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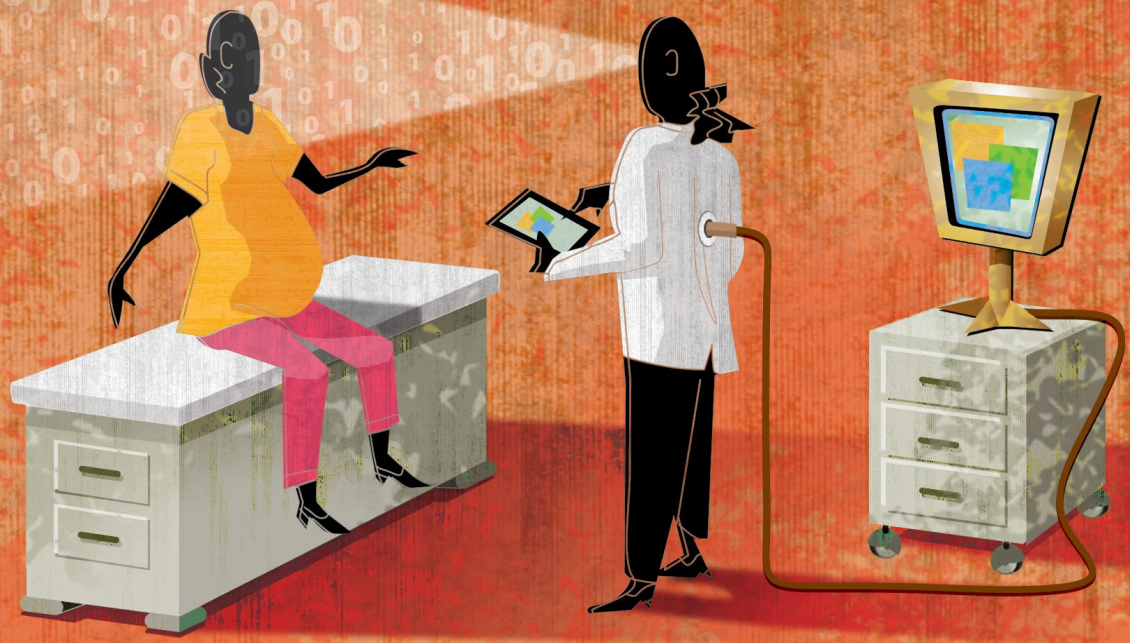

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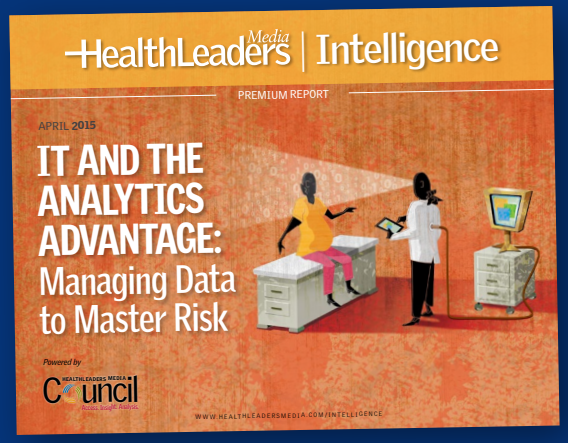
IT AND THE ANALYTICS ADVANTAGE: Managing Data to Master Risk



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PERSPECTIVE

Healthcare 3.0: Smart System Planning and Redefining Care Delivery

Today's healthcare landscape includes multiple providers across the continuum, all generating ever-growing volumes of patient and administrative data. And as quickly as data volumes have spiked, so too have the expectations for improved patient outcomes, cost accountability, population needs, and risk management. This requires us to find meaning and connections in real-time, with greater financial efficiency, to deliver better patient care.

It is no longer acceptable simply to store healthcare data, we must have protocols in place for these data to be integrated, allowing us to develop knowledge through actionable information and analysis. These demands have created nothing short of a seismic shift for our industry, requiring a transformation of how we think about information in all forms and from all sources.

The question is, how do we, as an industry, get there? How do we redefine the delivery of healthcare? Having the right data, in the right form, and at the right time is key, but these elements take planning, investment, and commitment. Globally, healthcare organizations have made considerable investments in EHR systems. And while these systems have proven successful in managing structured information, they fall short when it comes to handling unstructured data. As much as 80% of healthcare data is said to be unstructured and unmanaged, according to the Institute for Health Technology Transformation (iHT2).

We will need to accelerate integration, optimization, and big-data innovation to capture the full value of both patient and financial data in real-time. But without analysis, big data provides few answers. And without full data access, even analysis offers false hope and limited meaning. As healthcare moves beyond data storage, and even beyond simple analysis, optimal use demands that we have the tools to aggregate, synthesize, and isolate information, as well as the skills and vision to do so.

To care for populations with similar diseases requires us to be fluent in the best evidence-based medicine. We must understand the progress of patient groups with the same conditions, just as we must understand the prevalent health needs of our patient base. At the same time, we must have access to data enabling us to determine the best treatment for the individual patient in front of us, whose condition may—or may not—resemble anyone else's. Our clinicians and staff will need training, and we will need the infrastructure to serve these two broad, but critical, goals.

Perspective (continued)

We need patient records that are seamlessly integrated so that the plethora of available data can be analyzed, and so we can make it actionable in our quest to deliver better patient care. Yet we must beware of one-size-fits-all platforms, and choose wisely for our institutions, offices, missions, and locations. The same approaches apply to how we can and should utilize our financial and administrative data to empower efficiencies and drive down the cost of doing business.

Success in this next-generation healthcare environment will take a combination of record integration, interoperability, usability, and infrastructure. Without these tools, we will be unable to:

- perform the analyses that reveal trends in illnesses or disease
- determine the most successful treatment patterns
- uncover inefficient spending

These gaps in understanding will continue to affect patient outcomes and care quality—leading to increased costs, less-effective treatments, and, ultimately, higher readmission rates.

What's more, keeping up in the Healthcare 3.0 era will require us to leverage big data solutions that integrate fragmented information with existing patient health records. This will allow providers to have the actionable knowledge from it they need to make better clinical decisions, and the enterprise to make better administrative choices. Moreover, we need data that is streamlined across the continuum of care, regardless of its source, in an industrywide effort that supports our shared clinical aspirations of improving patient outcomes. The challenge, for us all, is to divine intelligence from patient and business data to prevent the digital landfills that render it useless in the current healthcare landscape.

Technological innovation now allows for just that. Yet while the need for and projected use of analytics grows in healthcare, it's clear that some segments of the industry feel unprepared. But therein lies our greatest opportunity—to redefine data management in healthcare to ensure the accuracy, interoperability, and integration needed for this next-gen era.

This Intelligence Report indicates changes ahead for both financial and clinical data. What can be derived from the findings is that we should count on leaps in the types of data collected, and in the expectations of interoperability and outcomes. And EMC will continue its commitment to making sure the healthcare industry continues advancing toward better care delivery, more cost accountability, and improved patient outcomes.

Bill Bunting
Director, Healthcare Solutions
EMC

About the Premium and Buying Power Editions

This is a summary of the Premium edition of the report. In the full report, you'll find a wealth of additional information. For each question, the Premium edition includes overall response information, as well as a breakdown of responses by various factors: setting (e.g., hospital, health system, physician organization), number of beds (hospitals), number of sites (health systems), net patient revenue, and region.

Available separately from HealthLeaders Media is the Buying Power edition, which includes additional data segmentation based on purchase involvement, dollar amount influenced, and types of products or services purchased.

In addition to this valuable survey data, you'll also get the tools you need to turn the data into decisions:

- A Foreword by Rick Schooler, Vice President and Chief Information Officer at Orlando (Florida) Health and Lead Advisor for this Intelligence Report
- Three Case Studies featuring initiatives by Albany (New York) Medical Center; Rex Healthcare in Raleigh, North Carolina; and Orlando (Florida) Health
- A list of Recommendations drawing on the data, insights, and analysis from this report
- A Meeting Guide featuring questions to ask your team

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Methodology

The *2015 Healthcare IT and Analytics Survey* was conducted by the HealthLeaders Media Intelligence Unit, powered by the HealthLeaders Media Council. It is part of a series of monthly Thought Leadership Studies. In January 2015, an online survey was sent to the HealthLeaders Media Council and select members of the HealthLeaders Media audience. A total of 367 completed surveys are included in the analysis. The margin of error for a Base of 367 is +/-5.1% at the 95% confidence interval.

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The HealthLeaders Media Intelligence Unit, a division of HealthLeaders Media, is the premier source for executive healthcare business research. It provides analysis and forecasts through digital platforms, print publications, custom reports, white papers, conferences, roundtables, peer networking opportunities, and presentations for senior management.

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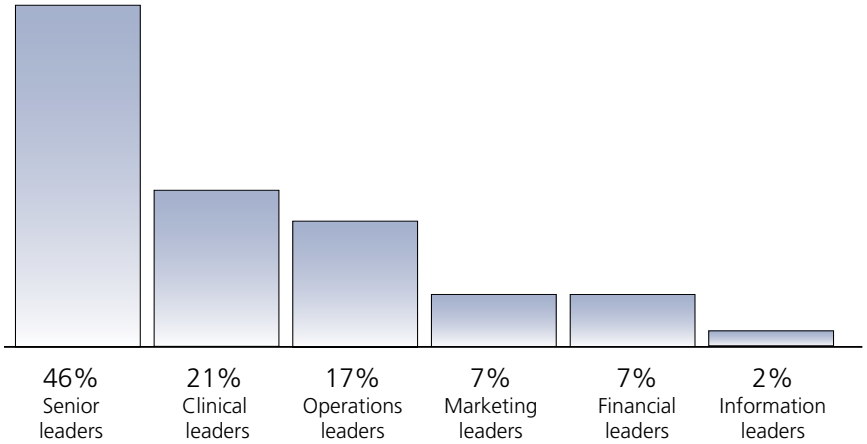
Respondent Profile

Respondents represent titles from across the various functions at at healthcare provider organizations.

Title

Base = 367



Senior leaders | CEO, Administrator, Chief Operations Officer, Chief Medical Officer, Chief Financial Officer, Executive Dir., Partner, Board Member, Principal Owner, President, Chief of Staff, Chief Information Officer

Clinical leaders | Chief of Cardiology, Chief of Neurology, Chief of Oncology, Chief of Orthopedics, Chief of Radiology, Chief Nursing Officer, Dir. of Ambulatory Services, Dir. of Clinical Services, Dir. of Emergency Services, Dir. of Inpatient Services, Dir. of Intensive Care Services, Dir. of Nursing, Dir. of Rehabilitation Services, Service Line Director, Dir. of Surgical/Perioperative Services, Medical Director, VP Clinical Informatics, VP Clinical Quality, VP Clinical Services, VP Medical Affairs (Physician Mgmt/MD), VP Nursing

Operations leaders | Chief Compliance Officer, Chief Purchasing Officer, Asst. Administrator, Chief Counsel, Dir. of Patient Safety, Dir. of Purchasing, Dir. of Quality, Dir. of Safety, VP/Dir. Compliance, VP/Dir. Human Resources, VP/Dir. Operations/ Administration, Other VP

Financial leaders | VP/Dir. Finance, HIM Director, Director of Case Management, Director of Patient Financial Services, Director of RAC, Director of Reimbursement, Director of Revenue Cycle

Marketing leaders | VP/Dir. Marketing/Sales, VP/Dir. Media Relations

Information leaders | Chief Medical Information Officer, Chief Technology Officer, VP/Dir. Technology/MIS/IT

Type of organization

Base = 367

Hospital	33%
Health System	26%
Physician Org	14%
Health Plan/Insurer	9%
Long-term Care/SNF	8%
Ancillary, Allied Provider	7%
Government, Education, Academic	3%

Number of sites

Base = 97 (Health systems)

1–5	13%
6–20	30%
21+	57%

Number of beds

Base = 120 (Hospitals)

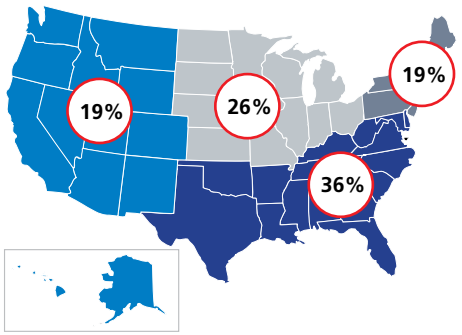
1–199	45%
200–499	37%
500+	18%

Number of physicians

Base = 53 (Physician organizations)

1–9	21%
10–49	32%
50+	47%

Region



WEST: Washington, Oregon, California, Alaska, Hawaii, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming

MIDWEST: North Dakota, South Dakota, Nebraska, Kansas, Missouri, Iowa, Minnesota, Illinois, Indiana, Michigan, Ohio, Wisconsin

SOUTH: Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Tennessee, Kentucky, Florida, Georgia, South Carolina, North Carolina, Virginia, West Virginia, D.C., Maryland, Delaware

NORTHEAST: Pennsylvania, New York, New Jersey, Connecticut, Vermont, Rhode Island, Massachusetts, New Hampshire, Maine

ANALYSIS

Analytics: Accept the Challenge and Make Data Work for You

MICHAEL ZEIS

Information technology provides healthcare organizations with an essential infrastructure. But from an evolutionary perspective, healthcare IT has its roots in finance and administration, with clinical IT applications developing along a separate path. The shift to delivering value-based care challenges IT in two principal ways.

First, as organizations respond to the industry's push toward capitated or at-risk payments, decision-makers depend on analysis that is based on both clinical and financial data, so organizations are challenged to integrate data. Second, as early reimbursement penalties morph into broader-based responsibility for health outcomes, and attribution of patients to providers becomes common, the performance of care partners becomes a concern. Both factors push healthcare IT teams to work with broader sets of data, with the objective of supporting a new set of decisions in new ways.

Although the labels may look pretty much the same, there will be a big difference between the way organizations apply analytics now and the analytics applications in the near future. "The analytics work that we will do in the future will require deeper competencies and be at a different level of discovery than today's work," says George T. Hickman, FCHIME, LCHIME, LFHIMSS, CPHIMS, CHCIO, executive vice president and chief information officer of Albany Medical Center. The nonprofit organization incorporates

WHAT HEALTHCARE LEADERS ARE SAYING

"Accurate data will provide profiling and information on how to better manage chronic diseases in the outpatient setting and in better partnership with our physicians. It should be a significant benefit in moving toward value-based reimbursement. We cannot manage without data."

—Chief operations officer for a medium hospital

"Analytics is a tool, not the holy grail. It is an important tool, but just a tool."

—CEO for a large health system

"The challenges include stratifying all the clinical- and business-oriented data we are getting from our current EHR and using the data to make successful and highly skilled decisions on patient care. The opportunities include cost savings associated with the implementation, delivering the right care at the right time and at the right price."

—Director of surgical/perioperative services for a medium health system

"We recognize the need. We want to do it. But we have to get ourselves ready to move on it. Our resources are limited, so we expect to work with our affiliate and with our EHR vendor to take the first steps."

—Chief financial officer for a small hospital

"Appropriate analytics will help provide insight into service utilization, assessing community needs, assessing which service lines will be better shared with partners and which service lines are no longer viable. Analytics will also be vital in computer-assisted modeling to project more accurately resource utilization and potential needs."

—Director of emergency services for a medium hospital

Analysis (continued)

the 734-bed Albany Medical Center Hospital, Albany Medical College, a biomedical research enterprise, and a physician practice with 425 doctors.

Hickman reminds us that in IT, the healthcare industry lacks the degree of maturity seen in other industries. "The sorts of things that we're doing today may be new to healthcare, but they rely on some toolkits that are generally straightforward." He notes that, for the most part, healthcare IT is moving beyond early siloed transactional systems that provided a retrospective or historical view of healthcare activities and today is focused more on the logistics and techniques of working with many sets of data, often in what is called a *data warehouse*.

Working with many sets of data allows views of the organization's operations that are not possible when examining one set of data at a time, and, Hickman says, leaders are laying a foundation that "uses a different sort of quantitative toolkit to move to a higher form of quantifiable analysis, one in which you seek relationships that exist in the data. Now we've got more data. We've got more questions. And the questions are a different flavor. We're going to have to have large-scale computing environments, and high-end probabilistic relational tools that can mine the data to help us by discovery."

We can see that many healthcare leaders understand what is ahead. Nearly all (95%) health systems use analytics to improve clinical quality, the top clinical application across all settings. The percentage using analytics to improve clinical quality (88% overall) is more than twice the percentage now using analytics for risk stratification (42%). But within three years, 73% say they will be using analytics for risk stratification, an increase of 31 percentage points. And 78% say they will be using analytics to assess population health needs, up from 47% today. Even though an advisor cautions that we don't know the degree of utilization, the results indicate there is broad recognition that IT will need to operate with a higher level of sophistication as their organizations approach value-based care.

> "The analytics work that we will do in the future will require deeper competencies and be at a different level of discovery than today's work."
>
> —George T. Hickman

Linda Butler, MD, is vice president of medical affairs, chief medical officer, and chief medical information officer for Rex Healthcare of Raleigh, North Carolina, a member of UNC Health Care, a nonprofit healthcare system that includes the 660-licensed-bed Rex Hospital. She explains that lowering the cost of care, which is the clinical analytics item that shows the greatest increase over the next three years (32 percentage points) is not as simple as it sounds, even when an organization standardizes.

"Now that we have revenue cycle on Epic and we have clinical care on Epic

Analysis (continued)

and we're all going to be on the same cost accounting system," Butler says, "we hope we'll be able to link our cost accounting system with Epic, too, so we'll truly know what our cost of care is. But we don't really have a way to link the clinical outcomes with the cost quite yet." Nonetheless, as the industry shifts its financial underpinnings away from fee-for-service and toward value-based payment, such a connection is very important.

"We need to know the cost of care if we're going to be at risk," Butler explains. "We need to know what it costs us to take care of the average pneumonia patient. Right now, it is hard to risk-adjust, because we don't have a way to look at the case-mix index or the severity of illness with the outcome. We know overall readmissions and overall mortality, but we don't have good computer-assisted coding software that will allow us to look at patients and try to risk-adjust. And I think that one is going to be really hard."

Noting that survey results show that 47% now are doing analytics to assess population health needs, Hickman acknowledges that there is considerable work ahead. "We try to assess the population's health needs by examining a lot of market data. We're able to draw conclusions about what form of interventions are being utilized and where to expect market growth so that we know how to build a healthcare delivery system that meets those demands. But if we consider real disease management, where the interventions are about wellness, and having primary care at the front end, and avoiding unnecessary emergency department visits and hospitalization, many providers are not yet doing that."

> "We need to know the cost of care if we're going to be at risk."
>
> —Linda Butler, MD

Such is the case with evaluating population risk assessment. We can see a high degree of interest: In the three-year time frame, 65% expect to be using financial analytics for population risk assessment, more than twice the present percentage (29%). Advisor Butler suggests that there may be some wishful thinkers among those who expect to add such applications. "We know that population health is the direction we're moving in, but there's so many of us that really are not prepared, and we're hoping we will have these answers in three years."

Risk prompts analytics push.

Decisions about risk prompt a great deal of today's interest in squeezing more insight out of IT and analytics. First, entering contracts with downside risk is new territory for many, so the parameters for weighing the merits of contracts are new and different. Second, once the deal is struck, both monitoring status and guiding performance require new views of operations.

Readmission penalties offer a preview of sorts. Providers can learn about attribution from readmission penalties, and readmission penalties teach

Analysis (continued)

them how difficult it is to modify performance when performance is tallied long after the fact. Butler, who serves as both CMO and CMIO, explains how the data-based system for determining readmission penalties is of no use in guiding actions to reduce readmissions, and often delivers results that are too late even to confirm patient attribution.

"How can we make sure we're having the right patient attributions?" she asks. "Just because they have in their record that it's our patient and it's our doctor taking care of them, it may not actually be true. We need to get results at the end of the month so we can intervene in a timely fashion. It usually lags behind. I don't know what our readmission rates are in the last three months for our Blue Cross contract. When it arrives, I can't really use that information for anything."

More than half of survey respondents (54%) are exposed to downside risk for at least a portion of their patient population. Along with that exposure comes a greater need for analytics. Higher percentages (19%) of those with 20% or more of their patient population at risk say that they acquired an analytics software module as a result of having a downside-risk contract, compared to only 6% of those with lower portions exposed to downside risk.

Of course, acquiring the software doesn't necessarily provide answers. Software and its output need to be integrated into the organization's work process and decision dynamics. There is a technical aspect to this, but especially with analytics efforts, staff involvement makes it work.

Staff capabilities should be part of the organization's make-or-buy decision, and organizations may find they can advance faster if they avoid in-house development activities and use vendor-provided platforms where possible.

> "Don't spend a lot of time and money trying to build platforms, because to build a data model to support analytics, you've got to have a certain level of expertise."
>
> —Rick Schooler

Says Rick Schooler, vice president and chief information officer for Orlando Health, a nonprofit network of eight hospitals with a combined 1,788 beds serving Central Florida, "Hire the people who are going to be the data users, the expert users, the super users, people who have knowledge about what you're trying to gather. Don't spend a lot of time and money trying to build platforms, because to build a data model to support analytics, you've got to have a certain level of expertise."

The relationship between accepting risk and using analytics to support decision-making is clear to Schooler, lead advisor for this Intelligence Report. "You won't be able to survive this kind of a scenario without this kind of information, and without the tool sets and the talent to be able to handle it. It's just that simple."

As Butler has mentioned, Schooler, too, says that speed becomes important because healthcare leaders need information to support timely

Analysis (continued)

action. "With more pressure on the downside, providers have no choice but to enhance their ability to know what's going on quicker, before it's too late to do anything about it. [What's needed is] concurrent real-time information that is actionable, versus a two-dimensional report that might cover three to six months of history."

And the need for immediacy extends to day-to-day care. "A lot of contracts, for either upside or downside risk, are going to have metrics that get calculated over time," Schooler says. "But you've got to manage this, day to day, at an individual-patient level with actionable information. That way, when you get to the point of rolling up all these aggregated results, the metric is going in the direction you want it."

Of course, providers recognize that hands-on care is fundamental to mission and strategy. But the mission and the strategy now include outcome measures and population health; the activities of primary care physicians and other providers outside of the acute care environment are part of the formula. We are used to seeing larger organizations—those with high net patient revenue—and larger health systems lead in many aspects of healthcare reform. But more than one-third (36%) of physician organizations exposed to downside risk say that the presence of risk caused them to increase their dependence on analytics modules, slightly higher than health systems (33%) and considerably higher than hospitals (16%). That's what happens when you are on the front lines of care delivery and, therefore, play a pivotal role in healthcare reform.

Says Butler, "Acute care is not the solution. If you don't do the prevention part right, then patients end up within our doors. And it's a lot easier for the government to keep us on the hook because they see us as the biggest cost. But if you think about where population health is best managed and controlled, it's in the physician office. Once patients have gotten to the hospital, it's too late."

> "We're going to have to have large-scale computing environments, and high-end probabilistic relational tools that can mine the data to help us by discovery."
>
> —George T. Hickman

Data provides the foundation.

The data sources for much of today's financial analytics reflect today's reporting requirements: 79% of respondents do analytics on Medicare/Medicaid patient claims data, and 74% use patient claims data from commercial payers. While that may reinforce how organizations are attentive to the relationship between patient care and revenue, advisors note that patient claims data provides a retrospective view, a view that does not support near-term action or predictive analytics that would provide a measure of confidence about making decisions in support of the need to bear risk. Butler notes, "I think the stuff that we're already focusing on is the more or less low-hanging fruit that is pretty easy to get out of systems."

Analysis (continued)

In the near-term future, care partners' cost and productivity data will garner more new attention than other types of financial data. Over the next three years, 37% of organizations expect to begin to perform analytics on care partners' cost data, boosting that activity from 16% to 53% of respondents; likewise, 30% expect to begin working with care partners' provider productivity data, raising that activity from 19% now to 49% within three years.

"The only way to manage financing of healthcare is to also manage care across the continuum for every episode of care that occurs for a particular person," Hickman says. "If you're going to do that, you better understand how the partners you select are performing with regard to interventions and their ability to manage interventions."

The electronic health record remains a top data source for analytics efforts, now (81%) and in the future (95%), but Hickman suggests that, while organizations will continue to depend on the EHR as a source of patient health data, the healthcare industry will begin to recognize the EHR as what he calls a transaction system.

"At this point, electronic health records should start feeling like transaction systems, not necessarily at the center of the universe where we often put them," he says. "If you really want to focus on population health, you have to have a healthy electronic health system environment supporting that effort. So let's focus on all the other systems and solutions we're going to need to be building for the future."

Nearly one-third of respondents (32%) report they are using unstructured data from their EHR in their analytics activity, a reading that Schooler considers to be high considering the complexity of the task. "We all use this information," he says, "but using it in analytics means you're combining it with other patient information and other types of information to glean some intelligence, maybe make predictions, maybe get an understanding of what happened, or maybe get a sense of what should be done to address populations. I'm surprised there's that many people saying they are actually doing it, because I know how difficult it is to do."

> "We know that population health is the direction we're moving in, but there's so many of us that really are not prepared, and we're hoping we will have these answers in three years."
>
> —Linda Butler, MD

The survey logs the presence of the activity, but not the scale or degree of activity. But given the challenges, 32% is an indication of a high level of interest in gleaning additional insight from physician notes. Another 22% expect to begin using unstructured EHR data for analytics purposes within three years, boosting the total to 54% of respondents. Schooler

Analysis (continued)

suggests that much of the work in the near term might be to use natural language processing to add precision to ICD coding, which is more a data-integrity process than an analytics activity. And the support from applying natural language processing to unstructured EHR data is a way of allowing the EHR tool to fit the work method providers prefer.

"Providers in general, particularly physicians, do not like to enter data into a template," Schooler explains. "They typically steer away from having to go through a screen and enter specific values, specific data, and even specific words. They like to write progress notes. They like to write their H&Ps [histories and physical exam notes]. They like to do all that in an unstructured, open text form. Well, there's a lot of good stuff in there. Computer-assisted coding technologies run through this text and pull out stuff that's helping coders survive the conversion to ICD-10."

There is some doubt about whether the computer will eventually do the data extraction or will continue to assist in the extraction. Says Butler, "At Rex, unstructured data from the chart is put through algorithms and presented to a clinical documentation specialist, so there are human eyes looking at it to say, 'Okay, is this something that we should act on or not?' I don't know that we're going to get to where we can just use this type of software to run accurate reports so that we'll never need to manually abstract a chart again."

Hickman expects that the distinction between financial data and clinical data will disappear over time. "The data is going to converge. We'll be doing all kinds of things across those families of data," he says. The integration of financial and clinical data, cited as a top data-related challenge by 63%, will be driven by the questions providers are asking, which are the questions that IT systems are working to answer by applying analytics across a disparate set of data.

"To be efficient as a healthcare provider organization, you really need to try to migrate yourself to where you have a single source of truth."

—Rick Schooler

Schooler sees that asking many questions produces many ways of getting answers. "When it comes to population health," he says, "you think about how to manage the health status of a patient in real time. How do I ensure that people are actually doing what they should be doing? How do I alert and prompt? How do I invoke patient engagement? How do I do all this stuff? You end up with these different technology solutions."

The challenge, Schooler says, is that organizations operate various clinical IT technologies or applications, and they also operate various financial applications. "All these technologies have been built, and they all have their own source of truth. To be efficient as a healthcare provider organization, you really need to try to migrate yourself to where you have a single source of truth. So that's a good problem to have from the standpoint that you've actually got tools now that can give you information from all the data, but

Analysis (continued)

the problem is there are so many of them."

Can you get there from here?

Because the foundation for analysis is data, many IT-related challenges and investments have to do with data. Over the next year, 75% expect to begin or increase investments in improving the quality of data. And 58% expect to invest in integrating data from external sources. Nearly half (48%) expect to add or train analytics staff. And 39% expect to train clinicians in analytics. Butler notes how important it is for clinicians to become more involved in documentation, especially as analytics applications for EHR data expand.

"Based on what the physician or the advanced clinical practitioner documents in the chart, the coders assign certain codes, and based on those codes you end up getting the bill or the DRG," she says. "But it is not as if somebody goes through the record with a fine-tooth comb and really gleans all that information out. It's based on whatever the provider wrote in the H&P, the progress notes, and the discharge summary. You may have people that are over-documenting certain things, and then you have other people who are under-documenting. When that happens, you're not really going to risk-adjust your patients accurately. The only way you change that is to really educate your physicians on how what they're documenting is being used."

Hickman identifies the problem of sorting out vocabularies as a foundational issue, one that is compounded in an environment of increased merger, acquisition, and partnership activity. He says, "I speculate that some believe that because we are starting to move to standardized or common vocabularies, we will have less unstructured data and be in a more structured data world. Certainly our documentation tools allow us to create more structure as we capture information from clinicians. But we could also say that even with vocabularies, there may be multiple choices of those words that can be used to describe something clinical in a vocabulary.

> "If you think about where population health is best managed and controlled, it's in the physician office. Once patients have gotten to the hospital, it's too late."
>
> —Linda Butler, MD

"There are tools to help you bring vocabularies together, but that creates additional things that you have to do, at an additional expense," Hickman continues. "And the more organizations you seek to combine with that have their own vocabularies, the bigger the problem gets. The environmental factor of merger and acquisition activity is going to make it a real challenge to work data across many providers."

Data integration is not easy for anyone, but it may be especially difficult for smaller organizations without the sheer might to push system

Analysis (continued)

consolidation forward. Hickman has seen that, "If you're in a larger IDN with the financial resources to do it, consolidation of solutions or systems is a strategy to keep you moving toward standard ways of using data so that you can operate on data across systems. If you're an organization without those financial resources, you may be trying to just stitch it together as best you can. That means a whole lot of manual reporting or pulling things together in Excel workbooks so you can understand what's going on if you're sitting on six, seven, or eight electronic health records." Those who, as Hickman says, "stitch their solutions together" will increasingly be at a disadvantage. On the other hand, Hickman says, "If you can harness all of that data across those many systems, you've got an edge."

Schooler sees clinical integration as a step toward data integration, with both driven by the need to provide value-based care. "You cannot take on the fundamental aspects of being accountable for a population of patients without clinically integrating the network of providers," he says. "Obviously there is a clinical aspect to that and there is a business aspect to that. We will contract for quality or whatever, so we've got to align ourselves. But once we've done that, it will never work without information integration."

Overcoming insufficient skills in analytics is cited as a top tactical analytics challenge by 52%, and is the tactical challenge mentioned most frequently. "We're going to have a dearth of talent in this space in healthcare," Hickman says. "We'll be clamoring to find people that have the competency, education, and aptitude to do this sort of work. Anticipating that now and beginning to address it is very important."

> "The only way to manage financing of healthcare is to also manage care across the continuum for every episode of care that occurs for a particular person."
>
> —George T. Hickman

Hickman sees the need for analytics skills among the clinical team, too. "We've got a lot of data. You can have the data scientists that know how to manipulate the tools to cause the data to merge, but you better have healthcare content experts, too, people that understand the nature of healthcare operation, that understand what's going on clinically."

Although picking the right platform for data and analytics is among the top tactical challenges for only 31%, and 25% say that picking the right software for analytics is among their top challenges, providers need to work with data in new ways, and the need to collaborate presents data integration challenges. So platform and software decisions must be made carefully because they affect the ability of the IT team to be facile enough to support decision-making in the future.

Analysis (continued)

Says Schooler, "If you don't get on the right path with the right solution provider and you don't have the right kind of strategy, you're going to spin your wheels, waste a lot of money, and lose." But, indeed, to respond to the particular analytics need of a specific organization, a strong analytics team needs to perform functions that packaged software may not.

According to Butler, "Epic has tons of reports, and they're great, but sometimes those reports don't answer our specific questions. I think that will be the case with population health, too: You have canned reports, but you might find that you want to ask a specific question about something in your patient population, and it will not be so easy to get at that data."

A sober look at the direction of the industry and the organization's strategy for participation should inform decisions about skills and systems. Schooler lays out the situation: "You've got this quandary. As an industry, we're moving rapidly into a new reimbursement model and a new sort of healthcare dynamic. And we've got a lot of different solutions that do a lot of different things. But are those solutions really giving us, in the end, what we need to effectively thrive in the future?" He reminds us that analytics as a discipline in healthcare isn't really new. "What's new is that it's no longer behind-the-curtain work done by departmental specialists or clinical specialists. It's now moved into the front and leaders are saying, 'Wait a minute, we better get our arms around this thing called analytics, because it appears that it's going to be critical for our survival going forward.' "

Maintain the present, work toward the future.

The objective of IT and analytics is not to merely track, monitor, or report, but in addition to uncover causal relationships and use data to help decision-makers anticipate what might occur in the future. Given that the industry is shifting to a payment model that requires a more robust set of data—data that needs to be worked over with a set of tools that are new to many—one wonders, first, can everyone actually do this? Second, do organizations have the discipline to move in these new directions?

> "If you don't get on the right path with the right solution provider and you don't have the right kind of strategy, you're going to spin your wheels, waste a lot of money, and lose."
>
> —Rick Schooler

A principal consideration is whether the organization has the scale, resources, and skills required to meet new analytics requirements. Asks Hickman, "You're going to have to figure out how to do this to survive. Can you afford to do it? If not, what sorts of strategies or tactics must the healthcare organization consider? Some might merge with someone else who can do it. Others might come up with a partnering arrangement with others or with many others.

Analysis (continued)

"Maybe we need to be talking about creating major collaboratives or coalitions that serve a region or an employer-based group tied together by a common mission," Hickman continues. "If you're a very large academic health system or a very large IDN, or one of the big systems, you might have the capital to pull this off." But it is important to examine the kind of insight that will support decision-makers in the future, to take a clear-eyed reading of where present skills and infrastructure need to be augmented to move in that direction, and to put in place the strategies and tactics necessary to move in the right direction.

"As this thing matures and evolves," Hickman cautions, "I think many will not have the capability to pull it off because of the investment it's going to require. Thinking now about how to address that is important."

How can a provider take care of today's pressing information needs while at the same time integrating both IT systems and health systems in ways that support future needs? It takes discipline, Schooler says. "Analytics covers every spectrum of our business, and there are so many different applications, uses, and needs for analytics capabilities."

Although the long-standing separation in the healthcare industry between financial and clinical IT activities is melting away, healthcare leaders must address the very real requirement to continue to deploy point solutions to meet day-to-day needs while at the same time striving for an ultimate goal of data and application integration.

"To be efficient about it," Schooler notes, "leading organizations are moving toward a common source of truth. But you can't snap your fingers and make this happen overnight, so at the same time we must maintain all these disparate silos." One must make sure that pressing needs of the present do not prevent the organization from establishing a foundation for the future.

"The tyranny of the urgent is what stops you from doing the things you ought to do to survive for the long term," Schooler cautions. "You've got to be disciplined to say, 'We know what we've got to do today, but in parallel to that, there are things that we have to do to position us for the long term.' You can think of hundreds of things that, day to day, drive us in multiple directions and pull us off a course. You have to have the discipline that it takes to make good decisions. You have to have an executive culture that really understands what this means and that this requires a certain level of governance to ensure that you're focusing your priorities in the right direction at the right time."

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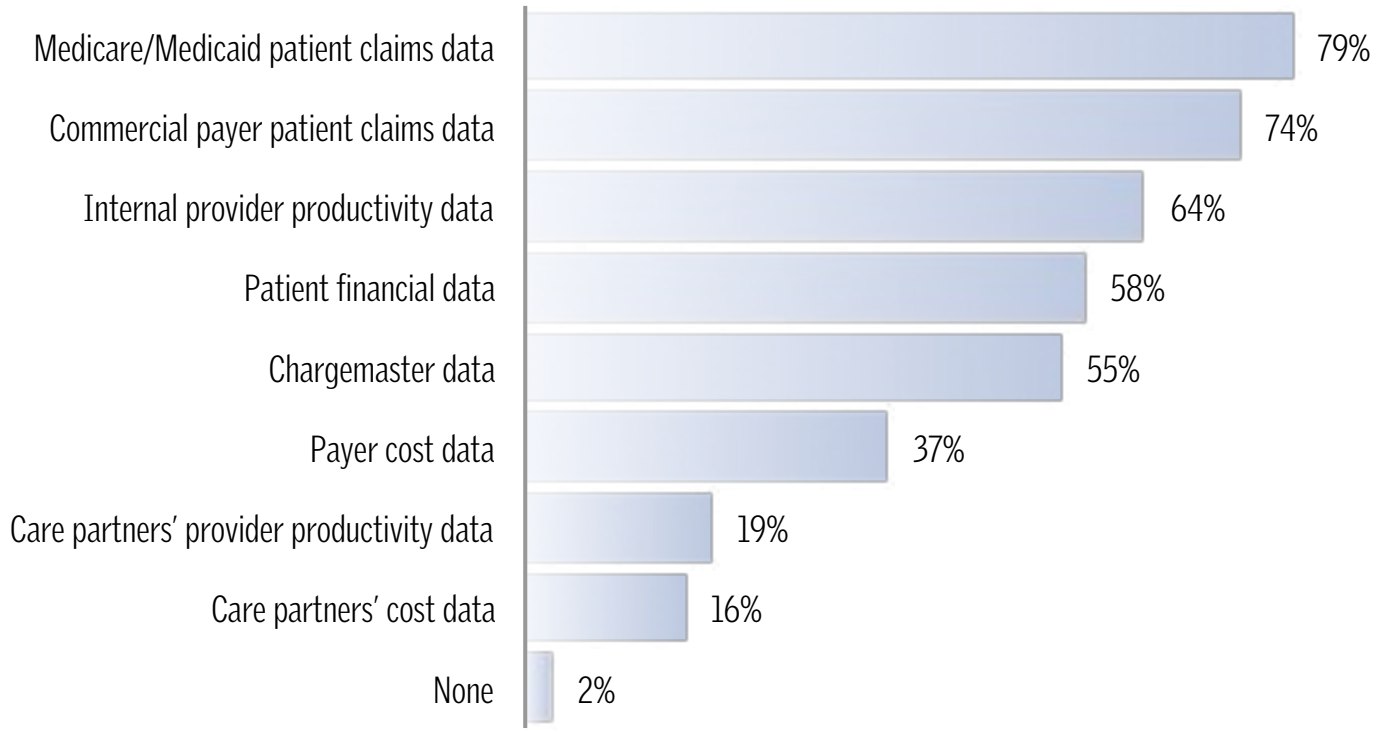
FIGURE 1 | Types of Finance Data Drawn On for Analytics Activity Now

Q | Which of the following types of finance-related data does your organization now draw on for your analytics activity?

Total responses

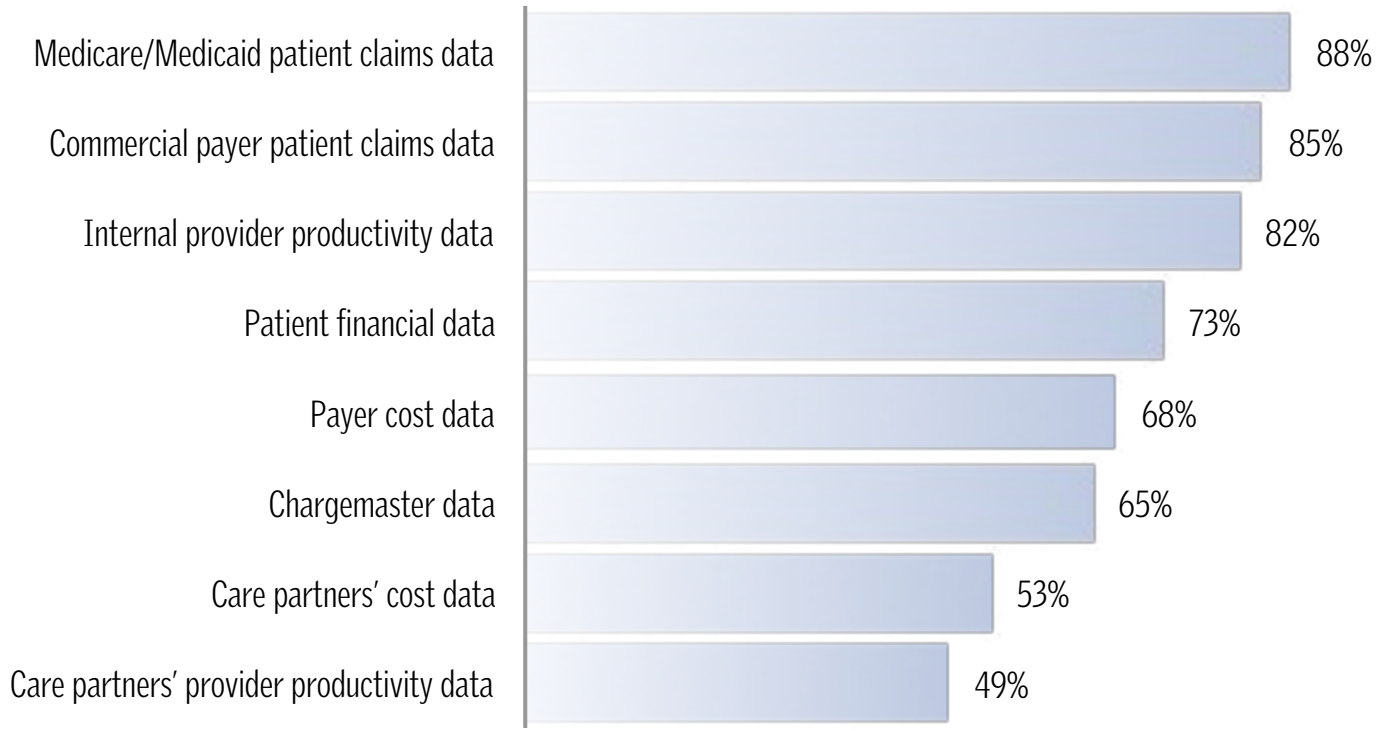


Base = 367, Multi-Response

FIGURE 2 | Types of Finance Data to Draw On for Analytics Activity Within Three Years

Q | Which of the following types of finance-related data do you expect to begin to draw on for your analytics activity within three years? Includes now and within three years (net)

Total responses

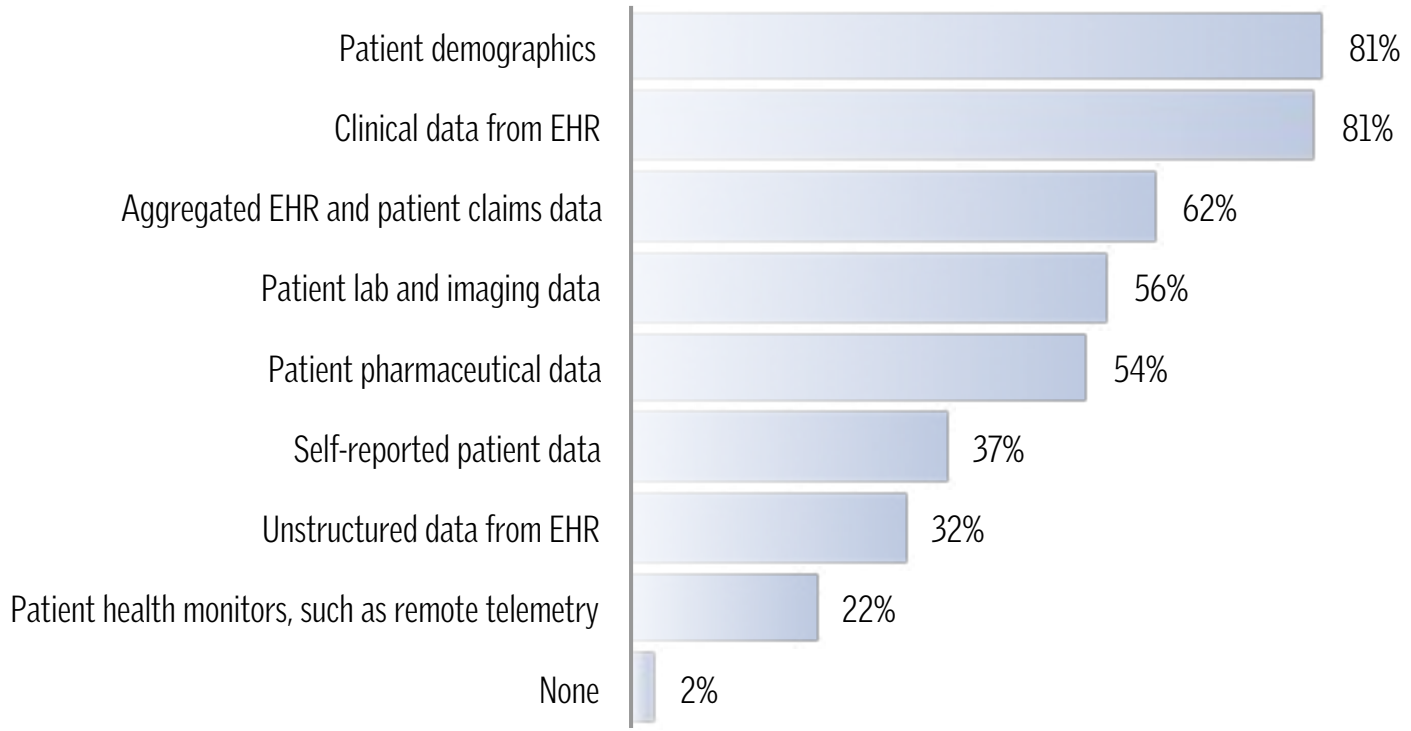


Base = 367, Multi-Response

FIGURE 3 | Types of Patient Data Drawn On for Analytics Now

Q | Which of the following types of patient-related data does your organization now draw on for your analytics activity?

Total responses

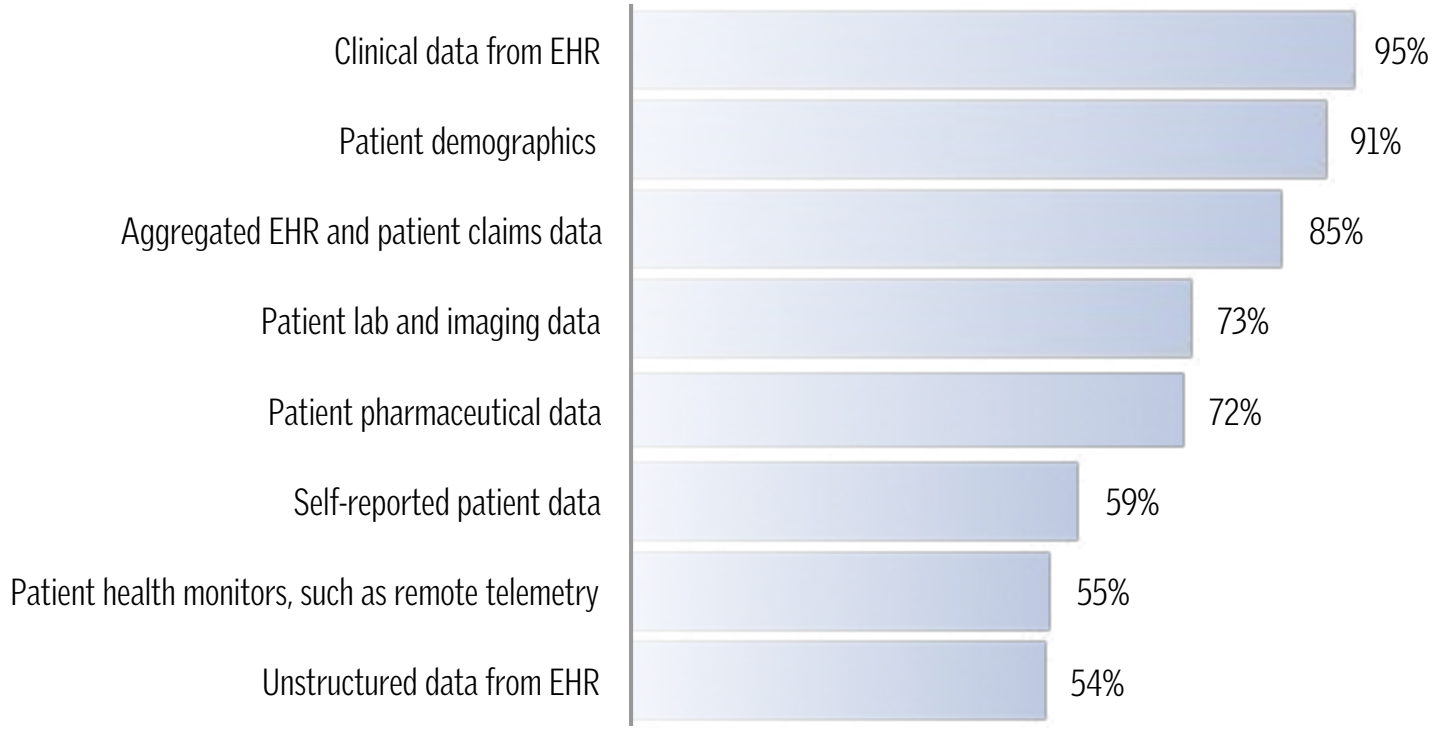


Base = 367, Multi-Response

FIGURE 4 | Types of Patient Data to Draw On for Analytics Within Three Years

Q | Which of the following types of patient-related data do you expect to begin to draw on for your analytics activity within three years? Includes now and within three years (net)

Total responses

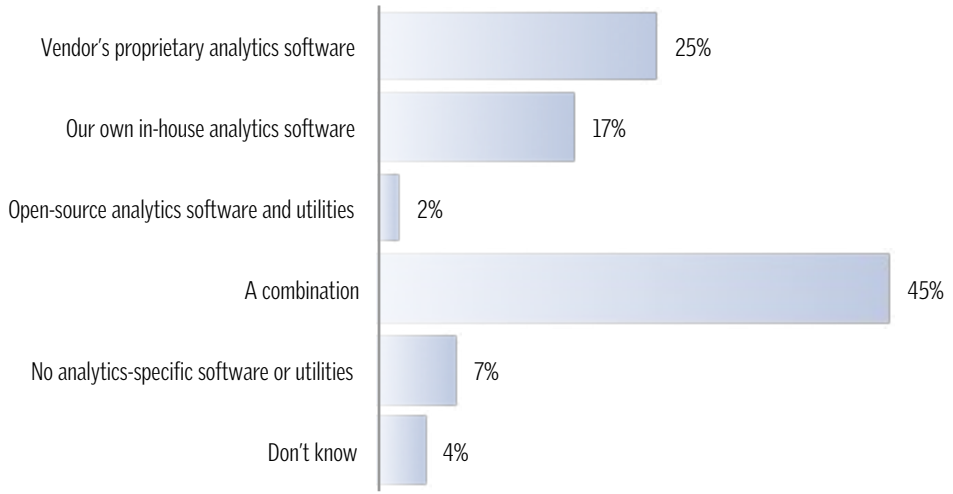


Base = 367, Multi-Response

FIGURE 5 | Current Applications for Working With Large/Complex Data Sets

Q | Which of the following best describes your current applications for working with large and/or complex data sets to reveal trends or specific insights? Among those who use large/complex data sets

Total responses



Base = 352

TAKEAWAYS

- One-quarter of respondents (25%) do work with large and/or complex data sets with licensed software alone, including 32% of health systems.
- But 45% use a combination of tools, which might include software from a vendor, software the organization has written itself, and open-source software.
- A lower percentage (38%) of those with a relatively low portion of their patient population at risk are using a combination of software tools, compared to 58% of those with more than 20% of their patient population at risk. And a higher percentage of those exposed to downside risk with less than 20% of their patient population (37%) use a vendor's proprietary software only, compared to 15% of those exposed to downside risk with 20% or more of their patient population.

WHAT DOES IT MEAN?

A larger percentage of organizations with higher levels of exposure to downside risk use a combination of software tools to work with large and/or complex data sets. Among the factors that contribute to the decision to use a vendor's proprietary software are the skill set of the analytics team and the time available for deployment.

FIGURE 5 *(continued)* | Current Applications for Working With Large/Complex Data Sets

Q | Which of the following best describes your current applications for working with large and/or complex data sets to reveal trends or specific insights? Among those who use large/complex data sets

Who controls the money? Click on the icons to learn how they think

Click on these icons to dig deeper.

DATA SEGMENTATION TOOL

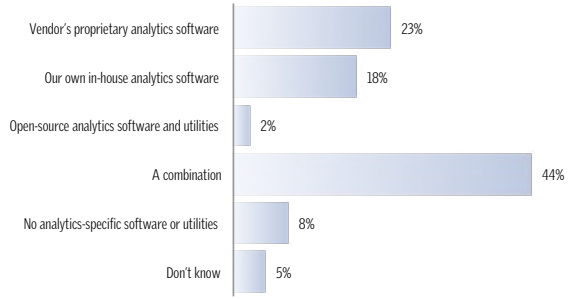
VIEW BY PRODUCTS/SERVICES
Indicates the type of goods or services the respondent is involved in purchasing

VIEW BY INVOLVEMENT
Indicates the role of the respondent in making purchasing decisions

VIEW BY DOLLARS INFLUENCED
Indicates the total dollar amount the respondent influences

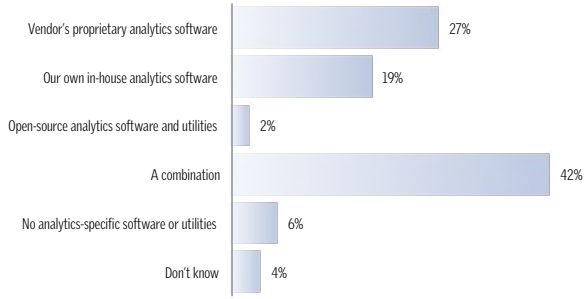
PRODUCTS/SERVICES

Clinical products



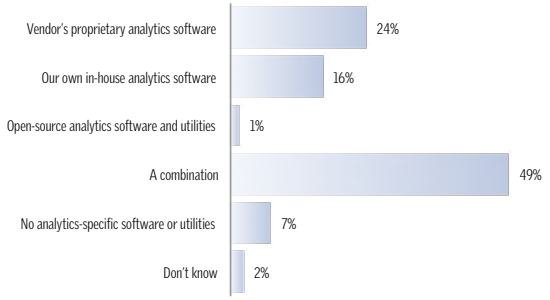
Base = 216

Financial services



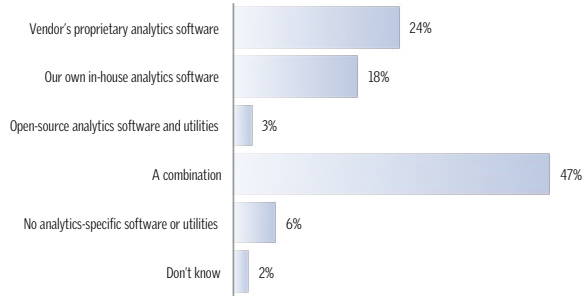
Base = 135

Executive search



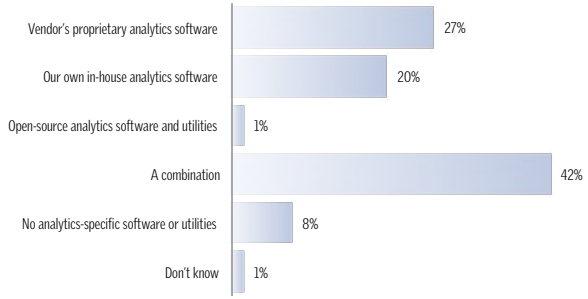
Base = 142

Consulting services



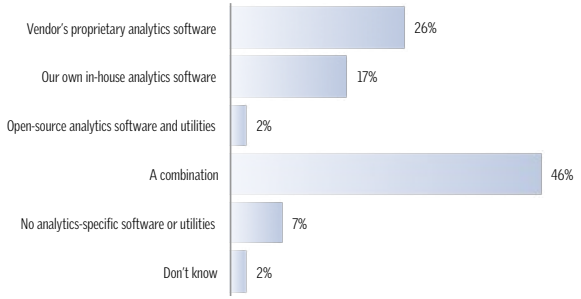
Base = 197

Outsourcing services



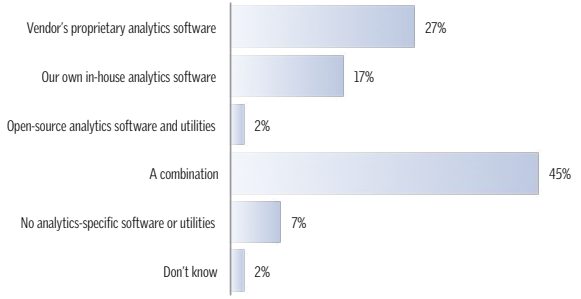
Base = 142

Legal services



Base = 94

Information technology

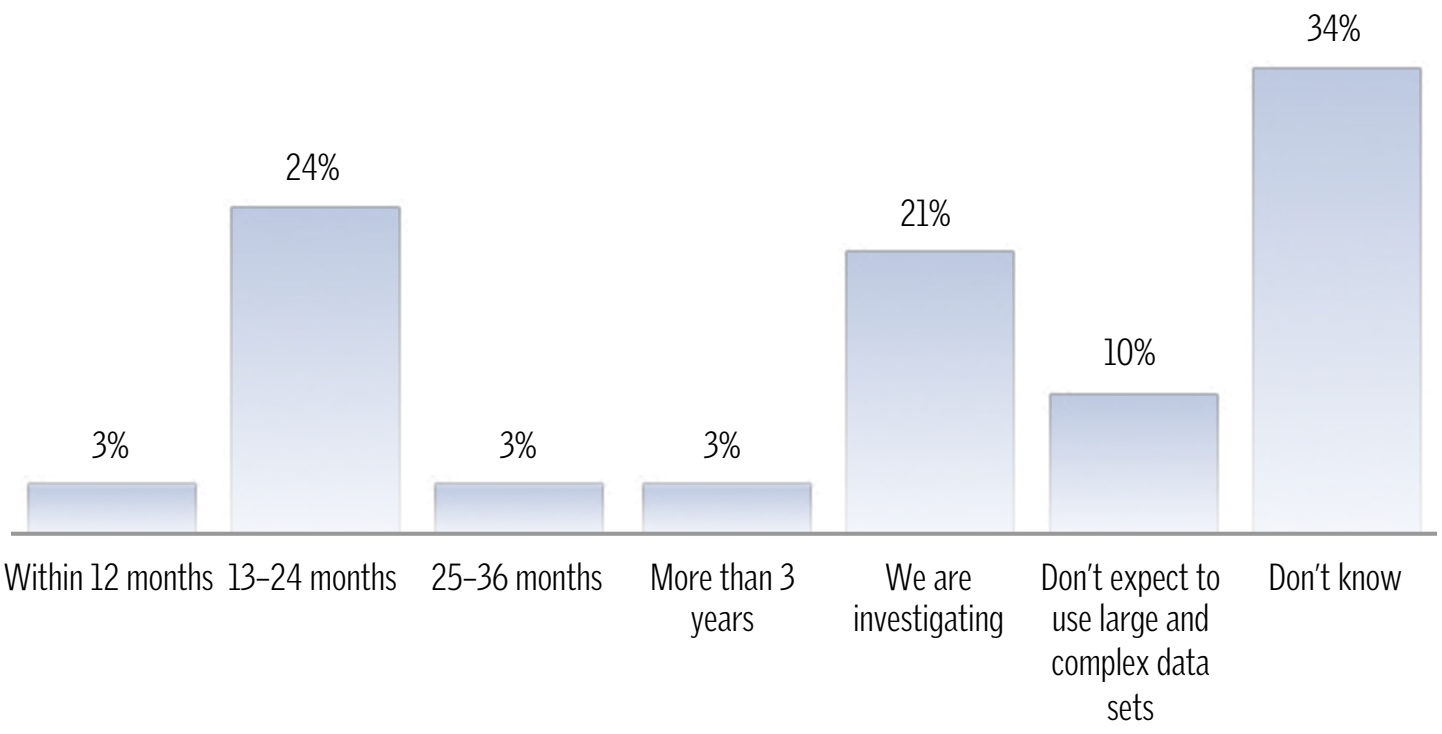


Base = 218

FIGURE 6 | Time Frame for Beginning to Draw On Large/Complex Data Sets to Reveal Trends

Q | What is your organization's time frame for beginning to draw on large and/or complex data sets to reveal trends or specific insights? Among those who do not draw on large/complex data sets, or don't know

Total responses

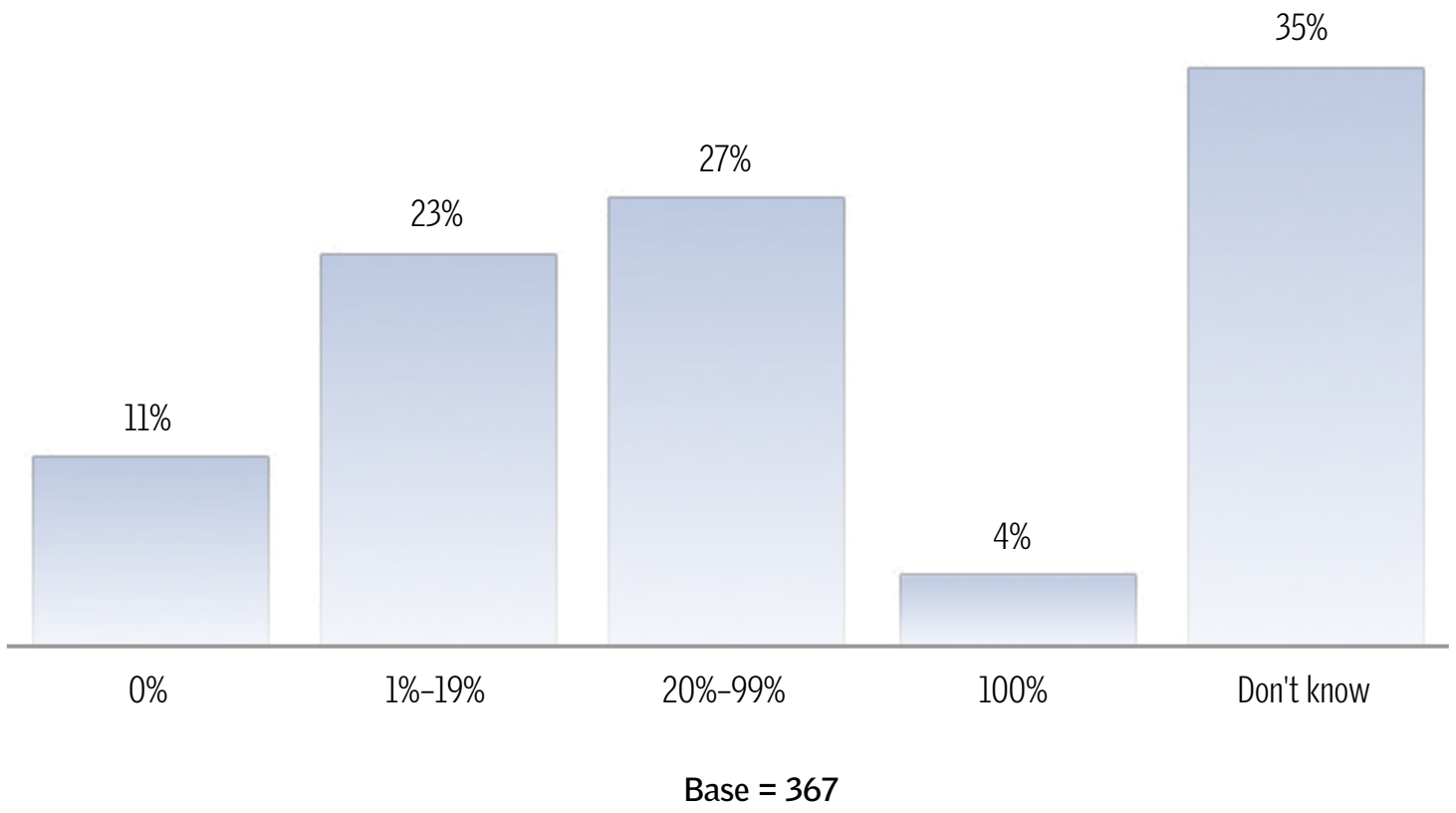


Base = 29

FIGURE 7 | Percentage of Organization's Patient Population Exposed to Downside Risk

Q | For what portion of your patient population is your organization now exposed to downside risk?

Total responses

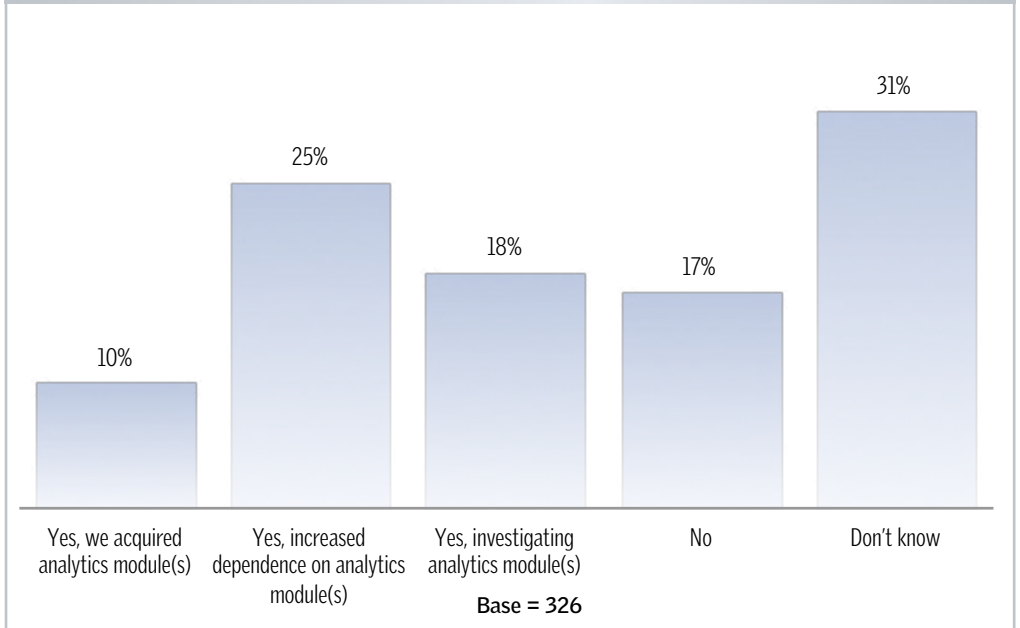


Base = 367

FIGURE 8 | Presence of Downside Risk Contracts Prompting Need for Analytics Software

Q | Has the presence of contracts with downside risk prompted the need for or increased your dependence on an analytics software module or modules? Among those who have exposure to downside risk

Total responses



TAKEAWAYS

- For 25% of respondents, the presence of downside risk increased their organization's dependence on their analytics software module. This includes 33% of health systems and 36% of physician organizations.
- Another 10% acquired an analytics software module as a result of taking on downside risk, including 18% with net patient revenue of $1 billion or more.
- Nearly one-fifth (19%) of those who have 20% or more of their patient base exposed to downside risk acquired an analytics software module as a result of having a downside-risk contract, compared to only 6% of those with less than 20% exposed to downside risk.
- One-quarter (26%) of those who have less than 20% of their patients exposed to downside risk say that the presence of a downside-risk contract did not increase their dependence on an analytics software module.

WHAT DOES IT MEAN?

The higher commitments involved with downside risk means increased attention to analytics to support decisions, monitor results, and guide performance. An advisor notes that, with exposure to downside risk, the processes used today for performance reporting—largely retrospective—will be insufficient because healthcare leaders will need to take action based on near-real-time monitoring.

FIGURE 9 | Use of Clinical Analytics Now

Q | What does your organization use clinical analytics for now?

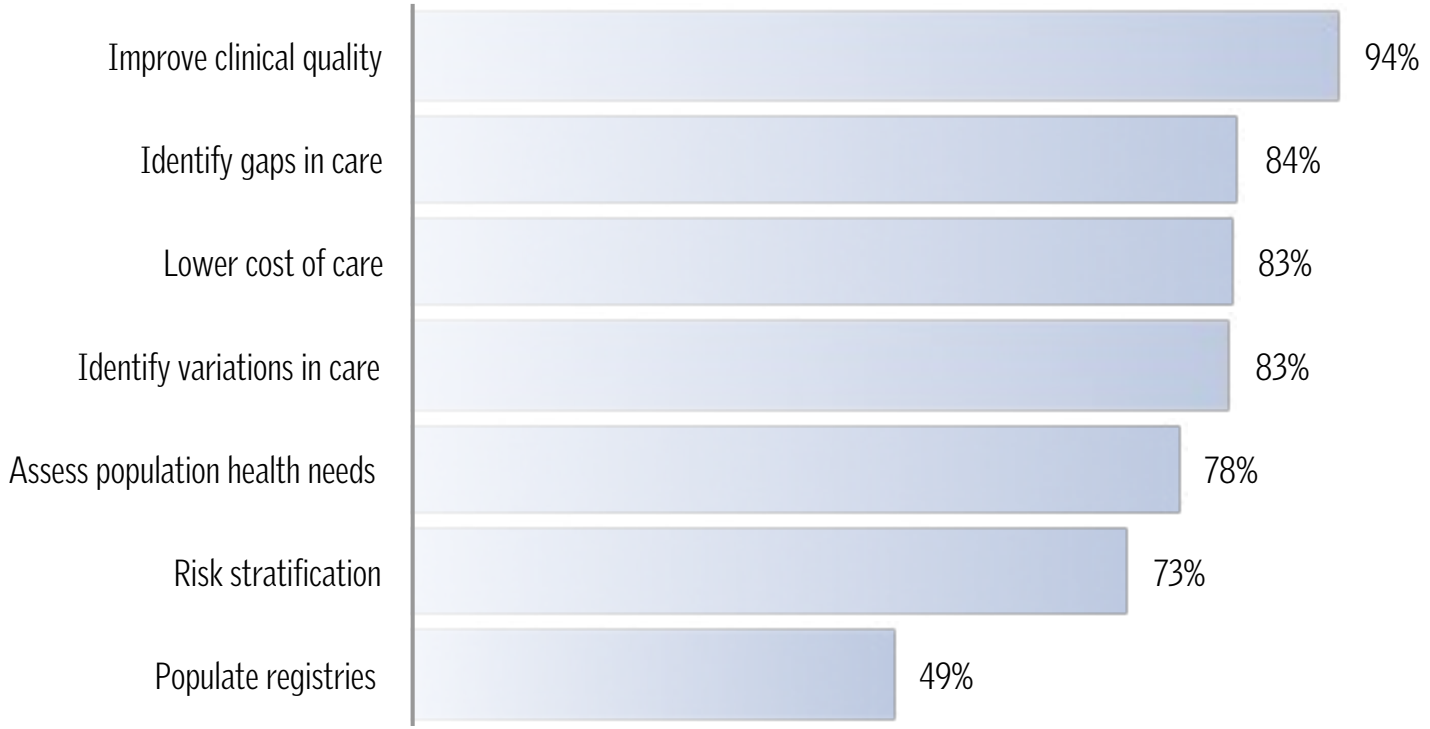
Total responses

Base = 367, Multi-Response

FIGURE 10 | Use of Clinical Analytics Within Three Years

Q | What does your organization expect to begin using clinical analytics for within three years? Includes now and within three years (net)

Total responses

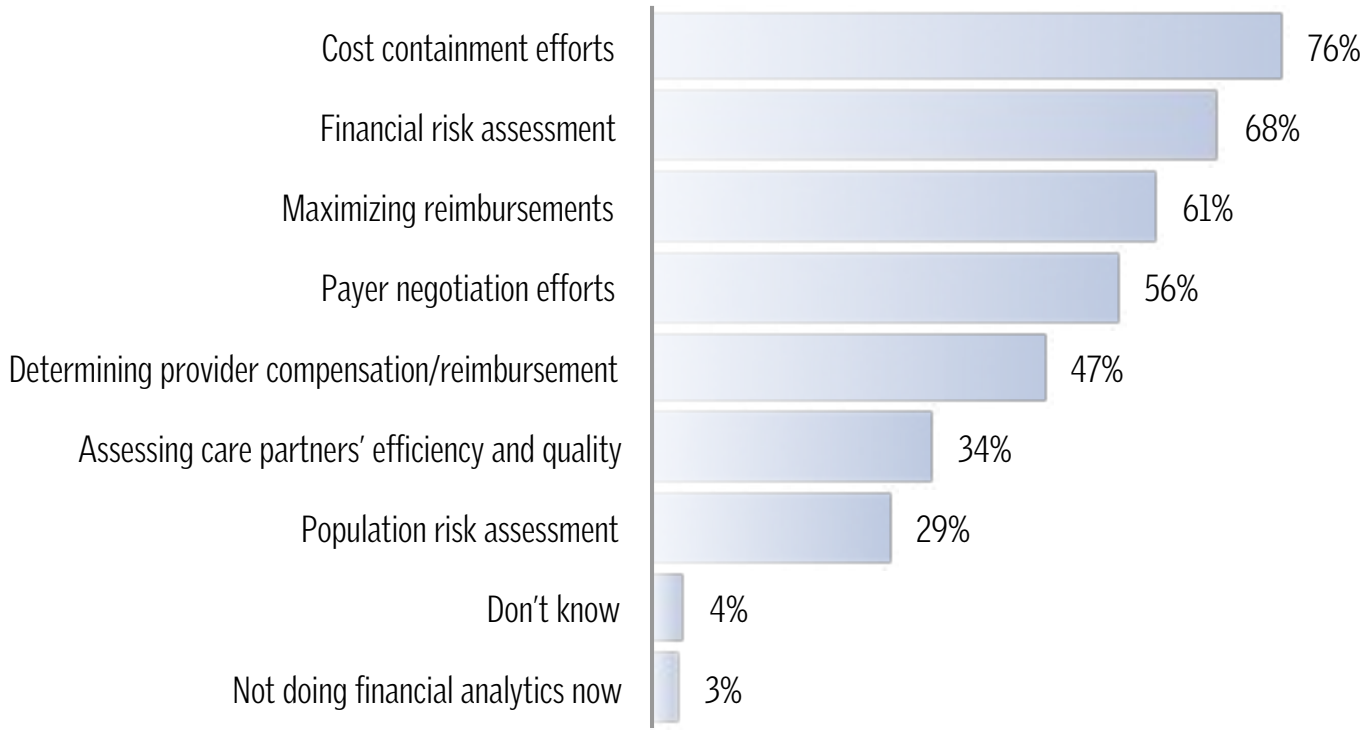


Base = 367, Multi-Response

FIGURE 11 | Use of Financial Analytics Now

Q | What does your organization use financial analytics for now?

Total responses

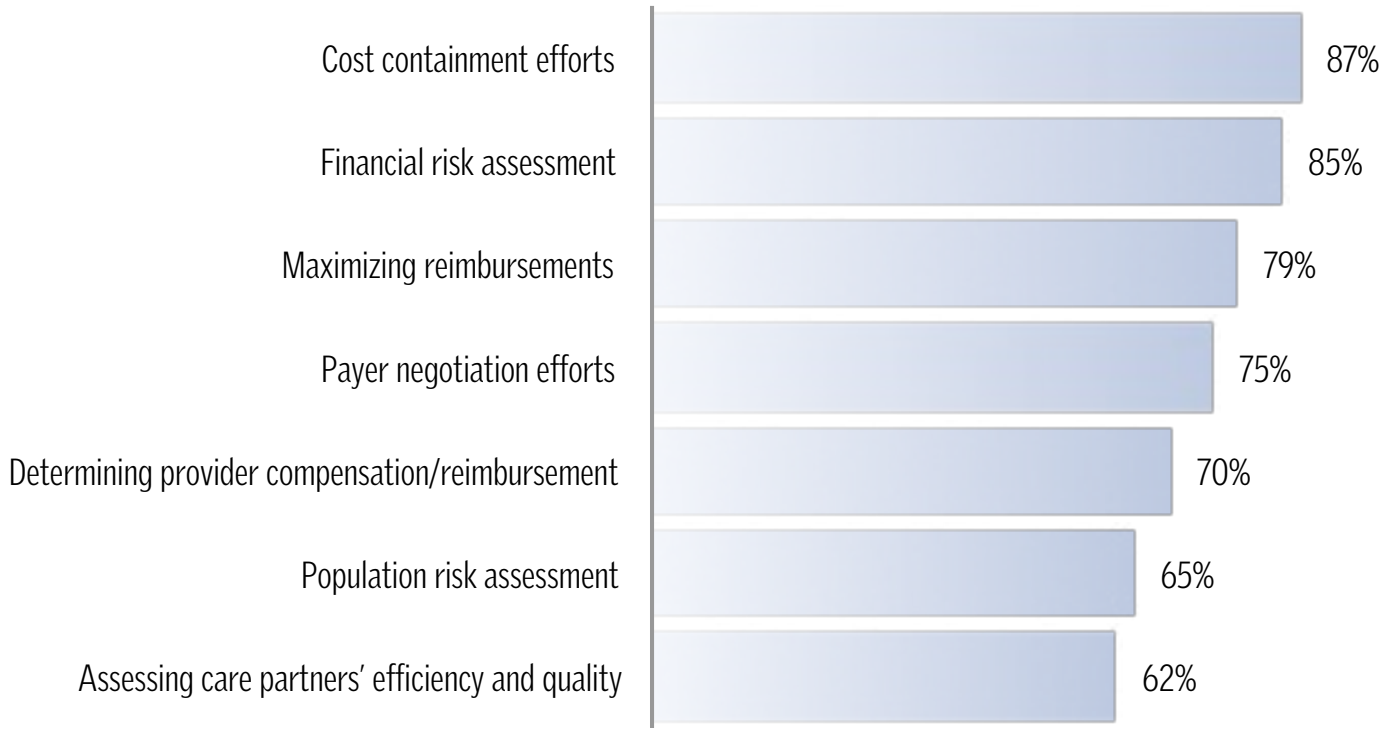


Base = 367, Multi-Response

FIGURE 12 | Use of Financial Analytics Within Three Years

Q | What do you expect to begin using financial analytics for within three years? Includes now and within three years (net)

Total responses

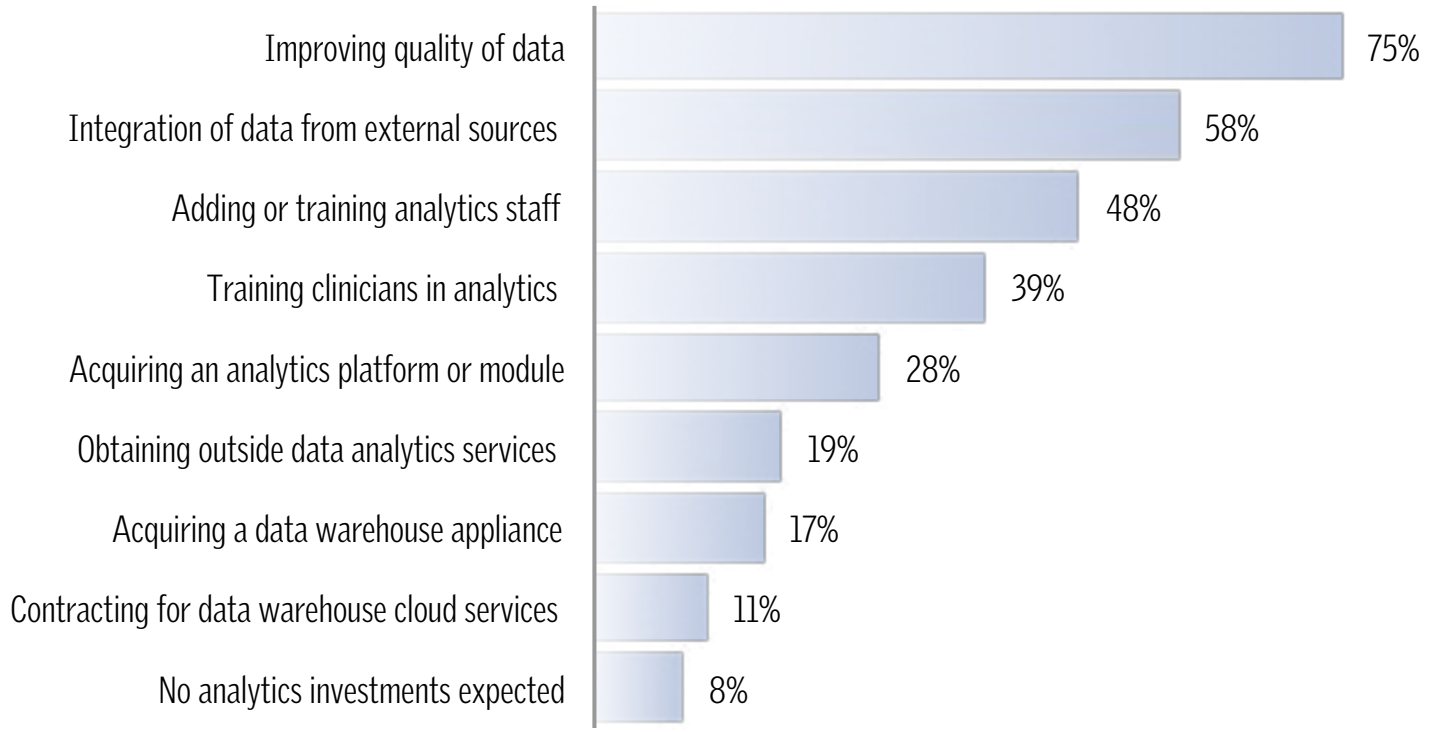


Base = 367, Multi-Response

FIGURE 13 | Investment in Analytics Areas Over Next Year

Q | In which of the following does your organization expect to begin or increase investments over the next year to support or enable analytics?

Total responses

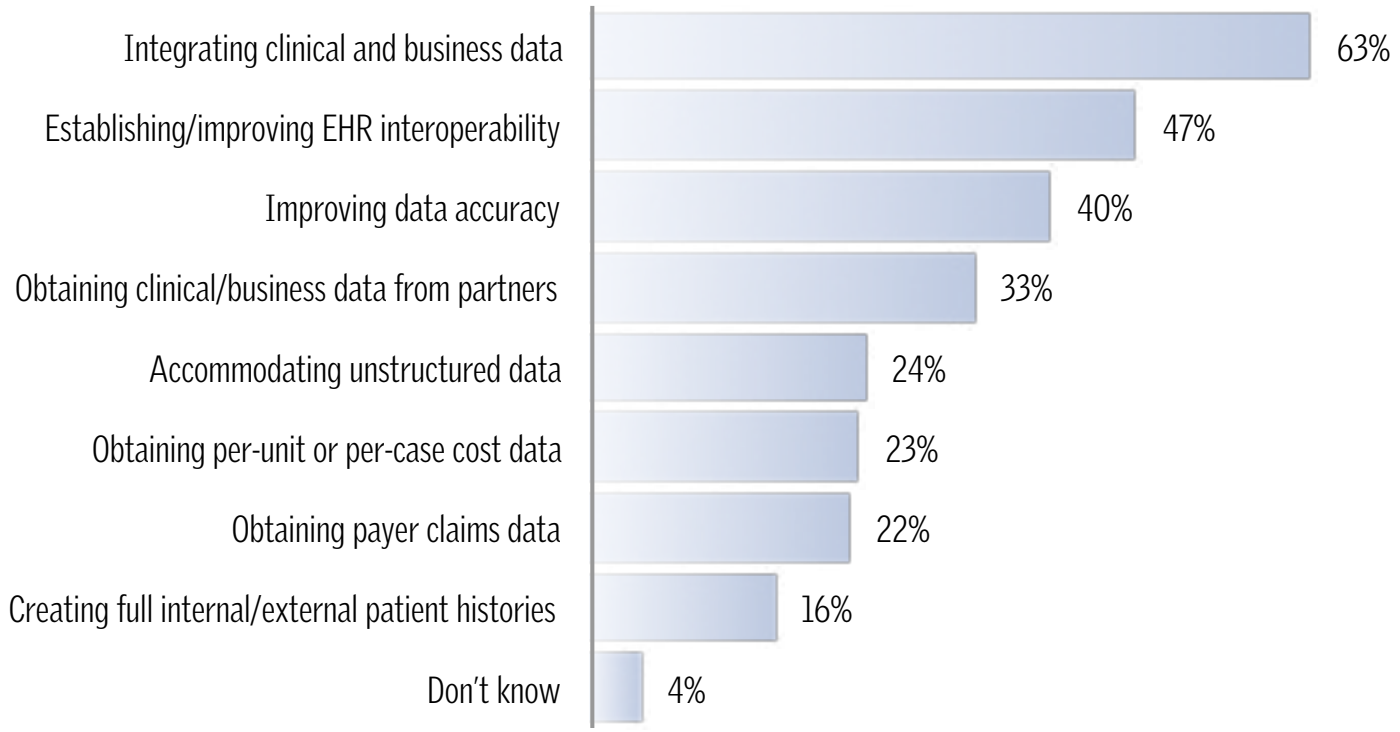


Base = 367, Multi-Response

FIGURE 14 | Top Data Analytics Challenges Over Next Three Years

Q | Please select the top three data-related challenges your organization expects to face in performing analytics over the next three years.

Total responses



Base = 367, Multi-Response

FIGURE 15 | Top Tactical Analytics Challenges Over Next Three Years

Q | Please select the top three tactical challenges your organization faces in performing analytics over the next three years.

Total responses

Base = 367, Multi-Response

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