



Expert Insights

Better health outcomes with AI-powered virtual assistants

Beyond chatbots, building connections between payers, providers, and consumers

IBM Institute for Business Value



Experts on this topic



John Murtha

Health Plan Industry Segment
Leader, IBM Industry Platforms
[linkedin.com/in/john-g-murtha/](https://www.linkedin.com/in/john-g-murtha/)
John.Murtha@ibm.com

John Murtha sets the strategic direction to deliver next-generation health plans to his clients. John has been working with the hospital and health care industry for nearly 20 years, and is a leading expert on health plan systems and operations.



John Tarcson

Lead Client Partner,
IBM Services, Healthcare
IBM Global Business Services
[linkedin.com/in/john-tarcson-8432a72/](https://www.linkedin.com/in/john-tarcson-8432a72/)
john.tarcson@us.ibm.com

John Tarcson helps clients design and implement capabilities that align operational transformation with cloud, cognitive, and automation technologies, including patented methods. With more than 24 years in the healthcare industry, his expertise includes health plan operations, health product structure modernization, and large-scale payer transformation.



Anita Nair-Hartman

Payer and Provider Strategy and
Business Development Partnerships,
IBM Watson Health
[linkedin.com/in/anita-nair-hartman-mha-90b2b95/](https://www.linkedin.com/in/anita-nair-hartman-mha-90b2b95/)
nhartman@us.ibm.com

Anita Nair-Hartman guides the development of key strategies and planning for payer and provider markets. Her work with healthcare stakeholders over the past 27 years includes leveraging data and analytics to derive insights to improve processes, financial, and clinical outcomes.

Convenience and consistency of information are key attributes of AI-powered healthcare assistants.

Talking points

Care outcomes are critical measures of success in today's healthcare market

But also important is measuring how engaged members and patients are with their providers and health plans, an example of which is Net Promoter Score (NPS).

The healthcare industry needs a better way to connect to consumers

Artificial intelligence (AI) and data analytics can identify patterns in behavior and outcomes to prevent unnecessary and costly inpatient admissions.

Virtual assistants open the door to more and better care choices

AI-powered tools make patients' lives easier by "self-servicing" care needs and offering post-event care guidance. Machine learning—a subset of AI—might enhance the future quality of care advice so that it only gets better.

—

Healthcare chatbot diagnosis

Chatbots are commonplace in the online retail space, but only now emerging in the healthcare sector. And it's about time. Well-designed chatbots can help retain or attract new customers, communicate more efficiently with a target audience, and provide solid customer service.

The trend toward healthcare consumerism—a movement to make the delivery of health services more efficient, convenient, and cost-effective—means the industry needs to find better ways to connect members and patients. The good news is that, with masses of plan information and mounds of data sprung from digital health records, the healthcare industry has the input needed to provide enriched consumer interactions from top to bottom. AI-enabled virtual assistants for payers, providers, and members can help make user experiences simpler and highly personalized.

Steps to better health

Studies show that where and how a person lives has a greater impact on wellness than institutional healthcare.¹ Value-based health focuses on the determinants of health, such as diet, exercise, and the daily stresses of life, and relies on the capture, aggregation, and analysis of local and regional data to uncover value. In today's era of consumerism, that means identifying where patients get lost in the labyrinth of the healthcare system and providing information to help guide them through it.

As such, the role of the payer is changing from a transactional customer engagement to an experience-based model to help drive better patient outcomes. Successful payers will be able to provide better experiences, resulting in higher satisfaction and better outcomes for plan members. This is important to the industry since value-based payment programs have increased industry complexity, making it even harder for consumers to know how to navigate the healthcare system.

Enhanced consumer experiences

Whether searching for a doctor in their network, asking a question about a bill that's due, or proactively checking if they're covered for an upcoming medical event, members often dread having to call their health plans for help. Their expectations for great customer service aren't very high, and most members are sick or in need of care when they call.

The lack of digital administrative processes has heightened frustration for the new breed of healthcare consumers who have become accustomed to online bill pay in banking and instantaneous information when web shopping. In fact, 60 percent say they've requested expected out-of-pocket costs from providers ahead of care, but barely half were able to get the information they wanted.²

Price transparency can often determine whether a patient will choose to undergo treatment, regardless of doctors' orders. A recent survey found that 82 percent of respondents who sought pricing information said costs influenced their healthcare decision-making process.³ That rate was highest among Millennials—those aged between 23 and 38—at 88 percent.⁴

Vested interest in prevention

Providers are placing more outbound calls to their patients as an investment in prevention. Care managers can help patients navigate common issues, such as medication adherence, to deliver better outcomes and higher consumer satisfaction rates.

Many of the services members seek from health plans, from paying for insurance, determining coverage, and understanding provider networks, present an opportunity to impact consumers' perception of value and service. And there are complex points after a health event—for example, after surgery or a recent diagnosis—in which members might become overwhelmed or confused and need outreach. In such cases, the human interaction of a call to a care manager or video consult from a trusted advisor can be available for support. Using technology, such as virtual assistants in either automated or agent-assist scenarios, may improve patient satisfaction and NPS to levels that sufficiently impact overall results.

Insight: What is AI?⁵

AI is computer science that uses algorithms, heuristics, pattern matching, rules, deep learning, and cognitive computing to approximate conclusions without direct human input. Before AI systems can be deployed in healthcare applications, they need to be “trained” by data.

Insight: Healthcare consumers in a digital transition⁶

In the US, 70 percent of healthcare payers let consumers obtain pre-authorizations or initiate claims using mobile apps, self-service portals, and virtual agents. And 60 percent anticipate customers' needs to proactively support them using SMS alerts, targeted marketing, visible and transparent claims status, and web chat.

AI can help organizations connect the dots while shifting from fee-for-service reimbursement to value-based care.

Quality of service and better health outcomes

Most plan members want to understand their benefits before they select healthcare services to help assure they're making the right choices in care, cost, and even distance from their homes for ongoing treatment, such as weekly physical therapy after an injury. The trouble is, most call centers aren't open 24/7. And, due to the complexity of workflows for the agent taking the call, answers could be inconsistent.

Now, imagine a conversation with an AI-powered virtual assistant. By removing low-value tasks from human operators, information can be shared quickly without the need of a call center, thereby creating a positive customer experience. Enabling patients to self-serve their care needs where possible can reduce the amount of human labor required to keep or help them become healthier.

For members with multiple conditions, complexity grows exponentially; proper support will likely not be found on a general online FAQ page. For example, diabetes can increase the occurrence of lung infections and worsen COPD symptoms in some patients, causing an increase in flare-ups. Those with this dual condition need to be able to drill down further into options of care.

If this information can't be found easily by searching plan information online, the next resort is a phone call to a live agent. An AI-enabled assistant can augment the human worker using a wealth of information that can be consumed quickly—and without the need to contact a call center. An AI-powered solution can quickly extract the information agents need to answer questions. Further, average handle time can be reduced by 20 percent, resulting in cost benefits of hundreds of thousands of dollars.⁷

AI-assistants consumers want to use

AI capabilities employed at multiple touchpoints provide an omnichannel experience to create member value. Swift, easy access to payer plans can help members make better choices and advocate for their own care. For the

US not-for-profit payer: Call deflection cost savings⁸

Facing a large volume of provider calls, agent attrition, and knowledge gaps, a US payer was looking to transform its call center to decrease operational costs. A voice-enabled cognitive agent solution set up back-end data to drive fast, accurate interactions using natural language conversation, extract meaning from unstructured questions, and find member-specific information. Deflecting Level 1 calls to a virtual agent resulted in cost savings and a personalized, consistent user experience across touchpoints.

provider, AI enables access to information about patient eligibility and medical costs, driving improvements in prior authorizations, quality of care, and the payments process.

The data model for a payer or provider platform that services multiple use cases should include medical, provider, pharmacy, and membership data, as well as claims and eligibility data from all major claims systems. Health plans can extend their data models beyond core data sources by loading lab results, electronic health record data, customer relationship management preferences, and wearable device data. Working with unstructured sources of data can be cumbersome, but the promise of real-time, personalized interaction is driving investment.

In the future, additional feeds of data may include:

- Data from an individual’s social media
- Digital therapy data gathered from software-generated patient interventions
- Social determinants, such as diet, housing, and social support networks
- Genomic profiles and genetic makeup

Facing industry challenges

Industry-wide deployment of AI-enabled tools isn’t without its challenges. Issues include physician–patient privilege, protected health information (PHI) regulations in the US, the General Data Protection Regulation (GDPR) in the EU, and the complexity of where, how, and how much data flows throughout the process. A health insurance plan with thousands, or even millions, of product permutations can make it difficult and time-consuming to train AI. It becomes even more complex when considering the hundreds of insurers with different health plans and hundreds of thousands of providers.

And don’t forget the inherent complexities, internal costs, and resources needed by big health players to build and implement enterprise-wide virtual assistance. Organizations must have the expertise, infrastructure, and buy-in from senior leadership to successfully implement an AI program.

Action guide

Better health outcomes with AI-powered virtual assistants

1. Chatbots are only now emerging in the healthcare sector

The trend toward healthcare consumerism is making the delivery of health services more efficient, convenient, and cost-effective. Undertaking an enterprise shift to AI-powered virtual assistants can help payers and providers better engage with consumers’ needs and preferences to improve the process and, ultimately, the consumer experience.

2. Investing in prevention works

AI-powered tools can enable swift, easy access to payer’s healthcare plans to help consumers make better choices and advocate for their own care. Patients appreciate interacting with caregivers who will personally address their health issues.

3. AI in healthcare could be life-changing

Healthcare organizations manage large amounts of data and complexity when modernizing processes because of strict patient data privacy regulations. But considering the “life-and-death” nature of healthcare as a service industry, it’s all the more reason to embrace disruptive technologies like AI to create fundamental, important change.

About Expert Insights

Expert Insights represent the opinions of thought leaders on newsworthy business and related technology topics. They are based upon conversations with leading subject matter experts from around the globe. For more information, contact the IBM Institute for Business Value at iibv@us.ibm.com.

Notes and sources

- 1 Anil Jain, M.D., Donna Daniel, Ph.D., Heather Fraser, Sanjeev Saravanakumar, and Anita Nair-Hartman. “The emergence of value-based health: How healthcare is using technology to create insights, enhance efficiency, and improve patient outcomes.” IBM Institute for Business Value. November 2019. <http://ibm.co/value-based-health>
- 2 “Study finds U.S. healthcare consumers will switch providers over poor digital experiences.” Cedar. October 2019. https://www.cedar.com/2019/10/09/study-finds-u-s-healthcare-consumers-will-switch-providers-over-poor-digital-experiences/?_lsrc=5e8cebf0-e465-47f4-aaff-3fff9657e9a1
- 3 “Healthcare price transparency and consumer sentiment.” IBM. April 2019. <https://www.ibm.com/downloads/cas/PNJGDQMX>
- 4 Ibid.
- 5 Anil Jain, M.D., Donna Daniel, Ph.D., Heather Fraser, Sanjeev Saravanakumar, and Anita Nair-Hartman. “The emergence of value-based health: How healthcare is using technology to create insights, enhance efficiency, and improve patient outcomes.” IBM Institute for Business Value. November 2019. <http://ibm.co/value-based-health>
- 6 IBM Institute for Business Value 2017 healthcare claims benchmark study.
- 7 IBM Watson Health research.
- 8 IBM Institute for Business Value internal research.

© Copyright IBM Corporation 2019

IBM Corporation
New Orchard Road
Armonk, NY 10504
Produced in the United States of America
December 2019

IBM, the IBM logo, ibm.com and Watson are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at “Copyright and trademark information” at: ibm.com/legal/copytrade.shtml.

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

THE INFORMATION IN THIS DOCUMENT IS PROVIDED “AS IS” WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

This report is intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment. IBM shall not be responsible for any loss whatsoever sustained by any organization or person who relies on this publication.

The data used in this report may be derived from third-party sources and IBM does not independently verify, validate or audit such data. The results from the use of such data are provided on an “as is” basis and IBM makes no representations or warranties, express or implied.

