



# Unlocking the Promise of AI in Member-Centric Care

By Harbinder Raina



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AI is a short acronym that holds the potential to create big change for healthcare delivery heading into a new decade. If you read the news or attend conferences, there's no shortage of headlines about "radical new diagnosis methods" and countless vendors offering artificial intelligence solutions for anything and everything that ails physicians. In the private sector, healthcare AI startups alone have raised more than \$4.3 billion in 576 deals from 2013 to 2018. This number is projected to reach \$16.9 billion by 2027.

Artificial intelligence aims to mimic human intelligence using computer systems. The intelligence is built either by self-learning algorithms using data or with the assistance of explicit domain knowledge. The algorithms then keep improving the results by learning from previous outcomes, both positive and negative. But why is it gaining traction now? One of the reasons is the availability of a huge volume of data that can be used to train the AI algorithms. In healthcare, that means data from medical records, lab tests, registries, wearable health apps and monitoring devices—social determinants of health. Another reason is the exponentially improving computing power, along with better algorithms.

From a healthcare perspective, these algorithms are helping physicians with administrative tasks, advising them in making better decisions, or acting as a peer and providing treatment (such as analyzing a radiology report). According to ZS's 2018 AI in Healthcare study, 80% of physicians currently use some form of AI in their practice, with 21% required to use AI by their organization. On the pharma front, artificial intelligence holds promise in drug discovery, clinical trials and commercialization. From health plans' perspective, time and resources are being invested in leveraging AI for three reasons:

- + **Increasing operational efficiency:** Claims processing and fraud detection are two of the key applications from an operational efficiency perspective. Inefficiency in claims processing comes in with too many claims getting flagged for additional review because of incomplete information or codes. Natural-language-processing-based algorithms identify missing procedure or diagnosis codes as long as some description of the procedure is available, making the process more efficient. Fraud detection is another key use case. AI-based platforms identify patterns that correlate to fraudulent billing practices and help insurers uncover fraud.
- + **Stratifying risk:** Predicting and managing risk is at the heart of the insurance business, making risk stratification a critical function for health insurers. As the availability of data that can be used for risk stratification increases (such as EHR, social determinants of health, behavioral data, etc.), the use of AI to identify and power smarter algorithms to stratify risk is becoming a vital use case for health plans. With the help of AI, health companies can not only identify current high-risk members but also proactively identify future high-risk members. These members are then enrolled in care programs to improve or manage health outcomes.

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- + **Providing member-centric care:** In an increasingly competitive health plan market, member experience is becoming an important determinant of plan selection. HEDIS measures, for example, are a direct instance of how this can affect health plans' bottom lines. And in the golden era of mobile apps in industries like travel and retail, members have come to expect service at the touch of a button. Quick access to services such as benefits explanations, provider directories, telehealth and appointment scheduling are likely to attract new membership and improve member satisfaction scores.

Out of these three areas, member-centric care is the most complicated as health plans need to engage both members and providers to deliver on it, along with upgrading the use of technology in this space. Member-centric care is also critical because plans that provide better customer experience have a greater chance to differentiate themselves. Looking at 2019 STARS ratings reveals that the top 30% of Medicare Advantage plans have an average rating of 4.56 stars on customer experience when the average rating for the remaining plans is at 3.57 stars.

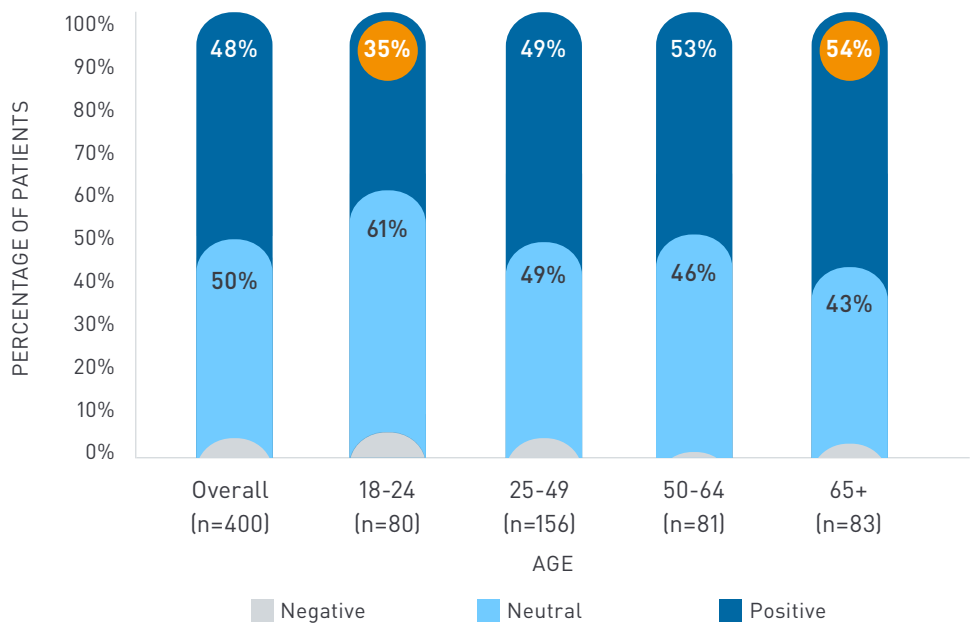
In this paper, we will delve deeper into how health plans can integrate AI into member-centric care and take members and providers along in their quest to unlock the full potential of AI in this space.

## The Promise of AI in Member-Centric Care

In ZS's AI in Healthcare survey, we found that the overall sentiment around AI is very positive among healthcare consumers. Out of the 400 patients interviewed, 87% of people (patients) expect an increased use of AI in the next five years. Similarly, 86% of physicians expect an increase in the use of AI in future.

Another interesting finding in our survey is that older patients—65 years old and above—are more optimistic about the use of AI. Fifty-four percent of patients older than 65 have very positive feelings toward the use of AI in healthcare, compared to 35% of patients who are younger than 24.

### SENTIMENT TOWARD THE USE OF AI IN HEALTHCARE BY AGE



Fifty-four percent of patients older than 65 have very positive feelings toward the use of AI in healthcare, compared to 35% of patients who are younger than 24.

The plausible explanation could be that those who are 65 and above use healthcare services the most and are acutely aware of the confusion around pre-authorization, the fuzziness about what's covered and what's not covered in the plan, back-and-forth about claims, etc.

It's a great opportunity for health plans to leverage this positive sentiment toward AI to improve member experience, resulting in the acquisition and retention of the customer. Improved member experience, leading to better engagement, will also help in better risk and utilization management.

The majority of respondents felt most positive about AI helping to improve overall efficiency in healthcare.

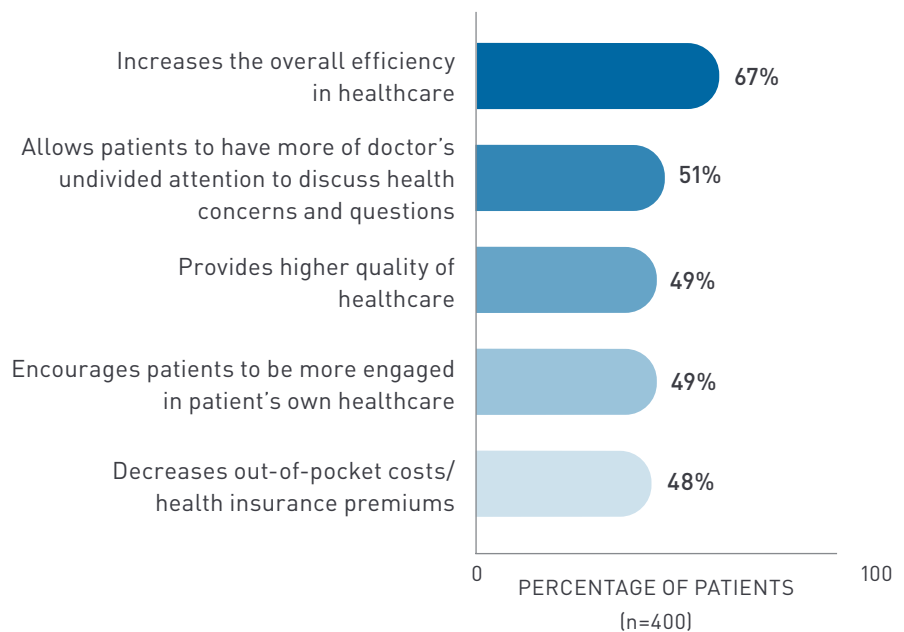
## How Can Health Plans Realize This Promise?

For health plans to realize the promise of AI, the key will be to engage both members and providers to improve member-centric care. For engaging members, health plans will have to improve the orchestration of the customer journey, expand access and be a partner in active health management. For providers, health plans will have to think of different engagement strategies, including incentives programs for providers for implementing AI.

**1. Improving the orchestration of the customer journey using AI:** When asked about the reasons that best explain why AI should be integrated in healthcare, the majority of respondents felt most positive about AI helping to improve overall efficiency in healthcare. For health plans, it would mean that opportunity lies in leveraging AI in improving the orchestration of the customer journey outside of the doctor’s office—something that health plans can directly control.

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### DRIVERS TO INTEGRATE AI IN HEALTHCARE



How might it work? The orchestration could be made more efficient by a virtual assistant that acts as “buddy” in a typical customer journey—a buddy that could connect members seamlessly to their providers, pharmacy and other services. Information could be brought to members and tailored to their individual needs and context. Imagine telling a virtual assistant that you’re having flu symptoms and the assistant responding that you can either wait until the next day to see your PCP or go to a walk-in clinic close by, which will work equally well for your symptoms. It also tells you that your co-pay will be \$40 for the PCP visit



and \$20 for the walk-in clinic. Once you pick an option, the assistant makes the appointment (according to your preferred timing) and orders you a Lyft to your appointment. And once you see the doctor and have received the medicine, your buddy helps you stay on schedule with your medication.

The machine learning aspect of AI applications will learn from these interactions and will over time provide better suggestions to the members or create a more individualized experience for them by scheduling follow-up visits, nudging them to take medication, encouraging them to modify their diets, etc. This experience by the plan members, enabled by AI, will be very different than what most members experience currently.

The improved orchestration of the customer journey definitely improves the experience, but it also helps in managing utilization and managing risk. In the earlier example, a member is presented with small but important pieces of information, like the fact that both PCP and walk-in clinic options will provide similar results for flu symptoms or how much the out-of-pocket costs will be. This information can help steer members to better and more cost-effective choices. These advancements will also help in managing risk by assisting the members with medication adherence and follow-up appointments.

Some of the health plans are already making progress in this space, such as Oscar Health, an app that helps you find a doctor near you, tracks your deductible, etc. Cigna is working on something similar and **has launched its voice assistant “Answers by Cigna” skill for Alexa**, which aims to clear up confusion about healthcare terms and concepts. Currently, the “Answers by Cigna” skill only provides educational information about healthcare and insurance, but with Alexa becoming HIPAA-compliant, the companies can now look at other use cases that involve the exchange of patient information through this voice-activated platform.

## **2. Improving access by providing care when you need it and where you need it:**

Telehealth platforms are making it possible to overcome the time and location barriers in receiving care. Whether it’s an elderly member in a rural setting who wants to get advice from a world-class specialist or a parent who wants to ask a quick question in the middle of the night about her child’s high temperature, telehealth platforms are making it easier to get help at the time and location that works for you.

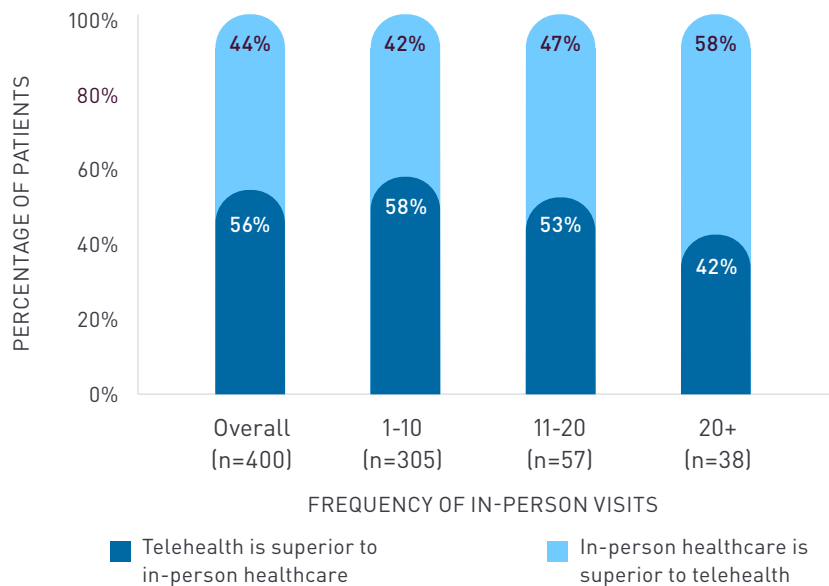
According to ZS’s survey, 22% of physicians work in an organization where patients can interact with a physician virtually through a telehealth platform or an application, and 45% of the patients surveyed have received care outside of the doctor’s office through devices such as computers, tablets and smartphones. This suggests that there’s high receptivity among patients and physicians toward telemedicine, but how is AI helping? AI is making these platforms more effective and helping them deliver better care in the following manner:





- + **Connecting members to the right physician:** Members are not always sure which physician or specialist is appropriate for their condition or symptoms, so members rely on their PCP to connect them to the right provider, particularly if they need a specialist. AI is helping the telehealth platforms to find the right match for a patient’s symptoms based on what it has learned from vast amounts of medical literature, past interactions, and a patient’s preferences or medical history. AI is also making this process easy by enabling a voice-activated bot that can listen to a patient’s symptoms, run the algorithm and connect a patient with the right provider. Lemonaid Health is one such platform that provides this service.
- + **Diagnosis:** In a virtual setting, physicians can see the patients through video chat, but physical distance might limit them from running a few checks that they would otherwise perform during a patient visit. It could be simple things like listening to your chest for congestion. AI is making up for this slight disadvantage in diagnosis by suggesting possible diagnoses based on medical records and literature—and, in some cases, by asking additional questions to the patients that AI (through machine learning) has learned are effective during diagnoses. HealthMap is one such company that claims that it uses AI to help physicians in diagnosis.
- + **Treatment:** With advances in data science and AI algorithms, the treatment received via telehealth is also improving. AI helps in treatment in two ways: First, it can replace the doctor and provide recommendations for a patient’s symptoms. However, there’s still some level of risk in replacing the doctor.

**PATIENT PREFERENCE: TELEHEALTH VS. IN-PERSON HEALTHCARE**



Less frequent users of healthcare services are more inclined to use telemedicine.

The second—and more common—use of AI is to assist in treatment and provide insights (based on recent research and prior results), or become a source for getting a second opinion. InfiniteMD is one of the companies that uses AI algorithms to provide a second opinion or recommend treatment options for cancer patients.

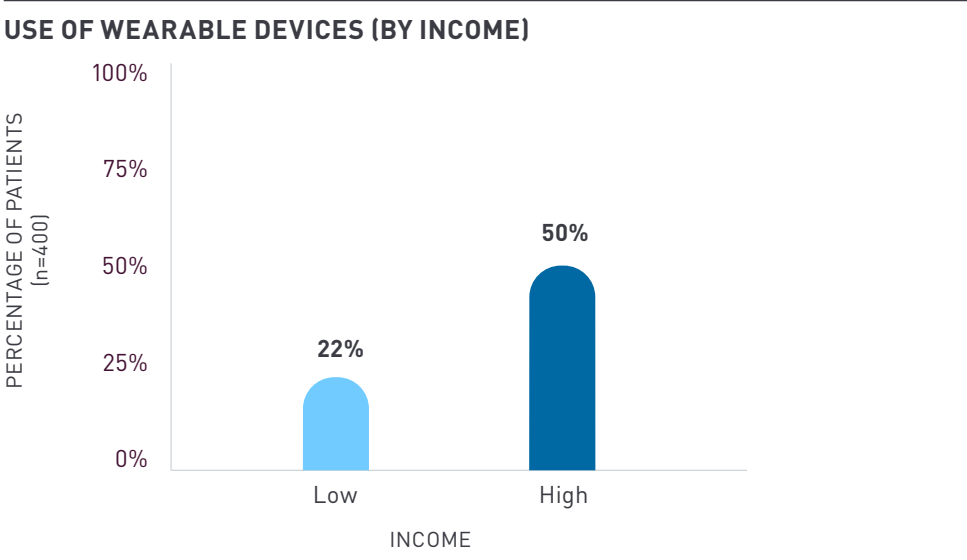
From the perspective of what type of patients would be more receptive to telehealth, our survey found that less frequent users of healthcare services are more inclined to use telemedicine: 58% of patients who visit a healthcare provider more than 20 times a year consider in-person healthcare to be superior to telehealth, compared to only 42% of patients who visit less than 10 times a year, which means that the “buddy” that we talked about earlier should provide a telemedicine option to the less-frequent users as a first choice.

**3. Leveraging AI for active health management:** Our patient survey found that 45% of the patients use wellness apps that track overall health and future goals. In addition, 34% of patients use wearable devices that aid or monitor daily activity to improve health and wellness, which means that a significant portion of the patient population is using these devices, and that number is probably growing. Artificial intelligence can leverage these trends and enhance the use of wearables in the following ways:

- + **Providing insights:** A simple way to receive insights is via the health tips that your smart watch displays based on your activities during the day. It can become more sophisticated if the device also knows about your health history (which can be provided by the health plans), your medication schedule, information from medical journals, and time and location information. Aetna’s Attain app is an example. Using an Apple Watch, the Attain app provides Aetna members with personalized goals, tracks their daily activity levels, recommends healthy actions, and ultimately rewards them for taking these actions to improve their well-being.
- + **Monitoring chronic conditions:** Integrating AI with wearable technology can help patients manage chronic conditions. These wearable devices can be used to track the condition, and healthcare providers can intervene before the next adverse event. QardioCore is one such wearable ECG/EKG monitor that tracks your heartbeat’s electrical activity. The device records the electrical activity of the heartbeat and transmits it to your smartphone. At the same time, **the AI algorithms classify the data**—for example, whether your heartbeat is normal or irregular—and can help doctors interpret results in real time.

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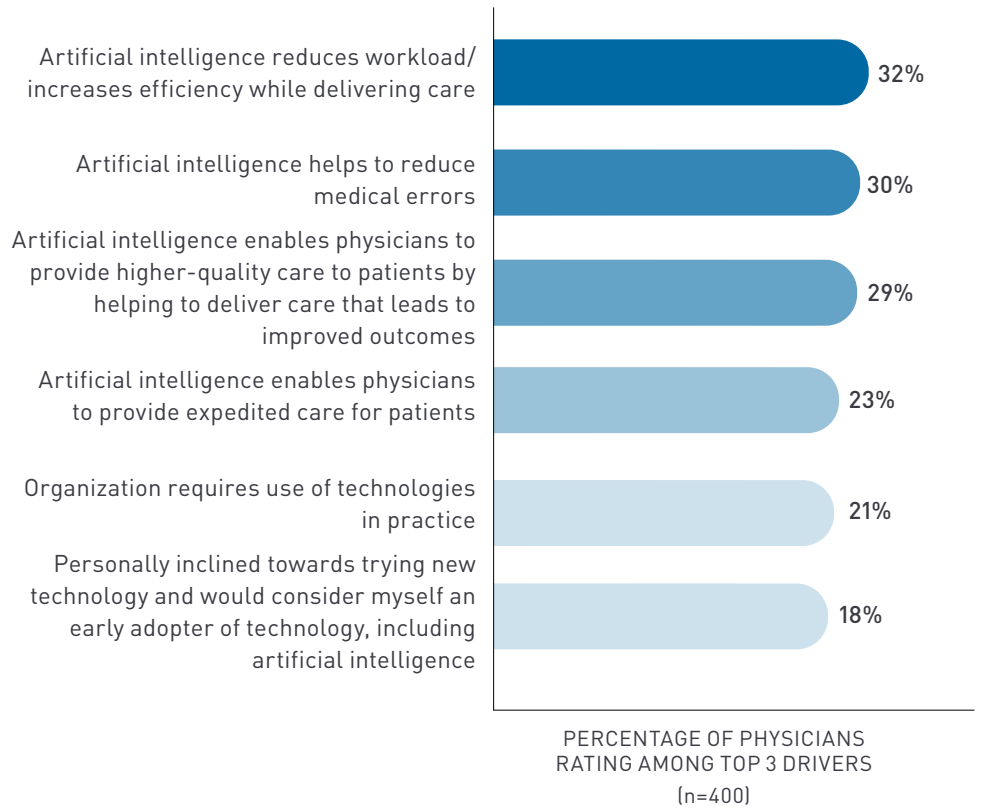
survey, the use of wearables (outside of the site of care) decreases among those with lower incomes, indicating cost to be a barrier. If that’s the case, should health plans try to remove that barrier and provide these devices free of cost or at the discounted price? UnitedHealthcare did something similar. Anyone enrolled in the UnitedHealthcare Motion program can earn up to \$1,000 a year if they meet daily walking goals, with progress recorded by the Apple Watch. After paying tax and shipping, anyone enrolled in the program can get an Apple Watch Series 3 and have the option to apply earnings from the program toward buying the device.

**4. Engaging providers to use AI to improve the patient experience:** Health plans’ strategy to improve member-centric care will be incomplete if they do not engage providers in this pursuit. Our survey found that providers are most open to the use of AI to reduce their administrative workload and the potential for medical errors. This seems like an obvious win-win: Both sides come out ahead if life is easier for physicians and health plans can reduce costs.

What might act as a barrier, for providers, is the cost of implementation and uncertainty around the return on investment for certain specialties. Our survey validates that cost is the key barrier for providers in implementing AI. To increase adoption, plans should find ways to lessen the cost barrier, such as by providing monetary incentives for leveraging AI to improve efficacy and outcomes.

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## DRIVERS FOR INTEGRATION OF AI WITH HEALTHCARE



Our survey also found that receptiveness to AI-based technologies differ by specialty, especially when we talk about AI helping in diagnosis and treatment. Radiologists are more willing to adopt AI-based solutions compared to pediatricians. This means that while pushing for AI as an assistant in diagnosis and treatment, health plans will have to be selective and first target the specialties that are more receptive.

The biggest challenge that patients see in AI-driven healthcare is data security, which means that health plans need to provide more information to members on the measures being taken to keep their data secure (even the data collected from social media).

### The Challenges of Leveraging AI

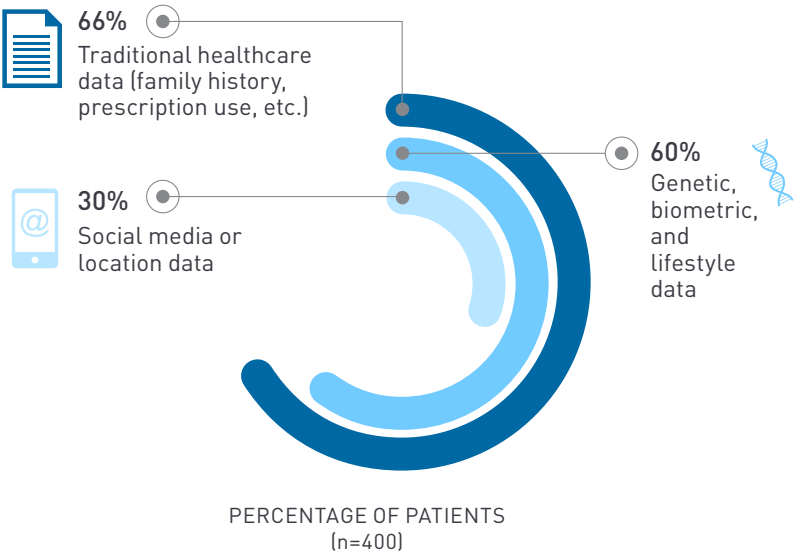
While AI opens up new opportunities for health plans to improve member-centric care, there are some challenges that health plans will have to overcome to unlock the complete potential of AI. According to ZS's survey, the key challenges revolve around access to data and expertise.

#### Access to Data Will Decide the Winners

Peter Norvig, a research director at Google, once said, "We don't have better algorithms than anyone else; we just have more data." To exploit the full potential of AI, health plans will also have to have greater access to data. And according to our survey, the biggest challenge that patients see in AI-driven healthcare is data security, which means that health plans need to provide more information to members on the measures being taken to keep their data secure (even the data collected from social media). Health plans and startups in the health AI space will have to be more explicit in explaining how the patient data is secured and used only for a member's benefit.

Our survey also found that patients are more willing to share traditional healthcare data (medical records, prescription history, etc.) than advanced healthcare data (genetic data, lifestyle data, location data from smart devices, etc.).

#### PATIENTS' WILLINGNESS TO SHARE DATA





Patients are more willing to share data with providers than their insurance company.

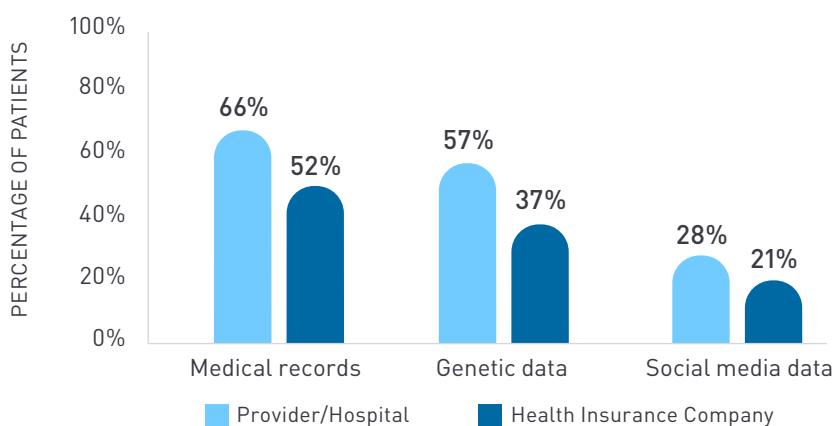
A potential business model to increase access to data is that of a “platform” akin to the Apple or Amazon ecosystem, where a customer can orchestrate his daily activities (food purchases, workout plans, medication refills, etc.). This data could then be provided to a payer, who could analyze it and engage with members on their associated health issues.

Another idea that some companies are exploring is to create a marketplace for data. Nebula Genomics, for example, has created a blockchain-based marketplace that allows patients to license their data for profit. Nebula also offers its own genome testing service to consumers to make the data available to the marketplace. Health Wizz is another consumer health app that allows individuals to trade, share or donate their health data in a secure, confidential health data marketplace, in addition to participating in clinical trials.

### Health Plans Face a Trust Deficit

Another challenge that our survey uncovered is that there is some level of trust deficit between the patients and payers. Our survey findings indicate that patients are more willing to share data with providers than their insurance company. The majority of the patients (60 to 70%) are willing to share data with payers only with consent for a specific purpose.

### WILLINGNESS TO SHARE DATA WITH HEALTH INSURANCE COMPANY VS DOCTOR/HOSPITAL



This is not a trivial problem to solve. One of the reasons for lower trust is that members don't see health plans delivering on their commitment, so plans will need to bridge the trust deficit by getting the basics right and being more transparent: designing plans that are easily understood, using AI to explain the plan benefits or out-of-pocket costs at the time the service is rendered (rather than at the time of claims adjudication), and making pre-authorization more efficient and transparent.

### **Companies With AI Expertise Are Isolated From the Owners of the Data**

AI expertise is isolated from the owners of the data (the payers). This might be more applicable to small- and mid-tier insurers. Some of the bigger insurers have good in-house capabilities. The plans that don't have the right AI capabilities will have to put a strategy in place to overcome the expertise gap.

One of the options for gaining expertise is to partner with companies providing different solutions (separately for each use case). The key benefit of this approach is that plans can scale up their capabilities fast by using existing solutions on the market, but the downside is that plans will have to live with the generic solution, which may not be tailored to a plan's specific needs or business.

The second option is to acquire or invest in multiple AI-based startups to create an ecosystem of solutions that advances a health plan's goal of leveraging AI. This is something that Cigna might be trying to do with its investment in digital therapeutic firm Omada Health, artificial intelligence firm Prognos and telehealth platform MDLive. This approach will give companies more control over the solution and overcome the key drawback of the first approach.

The third option could be to partner with an analytics firm that works with the plan to incorporate AI into member-centric care in the manner that works for the specific needs of the health plan. This option will provide the health plan flexibility in building the solution that it wants without investing heavily in building the capabilities in-house or acquiring solution providers.

## The Path Forward

Overall, it's important to note that a significant proportion of members are receptive to the use of artificial intelligence in the delivery of healthcare services, and there's an opportunity to improve the member experience. Members also demonstrate openness toward the use of AI in providing care outside of the physicians' office and to assist in ongoing health maintenance activities, so the opportunity is ripe to capture the promise of AI in improving member-centric care. To effectively realize the promise of AI, health plans will have to create an action plan with the following elements:

**1. Creating a road map:** As we discussed, there are several ways in which health plans can use AI to improve member-centric care, but plans will have to prioritize based on where they are in the journey and which aspect of member-centric care they want to focus on. According to our survey, engagement in AI-assisted member-centric-care programs may differ by age, location, frequency of usage of health services, etc. For example, the elderly may respond more to the administrative help (or better orchestration of the customer journey), less frequent users may respond to healthcare services for telehealth (virtual assistance), and younger and higher-income populations may respond to wellness aid via wearables, which means that if the plans want to focus on the elderly population or middle-aged members, then they should prioritize using AI for the orchestration of the customer journey. If the plan's focus is a younger demographic and large self-insured employers, then the plan should prioritize using AI for active health management, and so on.

**2. Formulating a data strategy:** With a good handle on the road map and priorities, plans will have to formulate a data strategy to support the road map. A data strategy will largely have three key elements:

- + **Data acquisition:** Plans with access to diverse sets of data will have a better opportunity to leverage AI for member-centric care. Plans will have to come up with a strategy to acquire data beyond claims. According to Golnvo, a healthcare consulting firm, emerging data (individual behavior, social circumstances and physical environment) has **a higher impact on determining or predicting the health of a member** (more than 60%) compared to traditional data (medical care, genetics and biology).
- + **Data security:** Data acquisition strategy will have to be supported by a comprehensive data security strategy. As we found out in our survey, data security is the biggest concern that members have while sharing data with the plans, especially the emerging data. A robust data security strategy will also help bridge the trust gap between members and plans.

Creating an organizational structure that supports advanced analytics in an integrated way is essential for the success of the road map.

+ **Data integration:** Along with solving data security, health plans will have to think about integrating current and prospective data. One of the issues that health plan organizations have is that the data is siloed. Plans can identify small experiments to link data across many sources, both inside and outside of the organization.

**3. Building the right organizational structure:** Creating an organizational structure that supports advanced analytics in an integrated way is essential for the success of the road map. An integrated data layer can be leveraged if it's serving different use cases (stakeholders) with the help of a central analytics team. Building the right organizational structure will also involve building advanced analytics (including AI) capabilities in-house or partnering with the right solution providers, or going the acquisition route and integrating some of these solution providers into their own companies. The decision will depend on the in-house expertise, size of the organization and the organization's road map for the future. Also, what does the organization think that its core competency should be?

**4. Engaging providers:** Regardless of the AI use cases included in the road map, plans will have to have strategy in place for engaging providers. It's an absolute must for improving the AI footprint in member-centric care. This is also an area where health plans have a dependency on someone outside of the organization, so they will have to think creatively to keep the provider community engaged. The strategy could include incentive plans for provider organizations (for greater adoption of AI), updates in the current contracts or vertical integration (for better control). The adoption of AI for member-centric care could also become a parameter while optimizing the provider network. Health plans will also have to be transparent with their intentions to win over doctors in today's era of change and migration to AI and data, which means that plans will have to form a true partnership with providers.

AI has the potential to transform the healthcare industry the same way that computers transformed businesses in the 20th century. Every health plan needs to have a strategy to leverage the promise that AI offers. That strategy might look different for each health plan based on where it is in the journey, but they need to have a strategy and start acting on it now.

## About the Author



Harbinder Raina is an associate principal in ZS's Pune, India, office and has worked primarily with clients in the healthcare space. His work has involved sales force effectiveness strategies, incentive program design for sales teams and provider organizations, and managing analytics COE. He has a B.E. in mechanical engineering from NIT Surathkal (India) and an MBA from the Ross School of Business at the University of Michigan.

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