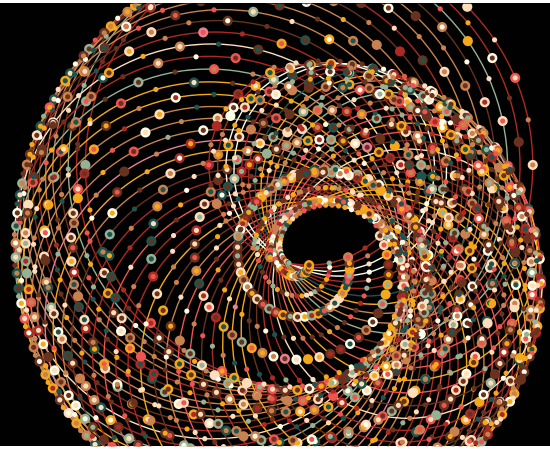


## Becoming an insight-driven organization: Analytics delivers concrete business value to health plans

Findings from the Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey



### Executive summary

Many health plans are facing uncertainties: the changing health insurance landscape, the speed at which value-based care is approaching, and growing demands from customers, to name a few. At least one investment may help executives meet each of these challenges—an investment in analytics. Health plans are data rich, yet those data are not always leveraged to understand what happened and why, or predict what is likely to happen. Health plans that do not take advantage of their data may risk being disrupted and left behind.

The Deloitte Center for Health Solutions conducted an online survey of 45 analytics professionals at health plans (with 250,000 or more members) to better understand the priorities and challenges of implementing analytics within a health insurance organization. Nearly 40 percent of respondents represented Blue Cross Blue Shield affiliates, and of those that had an enterprise analytics leader (n=35), over 80 percent reported to a vice president or higher.

The survey helps to provide a window into top-of-mind issues facing health plan analytics departments. The Center also conducted 15 interviews with executives at health plans and technology companies to better understand leading practices and lessons learned from insight-driven organizations.

Key findings from our survey and interviews include:

- **Analytics is a critical asset for long-term strategy:** Two-out-of-three survey respondents agreed that analytics is extremely important to their organization as a competitive differentiator.

As many early adopters of analytics begin to see tangible results (e.g., increased efficiencies, improved affordability/reduced medical costs, or enhanced customer engagement/experience), later adopters will likely need to catch up or be left behind. Projected spending on analytics mirrors this view—33 percent of respondents expect spending on analytics will increase substantially over the next three years. Despite many being in a resource limited environment, interviewees stated that their leadership understands the value that analytics brings to the table, and supports investments.

- **Analytics drivers are business drivers:** Financial goals, such as reducing medical and operating costs, are among the leading drivers of analytics investments among survey respondents. Clinical and customer analytics are priority investments in the next year, particularly in the areas of cost and utilization management and customer experience.
- **Many health plans prefer to buy vs. build their own solutions:** Rather than build them, more than half of survey respondents intend to buy, rent, or use a hybrid approach to acquire solutions to their top analytics priorities in the coming year and over the next three years. However, respondents preferred to keep day-to-day analytics activities in-house. Our interviews suggest that keeping analytics in house is more secure, and health plan analytics requires market and organizational-specific business knowledge that is not easy to outsource. Deloitte believes analytics is a critical part of health plans' business models, and retaining in-house expertise will likely be essential to their long-term competitiveness.

- **Data quality, technology, and access to skilled labor are big barriers to analytics investments and implementation efforts:** Data quality is the most commonly cited barrier to analytics investments and implementation, followed by asset-related barriers: tools and technology, access to skilled resources, and funding. Without enterprise-wide agreement on data definitions and requirements, analytics outputs are not trusted and can lead to ineffective insights. Thus, health plans could benefit from investing time and resources to ensure the data they use are valid and meaningful. Additionally, as health plans try to improve their technology, they are met with a plethora of technology options in the market that can be overwhelming when determining the best course forward. Finally, with skilled analytics labor in short supply, health plans will likely not only have to compete with each other, but with other industries as well to capture talent.

#### What is analytics

“Analytics” refers to the systematic use of technologies, methods, and data to derive insights and to enable fact-based decision-making for planning, management, operations, measurement, and learning.

- **Analytics functions are generally centralized within an organization:** While most survey respondents stated that analytics functions related to hardware/infrastructure, data storage, and data preparation are primarily owned by information technology (IT), there was a closer split of IT and business ownership for the building of reports. Despite differences of primary ownership, the majority of respondents stated that their analytics functions were generally centralized into a shared service for the enterprise to capitalize on economies of scale and competency. Regardless of which function is owned by IT or business, a coordinated, business-driven approach to analytics is generally key to ensuring that analytics initiatives are aligned with business goals.

“If our value-based transformation and cybersecurity are the top two priorities for our CEO and the board, analytics is number three.”

—Chief Analytics Officer

## Findings

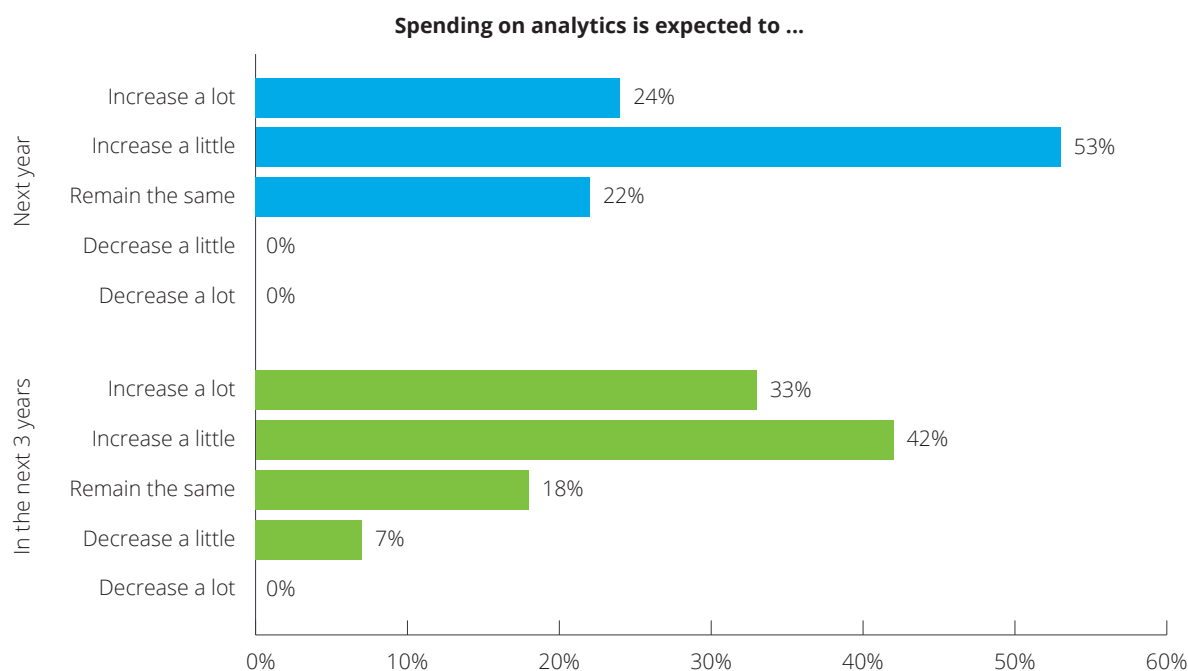
### Analytics is a critical asset for long-term strategy

About two-thirds (67 percent) of survey respondents consider analytics extremely important to their organization’s long-term competitive strategy. Many analytics leaders we spoke with have utilized high-value use cases to demonstrate the proof of value and/or return on investment as they present the business case for analytics to their leadership. All of the health plan representatives we interviewed see a

well-developed analytics capability as a basic business necessity.

Not surprisingly, survey results point to increased spending on analytics in the coming years. As shown in Figure 1, more than 75 percent of respondents expect their analytics spending to increase in the next year, with similar increases in the years that follow.

**Figure 1. Four out of five respondents expect spending on analytics to increase in the near-term future**



Source: Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey

### Business case for analytics can sell itself

- When working with employer clients, some health plans use claims analyses to illustrate the conditions that drive costs for their employees. This can trigger conversations about care management programs that the health plan can offer around these conditions, and how such programs can help reduce costs and improve care and employee health.
- A health plan with a large Medicare Advantage book of business attributes its consistently high performance on STAR ratings to its analytics. Dedicated analysts keep a constant watch on “leading indicators”—pieces of data that drive specific STAR measures. If they see a downward trend, or if the tolerance threshold for that measure is crossed, the analysts raise the issue with the internal operations team (such as medical management) that has the ability to intervene and correct the trend.

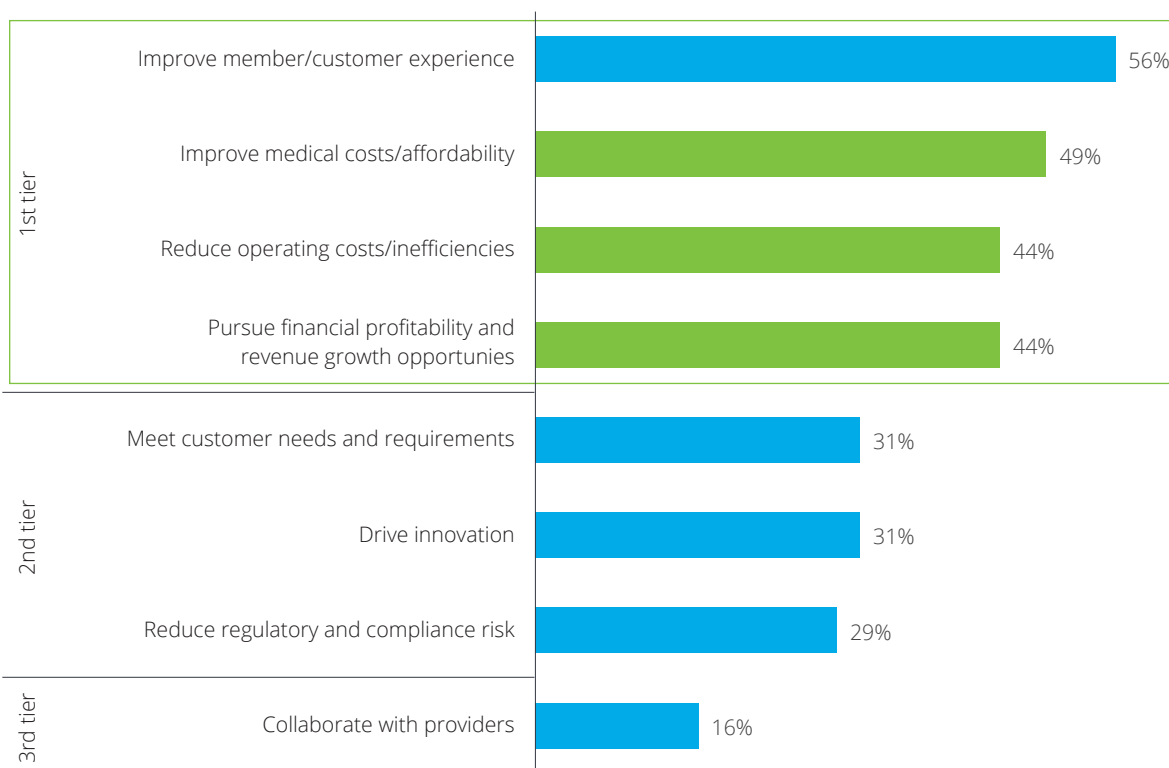
### Analytics drivers are business drivers

All analytics leaders we interviewed tie analytics to strategic business priorities. As a result, they see strong support from their leadership for their analytics enterprise objectives.

Based on our survey results, four major business goals drive analytics investments. The leading driver is improving member/customer experience. The other three of these top-tier goals are financial (Figure 2, green bars).

**Figure 2. Financial goals are important drivers of analytics investments**

Which of the following business goals currently drive your health plan's analytics investments?



Source: Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey

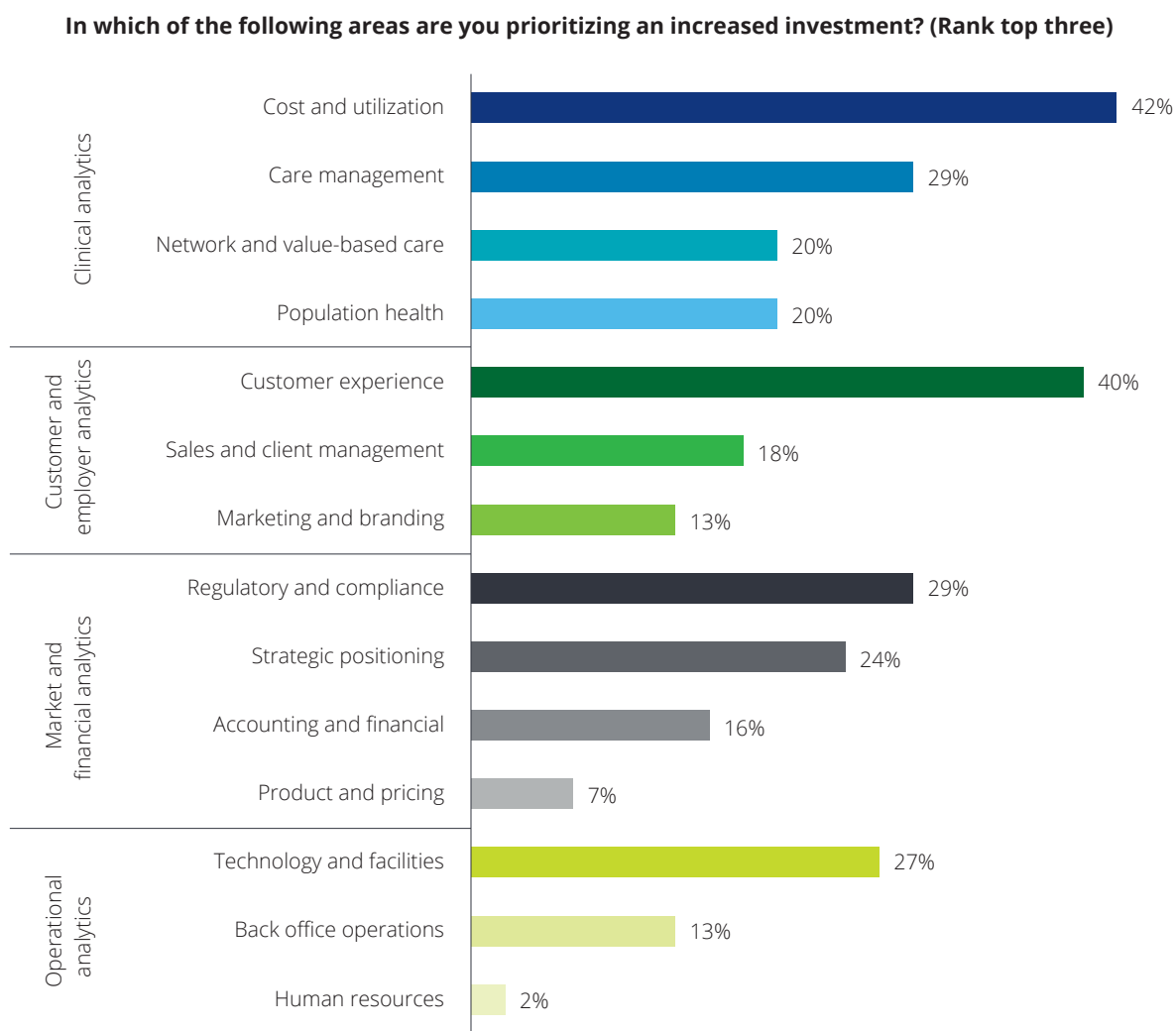
Blue Cross Blue Shield plans tended to prioritize customer experience, whereas non-Blue carriers' top priorities were focused on improving medical costs and affordability.

- Improvement of member/customer experience was the top priority for 71 percent of Blue Cross Blue Shield plan respondents versus 46 percent of non-Blue plan respondents.

- Among non-Blue plan respondents, 64 percent said top priorities include improving medical costs/affordability. By contrast, 24 percent of Blues plan respondents identified this as the top priority.

Immediate analytic investment priorities often balance overall organizational goals and today's business pressures. Cost utilization and customer experience are top investment priorities for the coming year per our respondents (Figure 3).

**Figure 3. Short-term analytics efforts focus on improving costs and customer experience**



Source: Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey

Through our interviews, we heard about some early successes in leveraging analytics for managing cost and utilization trends, and these activities tend to cross departments and disciplines, touching on customer experience, provider networks, utilization management, and fraud and abuse:

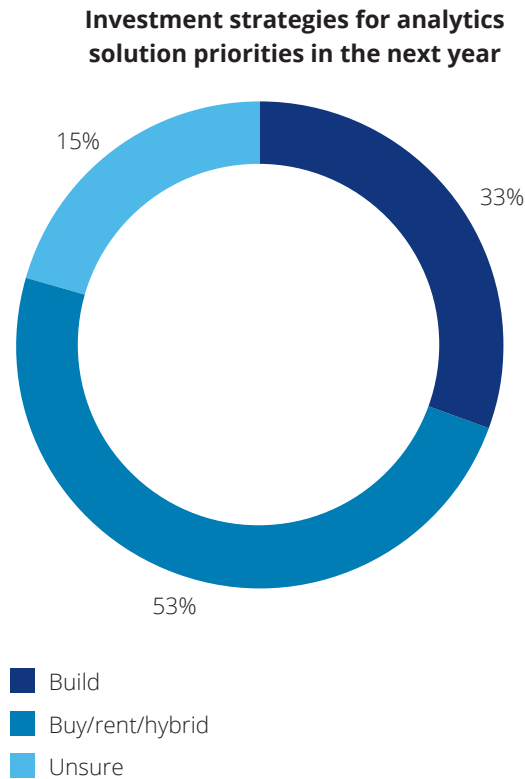
- Focusing on the customer experience can improve cost and utilization and deliver a better experience more efficiently. One plan was able to close between 350,000 and 400,000 gaps in care in one year through personalized member communications. The plan used analytics to build consumer personas, with different personas reflecting consumers' values and how they make decisions directly or indirectly related to health care. Based on these personas, the organization determined the most appropriate approaches for reaching consumers, thereby creating an intervention point to change behavior.
- One organization has worked for several years with the state hospital association, provider groups, and accountable care organizations on data, and on developing programs with a focus on preventable admissions and preventable ER visits. It is beginning to see cost savings from those programs. Without a solid foundation in data and analytics, it would not have been able to locate the patterns in the data and achieve these outcomes.
- Another health plan uses analytics to identify patients with multiple hospital admissions. This health plan mines call-center data from hospitals and emergency departments to identify member eligibility inquiries and compares the data from these calls against its historical claims data. When a readmission is found, the case is immediately referred to a focused care management program. Nurse care managers then work with these patients and their providers to help avoid a future readmission. The plan estimates this initiative produces \$2 million in annual savings from cost avoidance.
- Through the application of analytics, health plans can identify uncommon trends, such as unusually large volumes of certain diagnoses or procedures. For instance, when a health plan is able to combine claims

and government data, it can help identify instances of improper coding. A practice with a physician and an advanced practice registered nurse might bill a disproportionate number of hours under the physician. The plan can intervene before claims are paid and share the data with providers to help them improve documentation.

### Many health plans prefer to buy vs. build their own solutions

For top analytics investment priorities (e.g., cost utilization analytics and customer experience analytics), more than half of respondents said they intend to buy, rent, or use a hybrid approach, and approximately one third expect to build those solutions in-house (Figure 4).

**Figure 4. More than half of survey respondents intend to buy, rent, or use a hybrid approach for their top analytics priorities in the coming year**

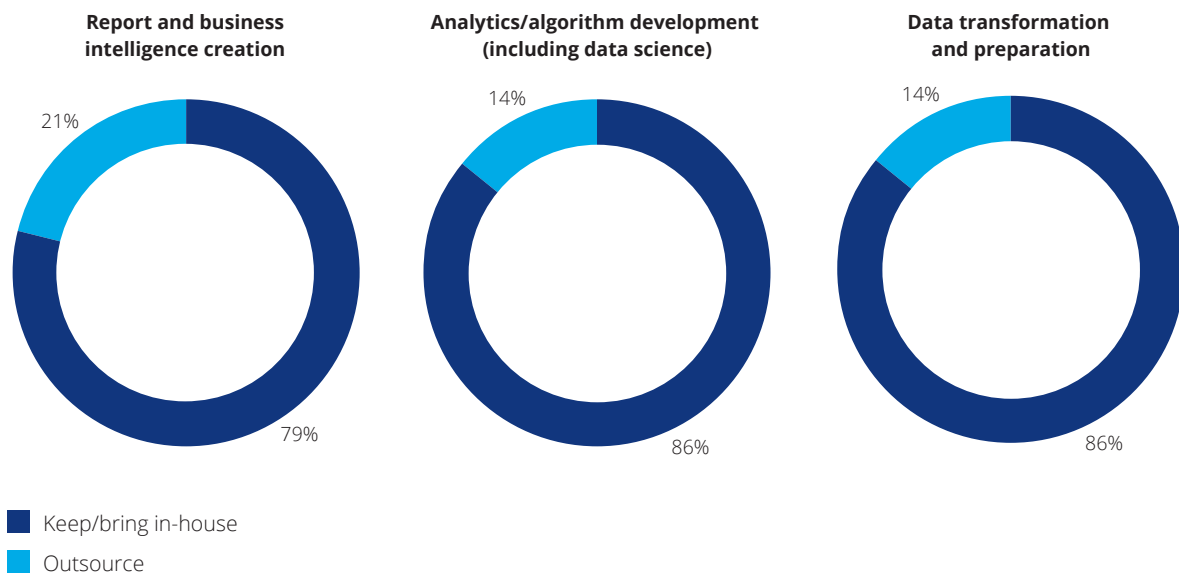


Source: Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey

Our respondents often rely on vendors to help stand up these solutions and customize them to their organizational needs, but many look to keep day-to-day analytics capabilities in-house rather than outsource them (Figure 5). Our interviews suggest that two main considerations drive this: (1) data security, and (2) market- and organizational-specific knowledge requirements to interpret the data. Many health plan respondents believe that keeping data inside their four walls reduces security risks. Additionally, they believe the data analysis requires an understanding of their business, which can be best served by their in-house analytics team. We believe analytics is a critical part of health plans' business models, and retaining in-house expertise will likely be essential to their long-term competitiveness and future value proposition.

**Figure 5. Survey respondents prefer to keep analytics activities in-house**

Which of the following analytics activities do you intend to keep/bring in-house or outsource in the next 3 years?



Source: Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey

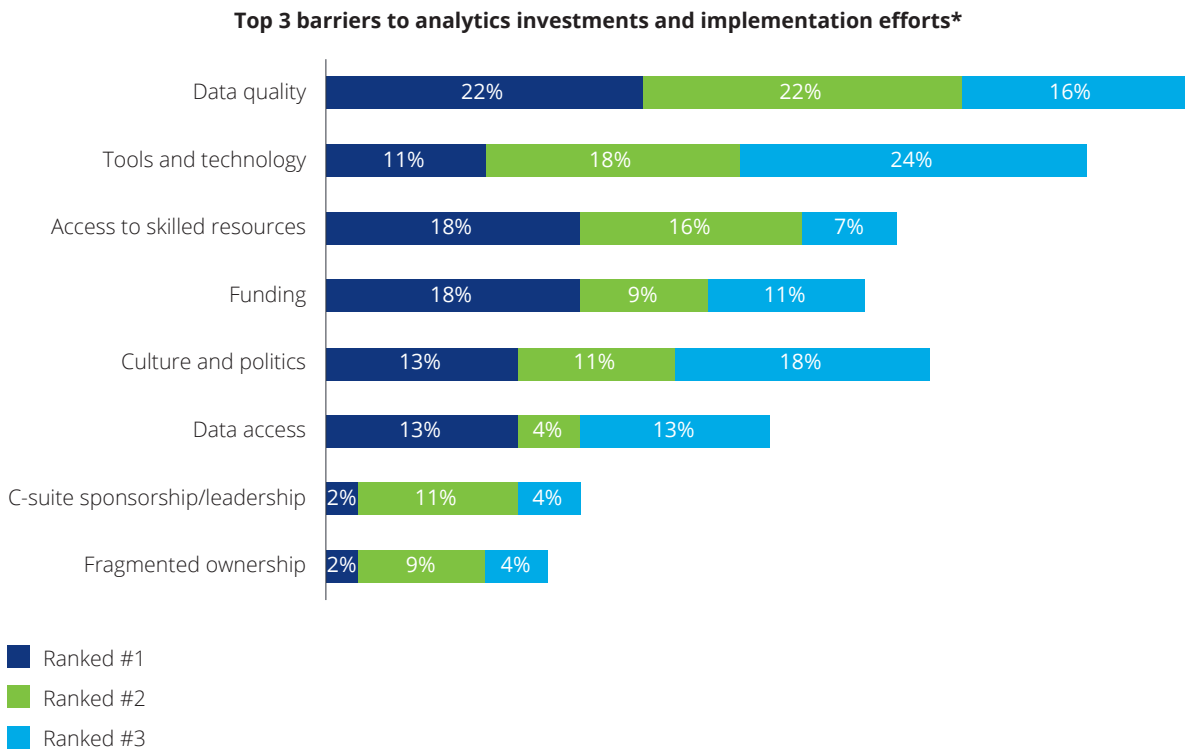
“Our resources are focused on the delivery side this year. We will add full-time employees to take advantage of the other two pillars—market side and financial—but we will not shift focus away from the delivery side because that’s where the most cost levers are.”

—Chief Information Officer (CIO) and Vice President of Health Network Services

**Data quality, technology, and access to skilled labor are big barriers to analytics investments and implementation efforts**

Data quality is the most commonly cited barrier to analytics investments and implementation by our respondents, followed by asset-related barriers: tools and technology, access to skilled resources, and funding (Figure 6). Culture and politics rounds out the top five barriers.

**Figure 6. Barriers to analytics investments and implementation**



\*Responses ranked by composite score, where a higher weight is assigned to a higher rank

Source: Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey

**Barriers to analytics investments and implementation may be related**

When analysts spend 60 to 70 percent of their time on data preparation and cleaning, they can have little capacity left to perform actual analytics, exacerbating staff challenges. Furthermore, many business systems and processes do not support analytics needs. Many of these systems were designed solely with administrative goals in mind—pay claims, take phone calls, or answer member inquiries. Little thought was given to the potentially useful information generated by those activities. As a result, these systems do not usually capture valuable data. Changing or overhauling these systems, however, often requires major capital investments, complex implementations, and operating in a dual environment until transition from a legacy to a new system is complete.



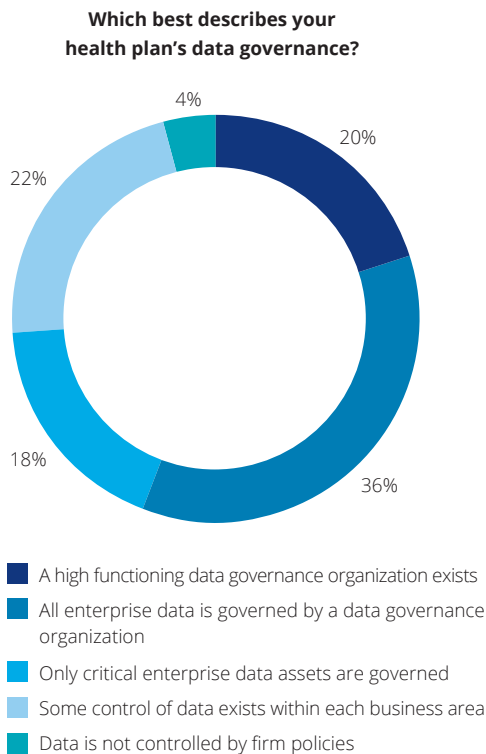
In regard to data quality, most survey respondents stated that they have data governance in place, but some organizations have significant work to do in this area. Almost half of survey respondents have limited to no data governance (Figure 7). Our interviewees suggest that even leading organizations are not as advanced as they would like to be in this area. Often a majority of the data are governed, but pockets still remain outside the governance organization. Data governance is important because poor data can result in incorrect analysis or erroneous conclusions. Stakeholders will often question the validity of analytics results, and proving to them that the data are clean and valid helps alleviate some of their concerns.

**Better data can improve organizational efficiency**

One plan we spoke with invested in a member master-data solution. The goal was to measure *true disenrollment*. Within the plan’s legacy data system, when a member moved from one product to another, it would lose track of that member because there were different member ID numbers across various product databases. Linking those records and determining true retention rates was difficult and time consuming.

With master data, the organization is now able to generate target lists of disenrolled members and conduct outreach much more efficiently. Sales people no longer chase individuals who simply switched products, and instead focus their efforts on people who actually disenrolled. Many of this plan’s Medicaid members leave not by choice, but because they lose eligibility. The plan’s sales team can identify and work with these individuals—and with government agencies—to help them qualify for Medicaid and re-enroll.

**Figure 7. Some organizations have significant data governance needs**



Source: Deloitte Center for Health Solutions 2017 Survey of US Health Plan Analytics

As survey respondents looked toward more advanced technologies, big data platforms were of most interest to them (Table 1). Cloud-based data platforms (e.g., Amazon Web Services) and cognitive computing tools (e.g., IBM Watson and Cognitive Scale) were also of great interest to respondents over the next three years. In our interviews, we heard excitement and skepticism about cognitive computing, and also differences in understanding of the terms “cognitive,”

“machine learning,” and “artificial intelligence.” We believe that health plans should at a minimum explore how to begin introducing these technologies, tools, and approaches into their analytics ecosystems. Analytics is a core competency for the industry and thus, health plans could benefit from ensuring they are investing for the future and staying on top of how advanced analytics and big data will drive differentiated insights today and in the years to come.

**Table 1. Big data platforms are of interest among survey respondents**

Technology	Yes, currently using	Yes, considering adding	Yes, considering adding in the next 3 years	No, do not use or consider
<b>Big data platform</b>	51%	20%	20%	9%
<b>Cloud-based data platform</b>	44%	11%	18%	27%
<b>Cognitive analytics/ computing tools</b>	33%	24%	20%	22%

Source: Deloitte Center for Health Solutions 2017 Survey of US Health Plan Analytics

We believe that health plans should at a minimum explore how to begin introducing advanced technologies, tools, and approaches into their analytics ecosystems.

Technology can help alleviate staffing challenges. Many organizations we interviewed are beginning to reap benefits from technologies that enable self-service for business users, freeing analysts to do more building of analytics versus spending a disproportionate amount of time on data preparation. That said, implementing self-service requires additional technology and resource expenditures and often a need to educate business users about not only the analytical tools but also the underlying data.

We also heard that the expectations for analytics professionals have evolved: technical expertise alone is usually no longer enough. Analytics professionals need to have a good understanding of the business to be able to think creatively about the problem so that they can deliver useful analytics. If forced to make a choice between strategy, people, data, process, or technology, many of the executives we interviewed said they would invest in people. The people aspect can be especially complex, as illustrated by one health plan we interviewed:

“I wish they would start a curriculum on health care data so people would understand reimbursement methods or how claims systems work—this is all on-the-job training. This is a challenge from a talent acquisition perspective. We can find an analyst or a health care person, but we can’t find a combination of the two, and that changes the dynamic when you have two people filling in the gap. Add a software engineer on top of that, and you are talking three people: one who can think, one to make it scalable, and one who can actually define the problem.”

Emerging analytics positions are already starting to take hold in some organizations. Most survey respondents have analytics designers, visualization developers, and data scientists. As respondents looked to the future, data scientists, analytics librarians, and self-service librarians were most likely to be added in the next one-to-three years.

**Table 2. Survey respondents are mostly likely to have an analytics designer**

Roles	Yes, currently have	Yes, plan to add in the next year	Yes, plan to add in the next 3 years	No, do not have or plan to have	Don't know
<b>Analytics designer</b>	60%	11%	11%	4%	13%
<b>Visualization developer (e.g. Tableau, Qlik)</b>	49%	9%	11%	16%	16%
<b>Data scientist</b>	40%	18%	13%	11%	18%
<b>Analytics librarian</b>	24%	16%	18%	24%	18%
<b>Self-service librarian</b>	16%	18%	18%	27%	22%

### Analytics functions are generally centralized within an organization

While most of our survey respondents stated that analytics functions related to hardware/infrastructure, data storage, and data preparation are primarily owned by IT, there was a closer split of IT and business ownership for the building of reports and business intelligence (Table 3).

Despite differences of primary ownership, the majority of our survey respondents stated that their analytics functions were generally centralized into a shared service for the enterprise to capitalize on economies of scale and competency. This is not surprising given that analytics talent is often in short supply and organizations must maximize these scarce resources while also driving re-use and better collaboration.

Regardless of how analytics are organized, a coordinated, business-driven approach to analytics is key to ensuring that initiatives are aligned with business goals. A close working relationship between analytics, IT, and business is important and can be achieved through structural or governance means. For example, one Chief Analytics Officer we spoke to has a regular management process to engage with the CIO and Chief Technology Officer on important analytics matters. Senior directors in the analytics department are routinely invited to and attend strategic business meetings. In a different organization where each business function has its own dedicated analytics team, collaboration occurs across analytics teams.

**Table 3. Analytics functions are somewhat centralized\***

Analytics functions	Primarily owned by IT	Primarily owned by business	Decentralized	Shared service
Report and business intelligence creation	49%	44%	29%	64%
Intake and evaluation of analytics requests	56%	38%	31%	63%
Analytics/algorithm development	56%	38%	33%	60%
Data transformation and preparation	60%	33%	31%	62%
Data storage and warehousing	67%	27%	31%	63%
Analytics hardware and software management	73%	20%	20%	73%

\*Not showing the proportion of respondents who answered "Function not in place"

Source: Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey

## Conclusion

Many health plans face increasing financial pressures, changing market dynamics, and an uncertain political environment. To stay competitive, they should understand and anticipate their customer needs and their own financial and operational standing. Analytics is often integral to these needs.

How do you become an insight-driven organization? While there is no one-size-fits-all answer, health plans should consider these initial priorities:

- **Commit leadership:** Gain senior leadership alignment on the importance of analytics in driving differentiated business performance in the future. Establish an analytics champion from the senior leadership ranks to sponsor enterprise analytics efforts and work with the leadership team to commit the necessary resources for the journey. Create an enterprise-wide analytics leader, if one is not already in place, to chart the course and drive day-to-day enterprise analytics forward.
- **Set analytics priorities:** Establish the top strategic business priorities for analytics and identify high-value analytics use cases to tackle in the near-term in order to build momentum and excitement around analytics across the company. This should include addressing some foundational reporting/business intelligence needs while also applying advanced analytics techniques to provide new predictive/prescriptive insights to well-trodden business issues.
- **Align the strategies:** Align the current data architecture strategy with future business needs. Introduce new architectural concepts (e.g., landing zone/data lake, master data management) and technologies/tools (e.g., self-service, cognitive computing) to support business objectives.
- **Address data quality:** Establish an enterprise data quality and governance framework to manage the data assets across your organization, helping to create a high level of confidence around the data and the insights produced.

- **Organize thoughtfully:** Define an operating and organizational model that will best enable analytics within your organization, balancing business intimacy/agility and economies of scale/competency amongst scarce resources. Align governance, processes, and teams to promote re-use and collaboration in building analytics and promoting knowledge sharing.

Analytics is more than just technology and tools. An effective insight-driven organization can focus on all of the above areas to begin the data and analytics transformation to drive better insights into executive decision-making across the company.

### Study methodology

To inform this study, the Deloitte Center for Health Solutions conducted an online survey and qualitative interviews.

- An online survey of 45 analytics professionals at health plans was fielded between April 7 and May 1, 2017 using an online panel. While not nationally representative, the survey provided a window into the top-of-mind issues facing health plan analytics departments. Survey participation criteria included:
  - Minimum size of 250,000 covered lives
  - Working in an analytics role or function
  - Having involvement in organization's analytics oversight and governance
- Interviews with 14 analytics executives at 10 health plans was conducted between March 22 and June 1, 2017. The diversity of roles and functions of the interviewed analytics executives reflects the variability in how health plans structure and consume their analytics:
  - Chief Analytics Officers reporting to CEO or to CXO underneath CEO
  - Chief Data Officers, VP COE Data Management
  - CIOs, Directors of IT
  - VP/Director of Informatics
  - VP of Health Network Services
  - VP of Clinical Programs
- Interviews with five technology and analytics companies providing services to health plans and providers

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Natasha Elsner contributed to survey development and analysis, interview outreach and the interviews, and the writing of the paper. Mohinder Sutrave assisted in secondary research, interview outreach, and survey data analysis.

## Acknowledgements

The authors would like to thank Jim Whisler, Health Actuarial Practice Leader, Deloitte Consulting LLP; Jason Wainstein, Health Plan Technology Offering Leader, Deloitte Consulting LLP; Ollie McCoy, Health Plan M&A Practice Leader, Deloitte Consulting LLP; and Geoff Loughheed and Tim Van Ee from Deloitte's Health Plan Analytics practice, Deloitte Consulting LLP, for their expertise and guidance.

The authors would also like thank Bill Copeland, Dave Biel, Leslie Read, Brian Doty, Matt Siegel, Satish Nelanuthula, Anish Kumar, Wendell Miranda, Laura DiAngelo, Andreea Chamorro, Steve Davis, Lauren Wallace, Samantha Gordon, Amy Hoffmaster, and the many others who contributed their ideas and insights to this project.

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# Deloitte Center *for* Health Solutions

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