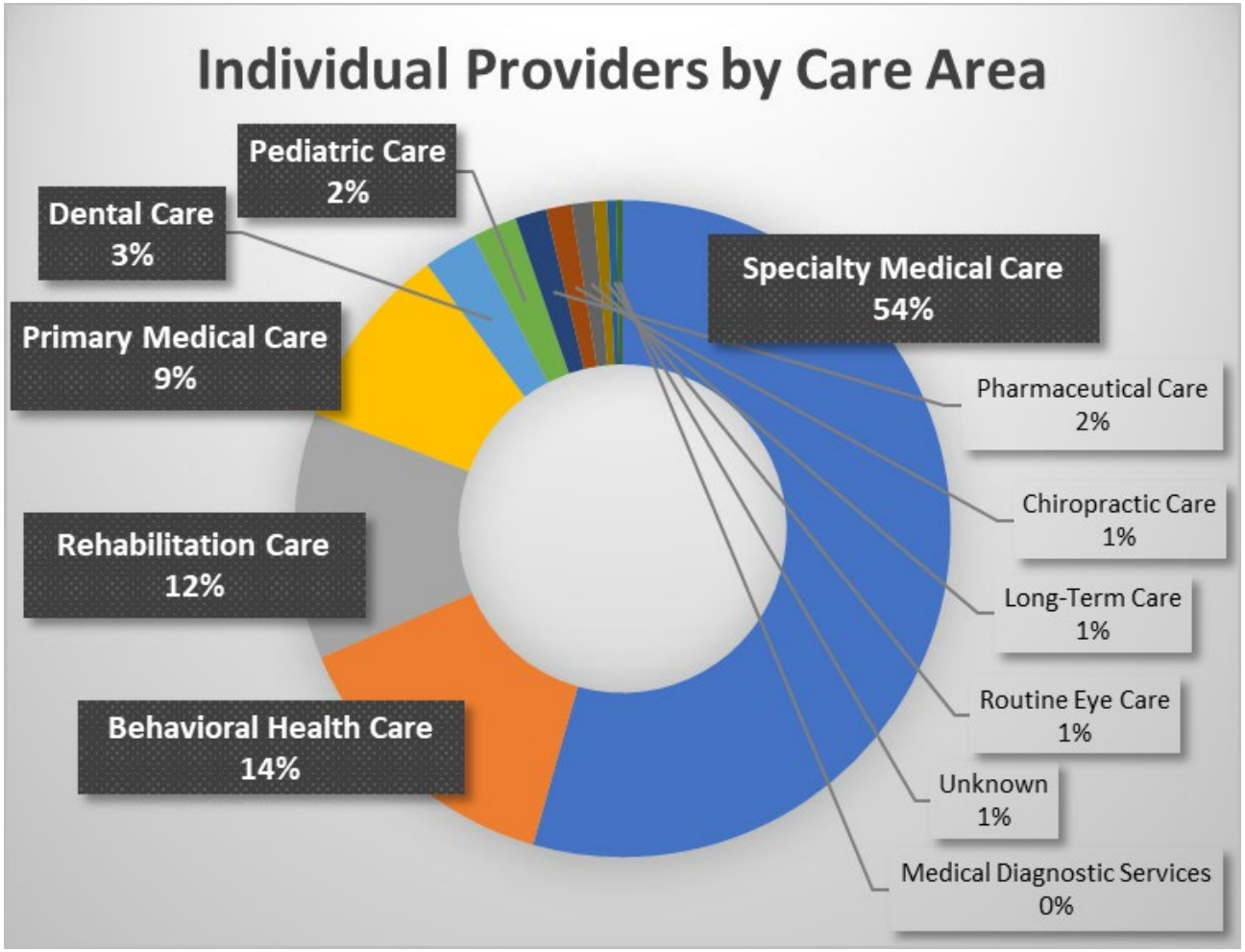
However, the specialty medical care surveys(18% of total) represent 54% of all individual practitioners, making this the number one care area in terms of number of providers.



# Geographic Distribution

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OMAP received 2,370 valid surveys with HIT content from 65 of the 67 counties, and the number of surveys per county was well-correlated with general population.

- The largest number of practitioners represented (6,864, or 30%) were from Philadelphia County
- The largest number of surveys came from Allegheny County (289, or 12%)
- The top ten counties (by number of surveys) account for 63% of total surveys and 67% of all practitioners represented. All 10 of these are in the top 12 counties for population.
- Fewer than 10 surveys were received from 27 counties (including Forest and Juniata which had no surveys). All 27 counties are in the bottom 30 counties for population.

| Rank | County | Practices (Surveys) | Practitioners Represented | Pct of Surveys | Pct of Practitioners | Avg #Practitioners |
|---|---|---|---|---|---|---|
| **1** | Allegheny | 289 | 1,929 | **12.2%** | **8.3%** | 6.7 |
| **2** | Montgomery | 256 | 1,240 | **10.8%** | **5.3%** | 4.8 |
| **3** | Philadelphia | 253 | 6,864 | **10.7%** | **29.6%** | 27.1 |
| **4** | Bucks | 179 | 2,854 | **7.6%** | **12.3%** | 15.9 |
| **5** | Delaware | 123 | 328 | **5.2%** | **1.4%** | 2.7 |
| **6** | Chester | 114 | 456 | **4.8%** | **2.0%** | 4.0 |
| **7** | Lehigh | 84 | 260 | **3.5%** | **1.1%** | 3.1 |
| **8** | Lancaster | 72 | 1,159 | **3.0%** | **5.0%** | 16.1 |
| **9** | Luzerne | 63 | 134 | **2.7%** | **0.6%** | 2.1 |
| **10** | Berks | 59 | 258 | **2.5%** | **1.1%** | 4.4 |
| | **Total** | **1,492** | **15,482** | **63.0%** | **66.8%** | **8.7** |

# Rural vs. Urban Respondents

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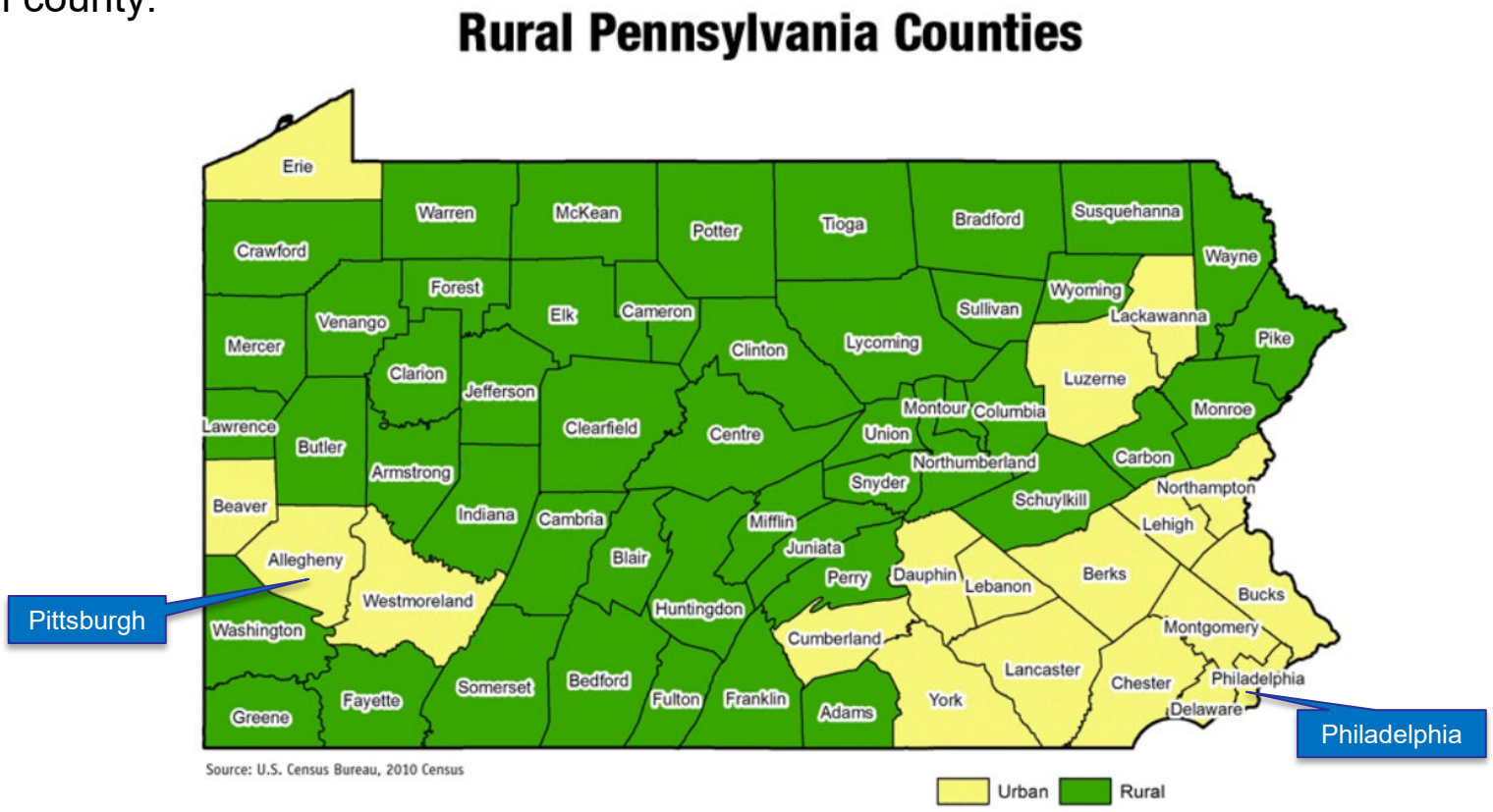
According to the Center for Rural Pennsylvania, a legislative agency of the Pennsylvania General Assembly, Pennsylvania has 48 rural counties and 19 urban counties. In 2010, nearly 3.5 million residents, or 27 percent of the state's 12.7 million residents, lived in a rural county.



# Rural vs. Urban Respondents

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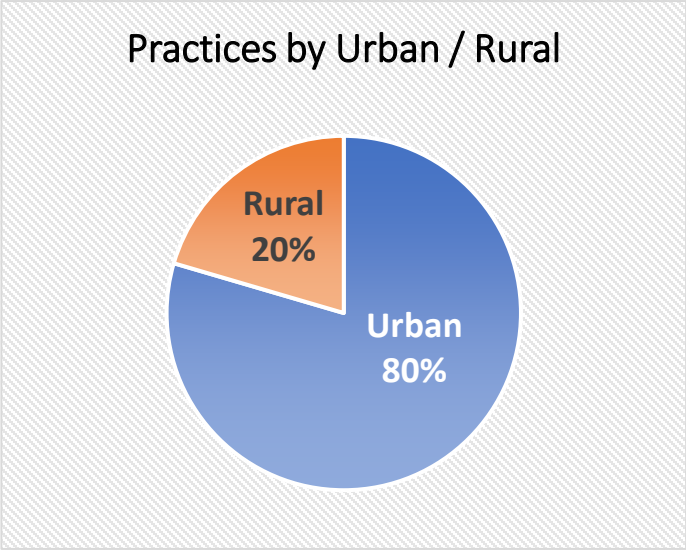
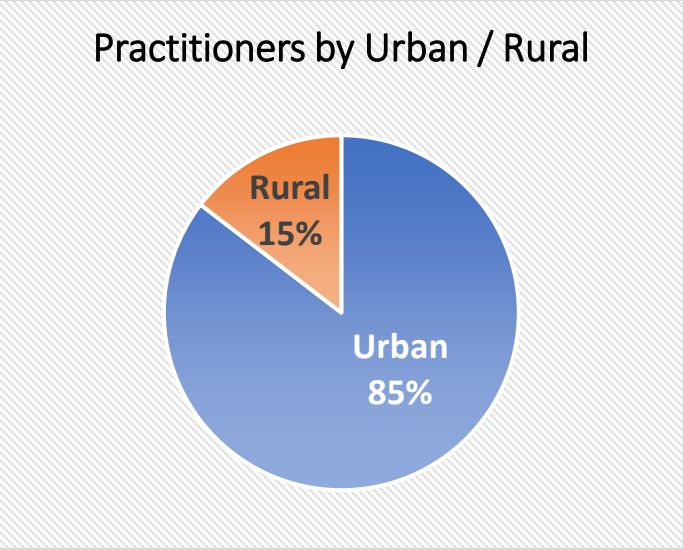
One-fifth (20%) of surveys were from practices with a primary facility address in a rural county. (A practice may have facilities in multiple counties, so the precise breakdown of urban and rural practitioners is not known.) Fifteen percent of all practitioners represented by the surveys are employed by these rural practices.

In 2010, nearly 3.5 million people, or about 27 percent of the state's 12.7 million residents, lived in Pennsylvania's 48 rural counties. (U.S. Census Bureau)



# Health System Owned Practices

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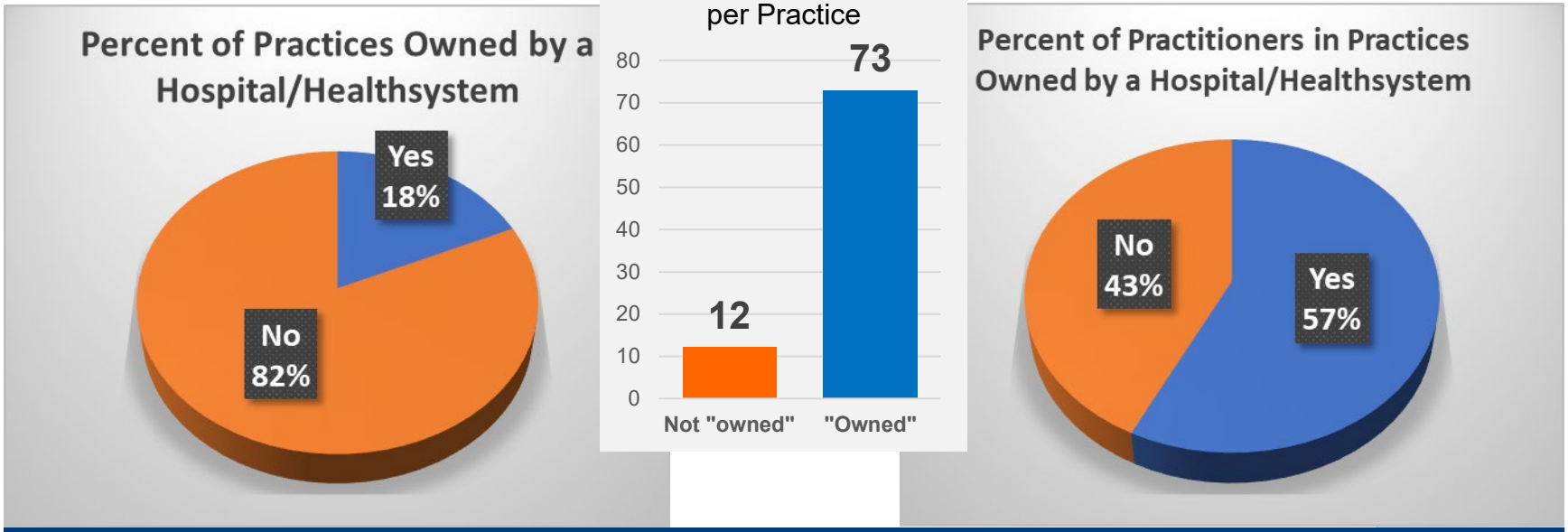
Almost a fifth (18%) of office-based group practices surveyed are owned by hospitals or health systems that include hospitals

- **Most individual providers are working in health system-owned practices**
  - Although only 18% of the group practices are owned by a hospital or health system, those practices represent 57% of the individual providers.
- **Health system-owned ~~Owned"~~ practices are larger than independent ones**
  - On average, each "owned" practice includes 73 individual providers while each independent practice includes just 12.



# Health System Owned Practices

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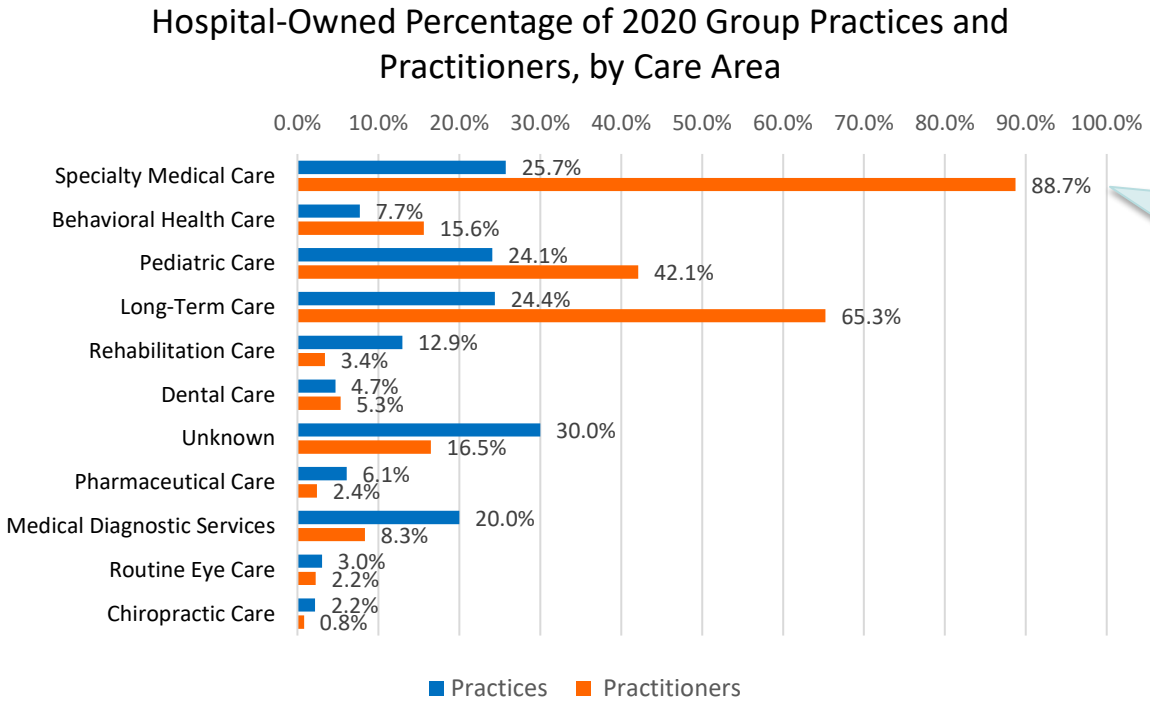
- Primary Medical Care practices are the most-likely to be hospital-owned (33.8%), followed by Specialty Medical Care (25.7%), Long-Term Care (24.4%), and Pediatric Care (24.1%).
- Practices in these care areas were the least-likely to be hospital-owned: Chiropractic (2.2%), Eye (3.0%), Dental (4.7%), and Pharmaceutical (6.1%).




Nearly 89% of practitioners in the Specialty Medical Care area are employed by hospital-owned practices

# Health System Owned Practices

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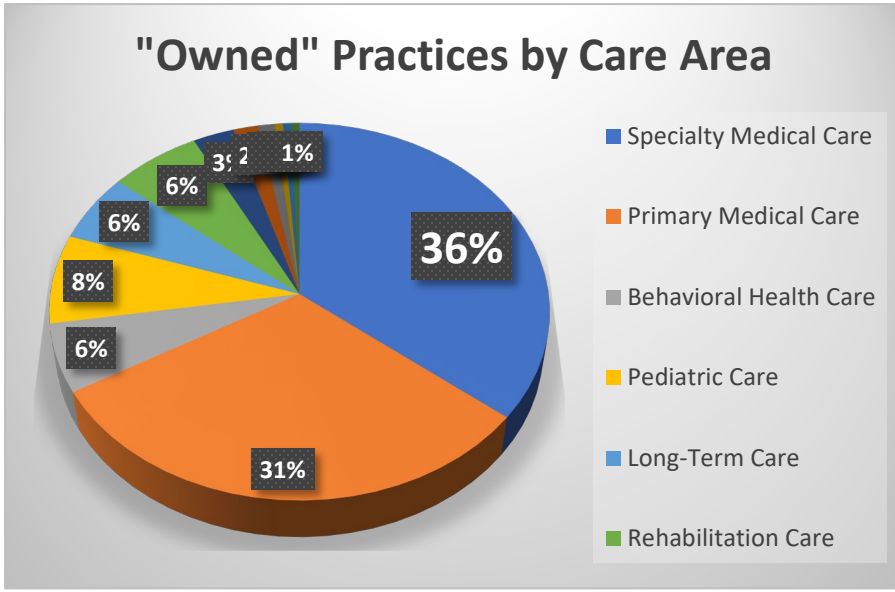


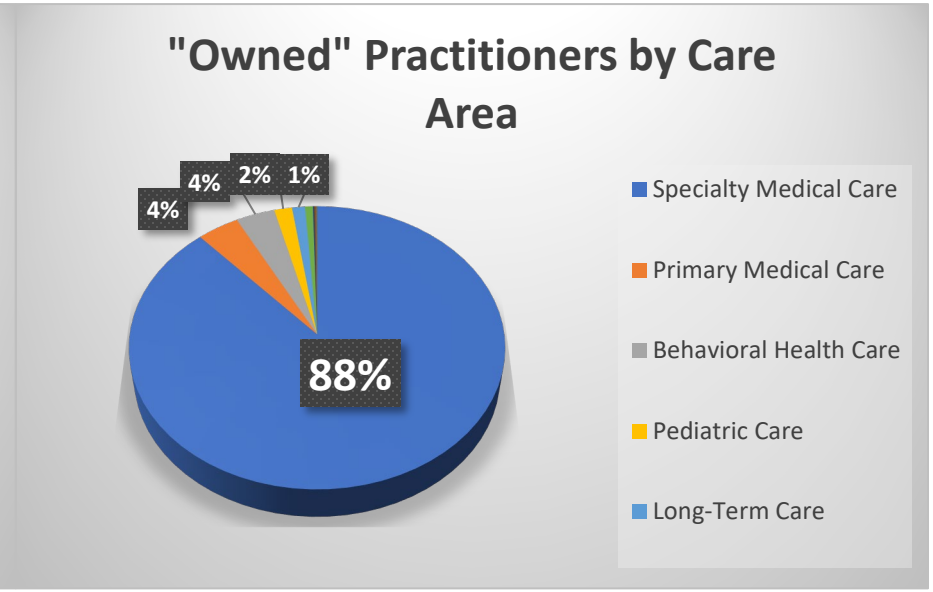


Specialty Medical Care, Primary Medical Care, and Pediatric Care comprise three-quarters of the health system-owned practices, and 94% of all practitioners in “owned” practices. Specialty Medical Care alone accounts for 88% of the “owned” practitioners.

# Recognized PCMH

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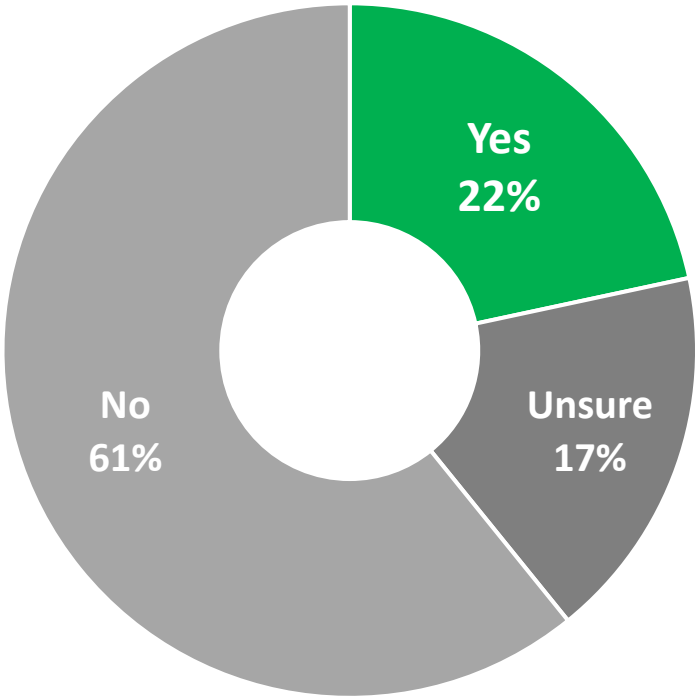
Of the 268 primary care practices that reported, 58 (22%) know they are recognized as PCMH (Patient Centered Medical Home) practices, while 17% are unsure, and 61% are not PCMH.

According to the National Committee for Quality Assurance (NCQA), the patient-centered medical home is a model of care that emphasizes care coordination and communication to transform primary care into “what patients want it to be.”

NCQA PCMH Recognition is the most widely adopted model for transforming primary care practices into medical homes. Their PCMH standards include federal “meaningful use” definitions. Clinicians at practices that meet the highest NCQA requirements are positioned to qualify for meaningful use bonuses.

**Percent of Primary Care Practices that are PCMH**



# Medicaid Patient Visits

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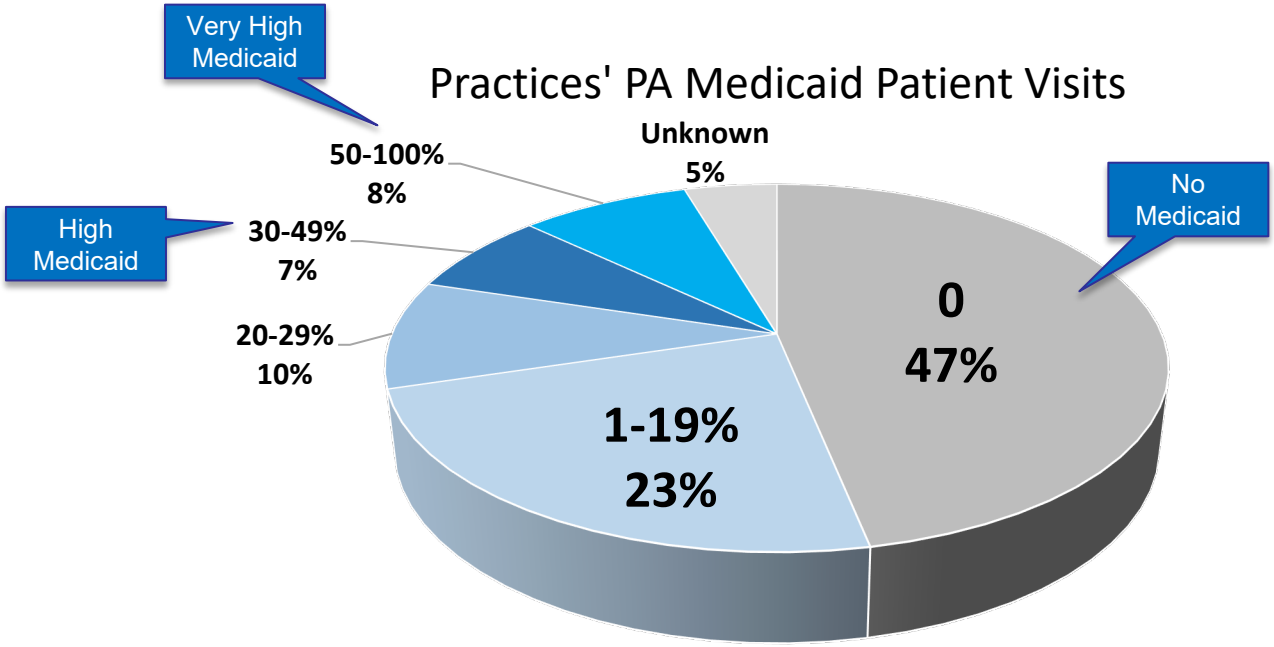
Nearly half (47%) of practices that responded serve no Medicaid patients. For almost a quarter (23%) of practices, between 1 and 19% of their patient visits are paid by Medicaid. Another 10% of practices report 20% to 29% Medicaid patient visits, 7% experience 30% to 49% Medicaid volume, and 8% are very high-Medicaid (50% to 100% of patient visits) providers. Altogether, 48% of surveyed practices serve Medicaid patients, down from 58% in the 2016 survey, likely due to a different mix of provider types represented.



# Payor Mix of Practices Surveyed

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Eight percent of practices reported that Pennsylvania Medicaid pays for 50% to 100% of their patient visits, and 47% indicated that they have no Medicaid-paid visits. Most (83%) do not provide any care for out-of-state Medicaid patients, but 10% indicated that between one and 19% of their patient visits are by such patients. For 67% of practices, commercial insurance plans pay at least 30% of their patient visits, and for 40%, between half and all of their visits are paid this way.

| Payor | 0% | 1-19% | 20-29% | 30-49% | 50-100% | Unknown | Grand Total |
|---|---|---|---|---|---|---|---|
| PA MA | 47% | 23% | 10% | 7% | 8% | 5% | 100% |
| OOS MA | 83% | 10% | 1% | 0% | 0% | 6% | 100% |
| CHIP | 57% | 33% | 3% | 1% | 0% | 6% | 100% |
| Medicare | 25% | 20% | 16% | 20% | 15% | 4% | 100% |
| Commercial Insurance | 9% | 9% | 12% | 27% | 40% | 4% | 100% |
| Other | 22% | 32% | 9% | 9% | 13% | 16% | 100% |

# High-Volume Medicaid Practices

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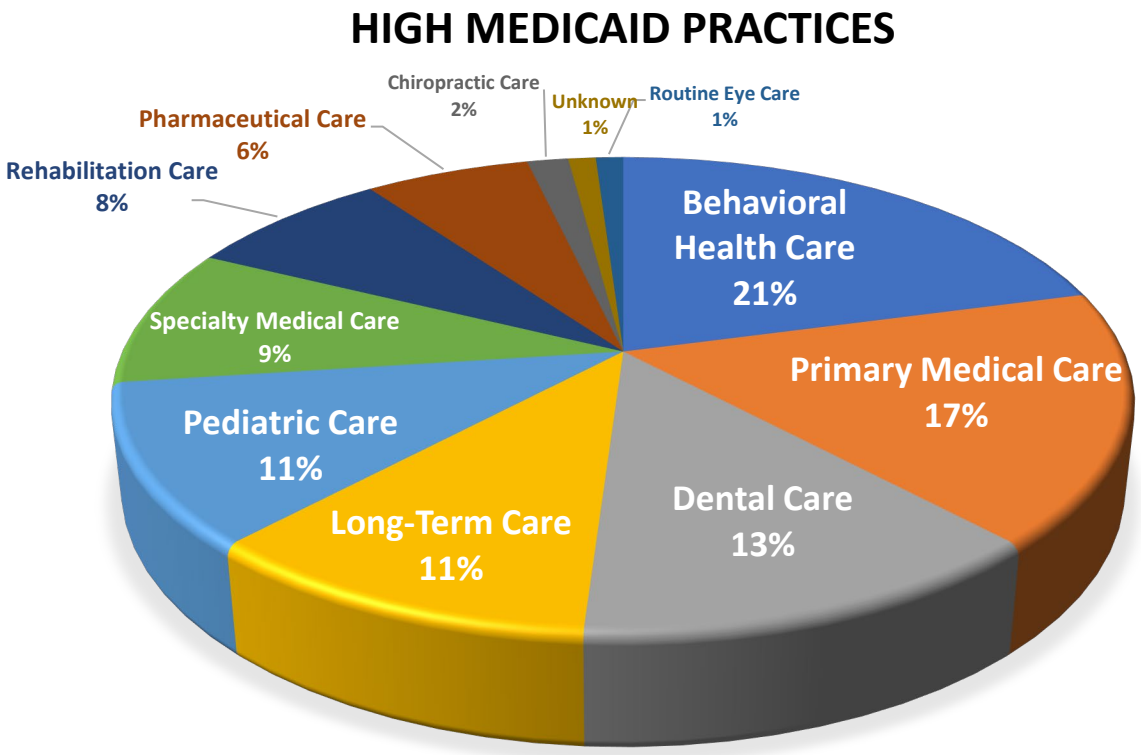
The 192 highest-volume Medicaid practices (those with 50% to 100% Medicaid patient visits) are comprised chiefly of those providing behavioral health (21%), primary care (17%), dental care (13%), and long-term care (11%.) Together, these four categories of care account for 62% of the highest-volume Medicaid providers.



# High-Volume Medicaid Providers

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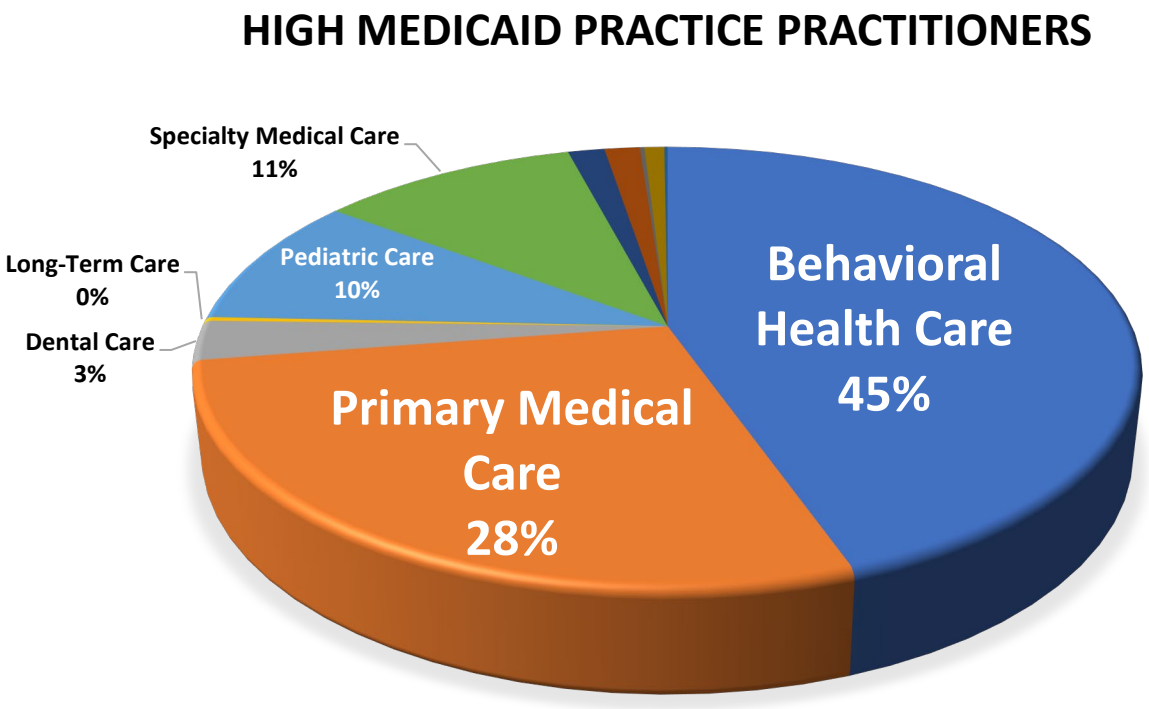
When the same group of high-volume Medicaid practices are weighted by the individual practitioners they represent, behavioral health providers comprise 45% of the total.




The chart above does not include practitioners from nursing home chains because the number is not known.

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# Appendix IV

## Provider Type Assignments to Care Areas and to EP-type

# Assignments to Care Areas

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The following table shows the assignment of provider/facility types to the "care areas" used for analysis, as well as the surveys and individual providers represented:

| Care Area | Examples of Included Provider Types | Number Surveys | Percent of Total | Number Providers | Percent of Total |
|---|---|---|---|---|---|
| Behavioral Health Care | Psychiatrists, Psychologists, BH/MH Therapists/Counselors | 486 | **20.5%** | 3,288 | **14.2%** |
| Specialty Medical Care | Physicians (Specialists, like Cardiologists, Urologists, etc.) | 432 | **18.2%** | 12,613 | **54.4%** |
| Dental Care | Dentists, Oral Surgeons, Orthodontists | 362 | **15.3%** | 613 | **2.6%** |
| Primary Medical Care | Physicians (Family/General/Internal Medicine), Physician Assistants, Nurse Practitioners, Nurse Midwives, Gynecologists, OB/GYN, FQHCs and look-alikes, RHCs, Urgent Care Centers, Free clinics, Veterans Affairs Clinics | 312 | **13.2%** | 2,119 | **9.1%** |
| Rehabilitation Care | Therapists (Physical, Occupational, Respiratory), Acupuncturists), Physical Medicine, Rehabilitation Hospital | 214 | **9.0%** | 2,812 | **12.1%** |
| Chiropractic Care | Chiropractors | 211 | **8.9%** | 290 | **1.3%** |
| Routine Eye Care | Optometrists | 101 | **4.3%** | 157 | **0.7%** |
| Pharmaceutical Care | Pharmacists | 99 | **4.2%** | 359 | **1.5%** |
| Pediatric Care | Pediatricians | 74 | **3.1%** | 514 | **2.2%** |
| Long-Term Care | Nursing Homes, Long Term Care practitioners (i.e. Home Health) | 49 | **2.1%** | 244 | **1.1%** |
| Unknown | (Usually solo physicians who did not specify their specialty) | 25 | **1.1%** | 106 | **0.5%** |
| Medical Diagnostic Services | Medical Laboratories, Imaging Facilities | 5 | **0.2%** | 72 | **0.3%** |
| Grand Total | | 2,370 | **100.0%** | 23,187 | **100.0%** |

# Eligible Professional (EP) Types

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The following table shows practice/physician/provider/facility types assigned to the "EP Types" category used for analysis:

| Group Practice Types | Physician Types | Physician Types, cont'd |
|---|---|---|
| Addiction Medicine / Drug & Alcohol Treatment | Addiction Medicine | Physician (type unspecified) |
| Cancer Center / Oncology / Hematology | Adolescent Medicine | Psychiatry |
| Cardiology | Allergy and Immunology | Pulmonary Disease |
| College Health | Cardiovascular Disease | Radiation Oncology |
| Dentistry | Critical Care Medicine | Rheumatology |
| Dermatology | Dermatology | Surgery |
| Endocrinology | Endocrinology, Diabetes and Metabolism | Urology |
| Family / general | Family Medicine/General Practice | |
| Family Planning / Women's Health | Gastroenterology | |
| Gastroenterology | Geriatric Medicine | **Non-MD Solo Types** |
| Internal Medicine | Gynecology only | Certified Nurse Midwife |
| Multi-specialty | Hematology | Certified Registered Nurse Practitioner (CRNP) |
| Nephrology | Infectious Diseases | Dentist |
| Neurology | Internal Medicine – general | Nurse Midwife |
| Neurosurgery | Maternal and Fetal Medicine | Nurse Practitioner |
| OB/GYN | Medical Acupuncturist | Physician Assistant |
| Ophthalmology | Neonatal-Perinatal Medicine | |
| Orthopedic | Nephrology | **Facility Types** |
| Otolaryngology | Neurology | Ambulatory surgical center |
| Pain Management / Palliative Care | Neuromusculoskeletal Medicine | Federally Qualified Health Center (FQHC) |
| Pediatric | Nuclear Medicine | FQHC Look-Alike |
| Pediatric subspecialty | Obstetrics and Gynecology | Free Clinic |
| Pulmonary | Oncology | Rural Health Center (RHC) |
| Radiology Physician Practice | Ophthalmology | Urgent Care Center/Clinic |
| Specialty Practice - Unspecified | Orthopaedic Medicine | Veterans' Affairs Clinic |
| Urology | Otolaryngology | |
| Vascular | Pediatrician | |

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# Appendix V

## Data Considerations, Bias, Margin of Error, Analysis Approach

# State Licensee List: Email Effect

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**More practitioners received the 2020 survey invitation:** Because email addresses were available for nearly all licensees in the 2020 records, there was a significant increase (over 42,000) in the number of licensed providers invited to the 2020 office-based practice survey as compared to the 2016 survey.

**Email bias in the 2020 survey:** Email address collection by the PA Dept. of State increased dramatically between 2016 and 2020. Only 270 out of 180,951 licensee records (prior to filtering out licensees with addresses in non-bordering states) lacked an email address in the 2020 survey list. Because 99.85% of licensee records included an email address, there is no email bias present in the 2020 survey results.

**Email bias in the 2016 survey:** For the 2016 survey, the percentage of licensees in each category with email addresses ranged from 34% to 99%, with an overall average of 69%. However, the proportion of each provider type to the total was very similar in the "with emails" group compared to the "all licensees" group.

# Survey Collection Timeline

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The survey, which was offered online only, collected responses from Monday, October 19, 2020, to Monday, November 30, 2020, a period of six weeks.

A web-based survey was utilized.  A hyperlink to the online survey was emailed as part of the survey invitation.

The web-based survey incorporated “skip logic,” enabling follow-up questions to be presented, based on each response.

# Analysis Methodology

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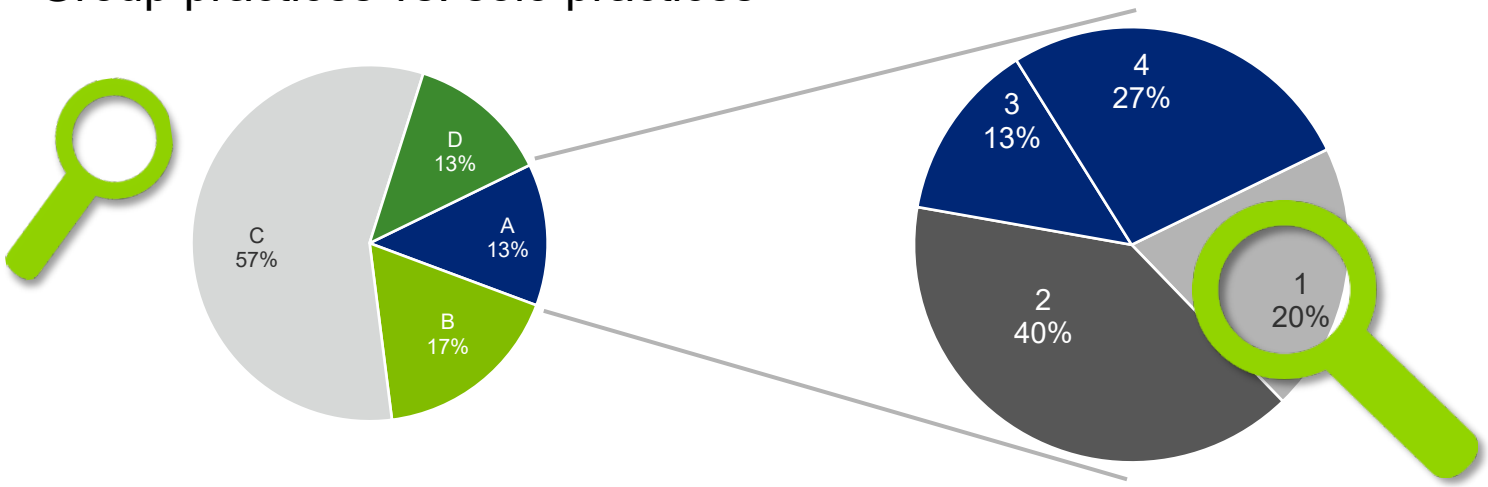
- Analyze each question's responses at the aggregate level
- Depending on the question, break down responses by meaningful segments, such as:
  - Provider type (i.e. "cardiologist")
  - Broader provider type categories (i.e. "primary care")
  - Provider types deemed "Eligible Professionals" for the Medicaid PI Program (and those not eligible)
  - Group practices vs. solo practices



# Questions to Develop Insights

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- Has there been progress in certified EHR adoption and Health Information Exchange since 2010 (when the baseline scan was conducted)?
  - If so, how much?
  - What provider types are most likely to be employing Health IT?
    - Why?
  - What provider types are least likely to be employing Health IT?
    - Why?
- Are provider types that are ineligible for Medicaid and Medicare EHR incentive programs lagging in Health IT adoption/usage?

# Data Considerations / Bias

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## Considerations

- **The survey was not a precise scientific measurement tool**
- **Number of providers invited to take the survey is not known precisely**
  - Because the survey invitations were issued by provider associations in addition to email lists, the total number of practices or individual providers represented cannot be known
  - Invitations were sent to individual providers, rather than practices because a list of practices and contact information was not available
  - While the survey was directed only to practices, the total number of eligible practices in Pennsylvania was not known, and the number of practices reached by survey invitations was not known
- **Significantly larger survey sample than in the 2010 (baseline) scan survey**
  - With regard to any comparisons made in this report between the 2020 or 2016 environmental scan surveys and their 2010 counterpart, note that there were only 131 valid surveys received in 2010, compared to 2,370 in 2020 and 1,201 in 2016. The data generated from the smaller sample size in 2010 is likely far less precise
- **Potential confusion regarding terminology**
  - Due to the nature of IT and the potential for misunderstanding certain terminology, some survey answers may not be accurate

## Potential response bias

- Respondents who are comfortable responding using a web-based survey tool may be more comfortable with technology generally, and thus more likely to adopt/use an EHR system, telehealth, HIE, etc.
- Participants of the MA PI Program, as well as parties interested in the program, were invited, leading to a possible bias toward high-MA providers responding. However, these providers are believed to be a subset of the survey invitee list generated from state licensure records, so any bias may be small.
- The baseline survey (2010) was targeted to high-volume Medicaid providers eligible (or likely to be eligible) for the state's Medicaid EHR Incentive Program (now the PI Program) while the 2020 and 2016 survey was much more broad-based.
- Respondents to the baseline survey were weighted toward large health systems which are believed to be more likely to adopt HIT early. The 2020 and 2016 survey is believed to be more balanced.

# Margin of Error

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Overall: based on all valid surveys representing 23,187 individual providers, and the number of licensed providers for surveyed types totaling 153,840, the **margin of error for the survey is less than 1% at a confidence level of 99%.**

- **For Medicaid Eligible Professional (EP) provider types**, based on 12,223 individual providers represented by the surveys, and a maximum possible total of 82,385 licensed providers in these types, the margin of error is **less than 1% at a confidence level of 99%.**
- **For non-EP providers**, based on 7,990 individual practitioners represented by the surveys, and a maximum possible total of 136,173 licensed providers in these types, the margin of error is **less than 1.5% at a confidence level of 99%.**
- Caveats
  - The number (population) of each type of office-based healthcare provider practice is not known. However, the total number of licensed healthcare providers in each category is known, as is the number of individual providers represented by each practice that submitted a survey. Therefore, the population and sample size used are reflective of individual providers.
  - The margin of error projection assumes a normal distribution, and that all providers within a given practice are of the same type that the practice was described as. (For example, if a practice identified itself as specializing in cardiology, and listed seven individual providers, it is assumed that all seven are cardiologists.)
  - The total number of licensed healthcare providers includes some duplicates because there are some individuals licensed in multiple categories.
  - The number of licensed healthcare providers ("population") is overstated in the margin of error calculation because it includes providers that work in general acute care hospitals, which are outside the scope of the HIT Provider Survey. However, the number of providers working in such hospitals is not known.

# Valid Survey Criteria

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**Checklist for valid surveys:**

- ❑ Practice represented must be located within Pennsylvania and actively providing direct patient care to Pennsylvanians
- ❑ Individual completing survey must be authorized to represent the practice
- ❑ Practice must be of a qualifying provider type
  - ❑ Sole practitioners
  - ❑ Outpatient/ambulatory group practices
  - ❑ Nursing homes or other Long-Term Care providers
  - ❑ Must not be from a general acute care hospital
    - ❑ Data for these hospitals will be taken from the American Medical Association's annual hospital survey
- ❑ Must have answered at least one "content" question
  - ❑ "Content" questions refer to those regarding Health IT usage, rather than practice name, location, type, etc.

- Additionally, duplicates from the same practice were removed

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# Appendix VI

## Differences in Survey Sample of 2020 vs. 2016

# 2020 Survey Sample

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The 2020 office-based practice survey sample included higher percentages of practices that are known to have lower EHR adoption rates and less HIE usage. As a result, overall statistics for some metrics were lower than their counterparts in 2016.

The chief cause was a significant increase in the number of licensed providers invited to take the survey. The same types of providers were invited, but a large number of licensee records lacked an email address in 2016. By 2020, virtually all licensee records included email addresses. The increase in records with email addresses was not equal across provider types, favoring provider types that not only tend to lag in HIT generally, but also tend to operate more commonly in solo practices.

This resulted in a higher percentage of solo practice surveys, a higher percentage of non-EP-type practices, and lower overall EHR adoption/usage rates. However, when viewed by number of practitioners represented (employed) in practices responding to the survey, much of the disparity is mitigated.

# Solo Practice Response

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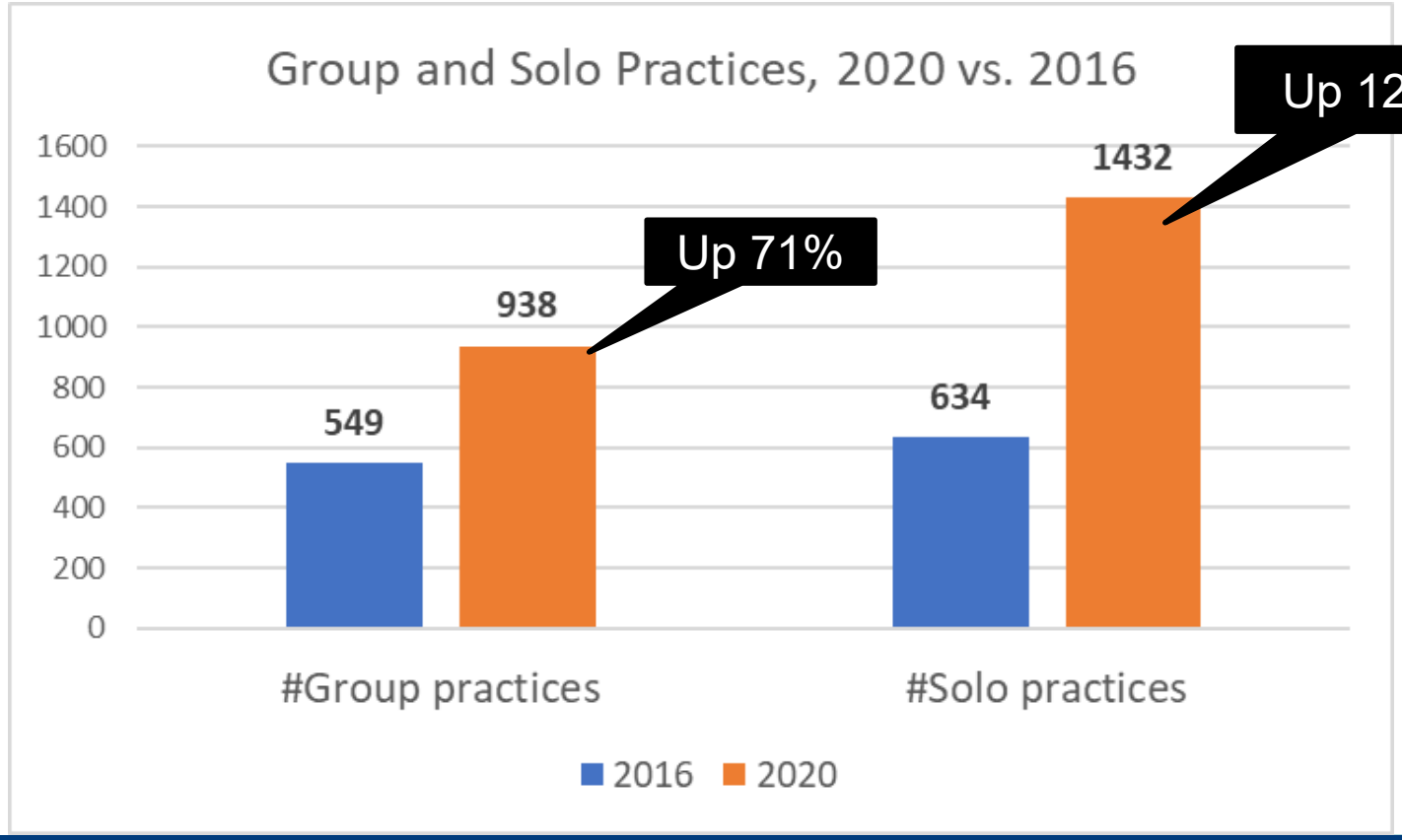
OMAP received more solo and group practice surveys in 2020 as compared to 2016, but the increase in solo practices (+126%) was greater.



# State Licensee List: Growth

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The top three non-EP-types for invitee increases were Pharmacists (6,915), Physical Therapists (5,461), and Occupational Therapists (3,534). These three account for 37.8% of the increase in invitees.

| License Type | Change in # | EP Type? |
|---|---|---|
| CRNP and Physician Assistant | 7,571 | Yes |
| **Pharmacist** | 6,915 | No |
| **Physical Therapist** | 5,461 | No |
| Physician and Surgeon (Medical and Osteopathic) | 5,279 | Yes |
| **Occupational Therapist** | 3,534 | No |
| Dentist | 3,491 | Yes |
| Respiratory Therapist (including Osteopathic) | 2,981 | No |
| Dietitian-Nutritionist (LDN) | 2,618 | No |
| Psychologist | 2,061 | No |
| Chiropractor | 1,324 | No |
| Optometrist (all types) | 657 | No |
| Doctor of Podiatric Medicine | 285 | No |
| Acupuncturist (all types) | 68 | No |
| Nurse-Midwife | (118) | Yes |
| Grand Total | 42,127 | |

# EP vs. Non-EP Types

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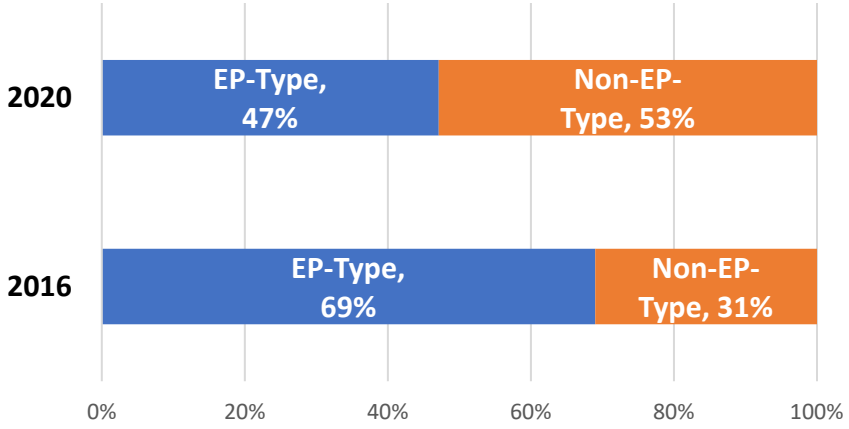
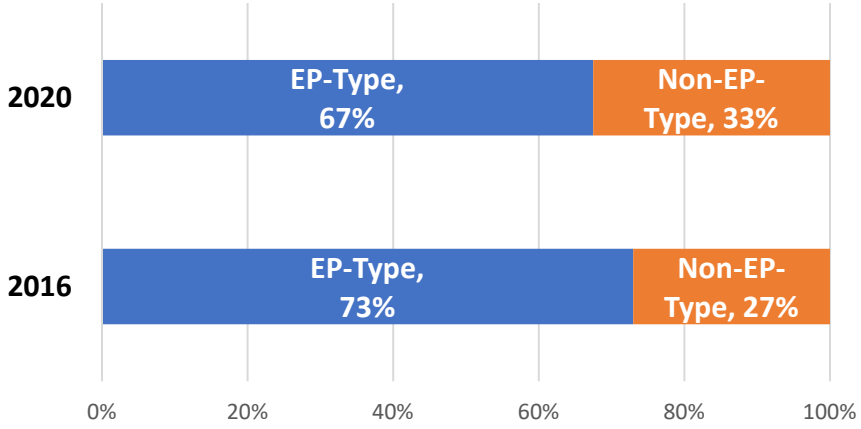
- The percentage of EP-type surveys received in 2020 was 22 points lower than in 2016, impacting overall results
- The percentage of practitioners employed by EP-type practices also declined in the 2020 results, but to a lesser degree (67% vs. 73%)
- Significantly more survey invitations were sent to non-EP type practitioners in 2020 (see next slide)

Composition of Surveys, 2020 vs. 2016
by EP-type Status




Composition of Surveys, 2020 vs. 2016
by Practitioners Represented (EP-Type Status)



# EP vs. Non-EP Types

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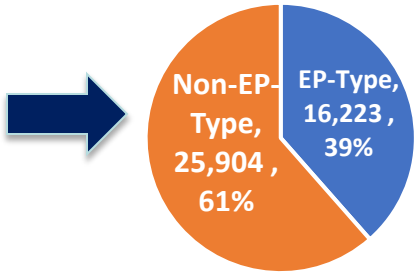
The survey invitation list of licensees grew by 42,127 or 37.7% for 2020 vs. 2016, due primarily to more records including an email address.

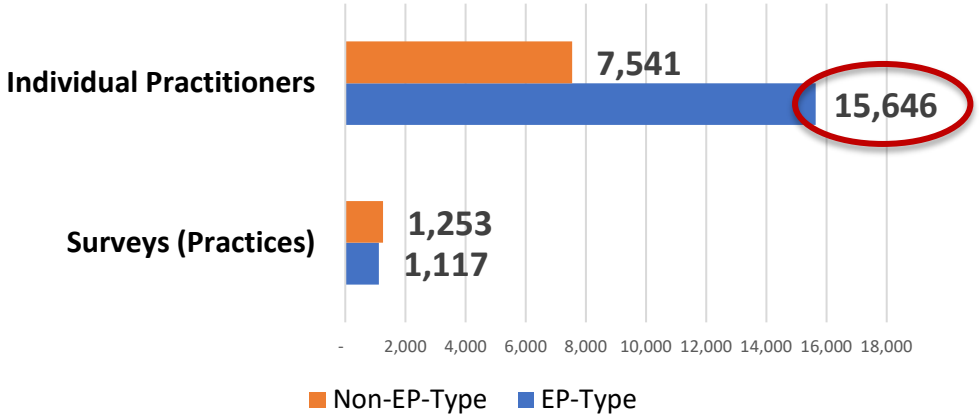
For every two additional EP-type practitioners, there were three additional non-EP-type practitioners invited.

**Increase in Licensee List Invitees, By EP-Type / Non-EP-Type Licenses**




Although more surveys were received from non-EP-type practices than from EP-type, the number of individual providers (practitioners) represented by EP-type practices is more than double that for non-EP-type practices, and accounts for 67% of the total

Surveys and Practitioners, EP-type vs. Non-EP-type



# State Licensee List: Breakdown

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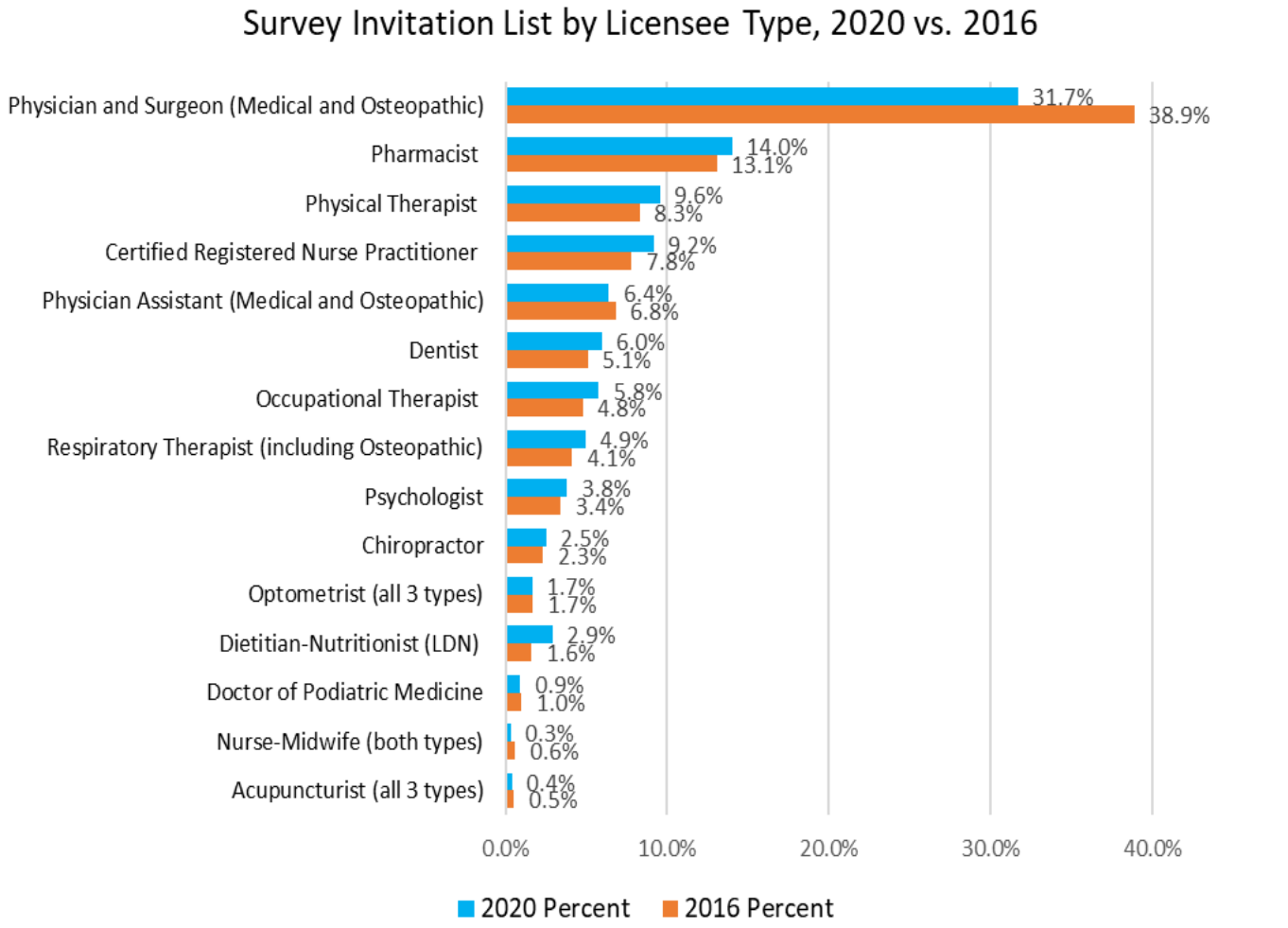
The 2020 licensee list for survey invitations included slightly higher percentages of licensees in all but two of the top ten categories. Notably, the category with the most licensees -- physician and surgeon – declined from 38.9% of the total to 31.7% (a decrease of 7.2 points, or 18.5%)



# Surveys by Care Area

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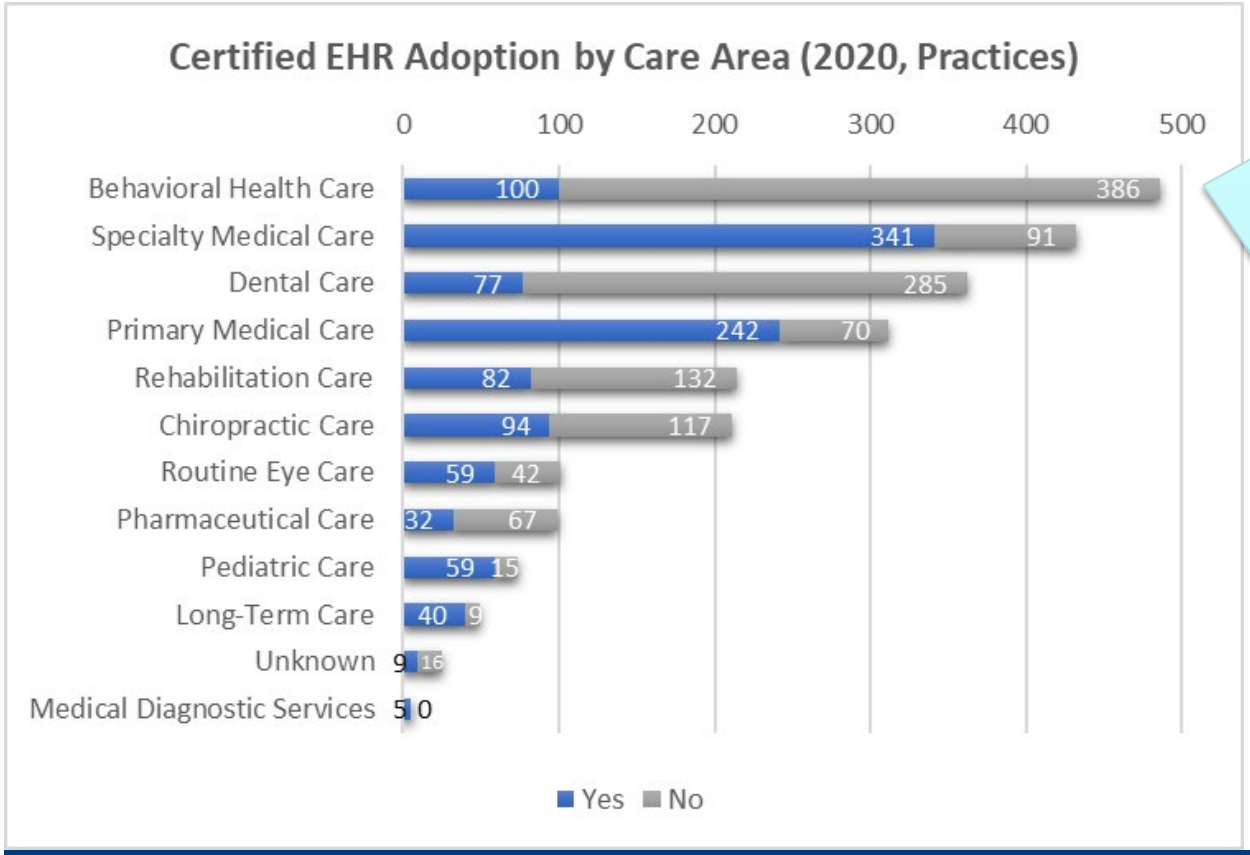
This chart shows both the prevalence of surveys received by care area, and the number of each (blue) that use certified EHRs




More behavioral health, dental, rehabilitation care, and chiropractic care surveys were received in 2020, driving down the average EHR adoption and HIE rates because these areas have lower rates than physical health practices

# EP vs. Non-EP Types

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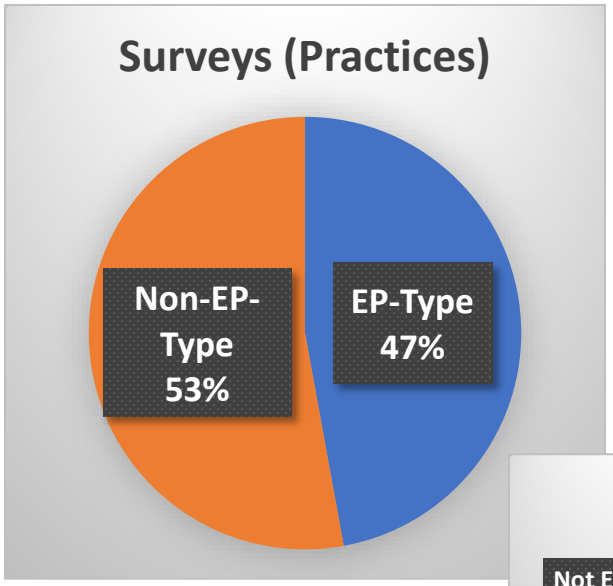
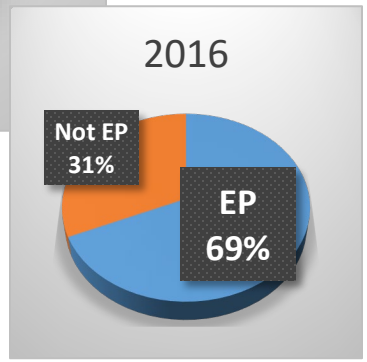
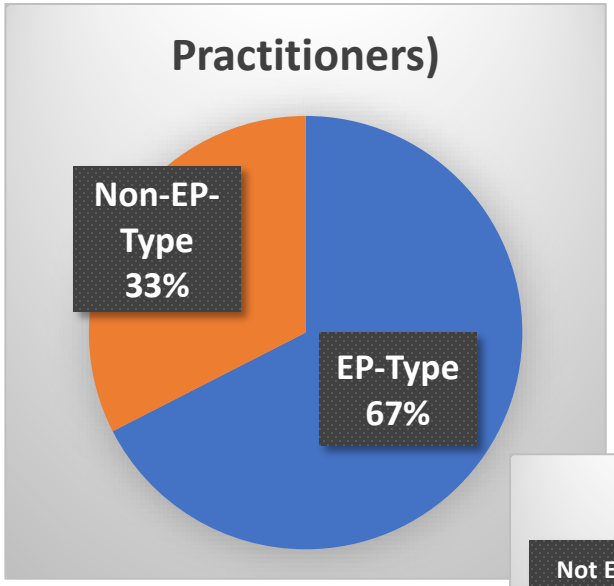
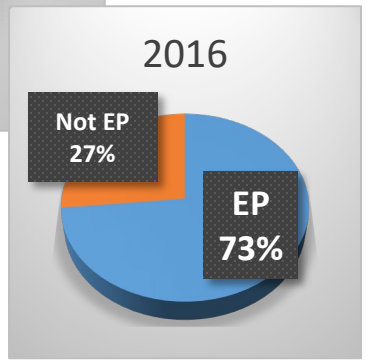
The 2020 survey sample included a larger percentage of non-EP-type practices which typically have lower EHR adoption and HIE usage rates. In 2016, 31% of surveys were from non-EP-type practices, rising to 53% in 2020.



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# The end