

AI for Healthcare

Use AI innovations to help people lead healthier lives.

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Summary

Since healthcare leaders face HIPAA compliance regulations, existing technical debt, and siloed systems, they've been slow to adopt AI into their marketing, experience, and care strategies.

Despite the obstacles, AI has limitless potential to improve healthcare experiences and help people lead healthier lives. This Healthcare AI Report showcases achievable, near-term steps that healthcare leaders can take to scale AI impact without losing people's trust.



AI will revolutionize the healthcare industry for the better.

But many people remain skeptical of using this new, powerful technology when it comes to their health.


Currently, within the healthcare sector, there's a shortage of AI understanding and a lack of knowledge of where to start. There are also other competing priorities like addressing worker burnout and turnover. When you combine that with misalignment about impactful small steps vs. disruptive moonshot efforts, it's easy to see why healthcare leaders are waiting to adopt AI.

AI skepticism creates unique challenges for healthcare leaders who are seeking to use new AI technology to enhance people's lives. Diagnosis, which remains difficult for AI, is just one use case, and it's not where AI will make the most impact in the near term.

We believe, at its heart, every healthcare interaction must have a human element. AI should then be used to enhance these interactions, not replace them.

This AI for Healthcare Report showcases achievable, near-term steps that healthcare leaders can take to scale AI impact without being worried about losing people's trust. We examine how healthcare leaders can use AI to make it easier for people to find the right care, improve healthcare experiences with a digital assistant that summarizes complex communication, and streamline the overwhelming insurance process.

Implementing AI will require bold thinking from healthcare leaders. Organizations that adopt AI successfully will be ahead of their competitors.



“60% of Americans said they would be uncomfortable if their healthcare provider relied on AI to diagnose conditions or recommend treatments.”

— PEW RESEARCH CENTER¹

¹ <https://www.pewresearch.org/science/2023/02/22/60-of-americans-would-be-uncomfortable-with-provider-relying-on-ai-in-their-own-health-care/>

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Cheri Marone

DIRECTOR, EXPERIENCE STRATEGY

Cheri is a seasoned strategist with a wealth of knowledge specializing in customer experience across diverse industries, including large manufacturing, retail, automotive, and healthcare. Cheri's understanding of the intricacies within each sector allows her to navigate complex challenges, tailor solutions that align with industry-specific needs, optimize customer journeys, and elevate brand perception. Her dedication to driving excellence in customer experience has contributed significantly to the success of the organizations she collaborates with such as Capgemini, LiquidHub, and THINK Interactive. Cheri has helped create strategies with companies such as Stanford Health Care, The Christ Hospital Cincinnati, Google, Moody's, and Amazon.



Michelle Berryman

EXECUTIVE CREATIVE DIRECTOR

When it comes to great experiences, Michelle believes in the power and elegance of simplicity, that joy is not accidental, and that interactions should be authentic, meaningful, and pleasurable. She strives to make an emotional connection with users by eliciting desire and delight even in routine moments. Michelle has led innovation, strategy, and creative teams at Capgemini, Fahrenheit 212, LiquidHub, and THINK Interactive. She is a Fellow and past president of the Industrial Designers Society of America and was named by the membership as one of the 50 Most Influential Designers of the last 50 years in 2015.



Arun Kumar

EVP, DATA & AI

Arun believes organizations need to combine technology at scale with the power of human insight and empathy to develop meaningful, relevant, and experience-based relationships with constituents. He has led teams for some of the top agencies in the world including Wunderman Thompson and Publicis Sapient. Arun has helped build multi-channel touchpoints and direct-to-consumer strategies for brands like The American Red Cross, Bose, Carnival, Newell Brands, and TD Bank.

What if the care continuum was enhanced by AI?

Use AI to guide people to the correct next steps for care.

Thinking about the care continuum, one of the most common issues is trying to find the right care. Often consumers are trying to figure out what to do next, but given the lack of guidance available, they end up searching for a diagnosis.

This creates a gap for patients seeking care, and in the age of Google, people tend to try and find what illness they might have based on some general symptoms, leading to a self-imposed chronic ailment.

“40.5% of users don’t know what level of medical help they need and this often leads to overcrowded, expensive EDs or untreated illnesses.”

— SYMPTOMATE SURVEY²

Even with this erroneous diagnosis in hand, people are still left not knowing what action to take. They then embark on another journey to try and navigate that part of the equation.

While AI isn’t ready to diagnose, there are important places within the process where it can prove beneficial for both patients and providers. The key is helping people where they are by guiding them to the correct next steps of care.

² <https://infermedica.com/blog/articles/healthcare-optimization-6-areas-that-can-be-improved-with-symptom-checkers>

Help patients understand what kind of help they need.

“40% of people age 18-34 said they would be comfortable with a primary care appointment led by AI.”

— OUTBREAKS NEAR ME SURVEY³

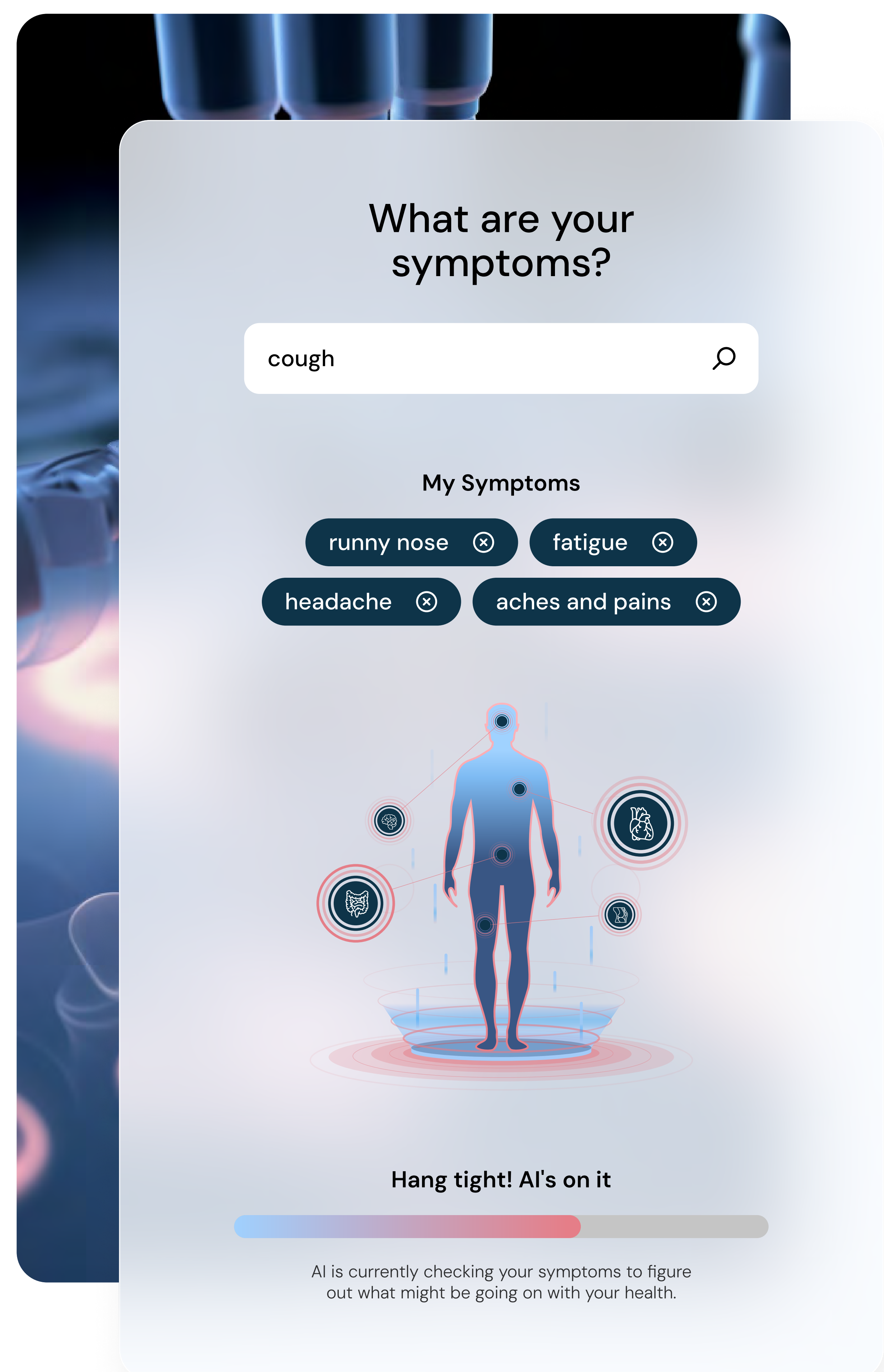
As we think about how AI can enhance the care continuum, an AI symptom checker is one potential implementation. There are several benefits to this over Dr. Google.

When using Google to understand symptoms, the search priority is popular/most common conditions based on analytics and SEO with the goal of producing a most likely specific condition or possible diagnosis. **This type of problem-solving is inaccurate, out of context, and still leaves the user wondering about the right care.**

Using a well-built AI symptom checker keeps patients in the organization’s ecosystem with the goal of recommending a particular type of care (and next step), not diagnosing a user’s ailment. An AI symptom checker could be the entry point for a healthcare system by providing a smooth, navigable experience for finding the right kind of care for a potential patient.

By guiding someone through the process of relaying symptoms, AI can quickly recommend a specific type of care while keeping the decision in the hands of the patient. This creates a positive experience for patients, increasing their likelihood of booking an appointment and returning to the website in the future for more information.

Because the symptom tracker belongs to the healthcare system, data can be tracked to understand how many users click to book an appointment, a direct KPI to the usefulness of the tool.



³ <https://www.medicaleconomics.com/view/survey-finds-mixed-feelings-about-using-ai-in-primary-care>

Help providers assess faster & distribute tasks quicker.

The benefits of an Electronic Health Record (EHR) are improving every day, specifically related to patient usability. However, EHRs place a burden on office staff, and doctors in particular. This has become a real problem that is directly contributing to burnout.



“Median daily physician EHR time ranges from 3.5 to six hours... Physicians can spend half of their total EHR time on clerical and administrative tasks, and another quarter on inbox management.”

— KEVINMD⁴

Currently, Emergency Departments rely on several types of communication to manage the flow of patients. Intake, symptom assessment, the correct order of procedures, available rooms, and who's on duty are all crucial components that must be interconnected and evaluated every moment. This creates a high-stress environment that taxes everyone involved, from nurses and doctors to admin staff to patients.

AI has the potential to streamline many of the healthcare administrative processes to allow providers to focus on the patient rather than mundane tasks. The benefits also include reducing human error and inconsistent decision-making, and the ability to work 24/7.

Additionally, this means AI can offload some of the administrative decision-making, distribute tasks and workflow, and know who is available.

Using AI in healthcare gives providers the ability to collect and analyze data around many tasks and processes. This allows providers and healthcare systems to understand what is working and what is not. With the right reports and analysis, AI can provide ever-growing insights into process improvements.

⁴ [*https://www.kevinmd.com/2022/04/how-much-time-do-physicians-spend-in-the-ehr.html](https://www.kevinmd.com/2022/04/how-much-time-do-physicians-spend-in-the-ehr.html)

How to put AI to work for patients:

Using AI to improve the care continuum for patients requires a rigorous, multi-step approach. Here's what it takes:

01. Understand what is happening in the AI for healthcare marketplace. This will help you navigate the lay of the land and get an idea of what it will take to implement a tool such as this.
02. Perform an internal technology audit to determine what is needed to close any gaps in data collection and aggregation.
03. Conduct stakeholder interviews with people who will be using the provider end (doctors, nurses, office staff, IT) of the tool will help articulate the pain points that already exist, what is needed to make the process(es) better, what is already working, and align on internal goals and expectations.
04. Have conversations with patients, patient advisory boards, and website users to understand what the customers' needs are, what pain points they have, and what resonates with them. These conversations can be conducted through site intercepts and speaking with committees.
05. Begin building a new experience by creating user stories and user flows to flesh out the journey the customer will take, how the needed information will flow through the systems, and what data can and can't be tracked to consistently monitor and improve the experience over time.

How to put AI to work for providers:

When using AI as a coordination tool, connecting data sources is crucial. This means appointment scheduling, clinic operations, plus many other systems must all be aligned for AI to make meaningful administrative decisions. Make sure to take these steps to start using AI to improve provider experiences.

01. Understand the issues that actually exist in the specific healthcare system. By doing this, the solution will solve the real problems, not predetermined, out-of-the-box issues that may make only minimal improvements. This requires interviewing providers, office staff, and IT to understand the current state of business and technology.
02. Develop a roadmap to visualize phases, timelines, and dependencies. A roadmap will boost internal buy-in from your stakeholders and users and increase the likelihood of a budget being approved.
03. As the AI tool is designed and built, releasing an MVP in a smaller specialty or practice will be more efficient, as unexpected issues will be contained and manageable before a larger release.

What if Physicians had an AI Assistant?

Use AI to assist in solving a systemic healthcare problem.

When patients are in the hospital, the system challenges caregivers, as well as patients. Doctors begin their rounds to check on patients as early as 5:00 a.m. and their rounds may last several hours.

As a caregiver and patient advocate, you must be present when the doctor arrives to hear the information and updates from the doctor, to share information and concerns about the patient, and to ask relevant questions—particularly if the patient is unable to advocate for themselves.

If the caregiver isn't in the room when the doctor arrives, it may be 8-12 hours before the next opportunity to meet with the doctor. There isn't a set time for these encounters. They are fluid and happen based on the doctor's schedule, the nature of what is experienced during rounds, anticipation of test results, etc. The result is that patients and caregivers wait, often for hours, afraid to leave even for a cup of coffee.

Even when caretakers don't miss the meeting, it may be difficult to remember or decipher exactly what the doctor said. The doctor visits during rounds tend to be brief and the information may be complex with names of conditions, tests, therapies, test read-outs, numeric data or ranges, etc. It can be hard for patients or caregivers to think on their feet to ask the right questions or the next logical question. Individual ability to retain the information is another hurdle that is difficult to overcome.

These brief encounters are often emotional rollercoasters for patients and caregivers too.

So many factors contribute to the challenge of hearing the information, processing it, and responding to it. Even in the best of circumstances, the exchange of information is far less than ideal. Everyone involved in this exchange implicitly understands this.

Use AI to record, transcribe, format, and augment.

AI can dramatically transform the current dynamic between caregivers and patients. An AI Healthcare Assistant can record, transcribe, format, and augment these encounters in ways that benefit all parties.



Imagine that after a brief meeting, the doctor receives an editable report containing all of the relevant information regarding the diagnosis, test results, outstanding results, prescribed tests, therapies, and medications along with a curated list of suggested reading materials for the patient and caregiver.

The doctor can approve the report or make modifications before sending it to the patient portal and/or having it printed and delivered to the patient's room.

This is a simple, powerful, and easily implemented use of AI. It is patient-centric, supplements the existing EHR, and provides a useful resource for the patient and the caregivers—thus preventing (or at least lessening) interference and miscommunication from “Dr. Google.”

An AI Healthcare Assistant would allow patients and caregivers to consume information about the diagnosis and treatment, explore options based on the curated content provided by the doctor (with help from the AI Healthcare Assistant), and formulate their questions or concerns.

The AI Healthcare Assistant may even be able to answer some questions in real time. Additional answers may come asynchronously from the doctor or other members of the care team before the next set of patient rounds.

A more advanced version of the AI Healthcare Assistant might also analyze the conversation between the doctor and patient/caregiver, the existing data from tests, and make additional recommendations for the doctor to consider via a clinical decision support tool. From this first step, the evolution of possibilities and the increased value exchange for all parties is nearly limitless.

As envisioned here, even the most basic implementation of the AI Healthcare Assistant will improve the information exchange between the care team and the patient, eliminating confusion and, quite literally, keeping everyone on the same page.

Creating an AI Healthcare Assistant

In the best of circumstances, the care journey is complex, with many interconnected entities, systems, processes, data sources, and technologies. The people who interact with the care journey at each point, moment, and intersection add additional complexity.

An ideal starting point for the creation of an AI Healthcare Assistant is through a service blueprint. This will allow an analysis of the stakeholder journeys (patients, caregivers, doctors, hospital staff, etc.) underlying business processes, data collection, as well as the technology that connects and powers everything.

Once all of these interconnected parts are mapped, it's much easier to see how and where an AI Healthcare Assistant can improve process efficiency, connect disparate information sources, and expedite an accurate exchange of information for all vested entities. A deeper understanding of the emotional journeys of the stakeholders will also yield insight into issues and moments that can be made easier and less stressful.

USE CASES FOR AI ASSISTANT

Assess and understand the frustrations and challenges of patients, caregivers, doctors, hospital staff, etc.

1. [P/C] Waiting. Endless waiting. For visits from doctors. For tests and test results.
2. [P/C] Lack of visibility into what happens next, what are we waiting for?
3. [P/C] Inability to plan anything
4. [Staff] Repetitive questions from P/C and inability to provide answers
5. [Staff] Lack of visibility into schedules for doctors, labs, etc.
6. [Drs] Heavy caseloads
7. [Drs] Dynamic and fluid schedules based on patient situations, availability of test results/new information, etc.
8. [Drs] Clear communications with P/C + expectation setting

Identification of specific areas and/or use cases where AI can alleviate problems and/or expedite service and improve clarity of context and communications

Curation of relevant content and/or content source(s) for the AI assistant

Identification of requirements for HIPAA compliance

Roadmap for pilot/alpha/beta testing based on specific focus areas (e.g. clinical area like cardiology or a specific disease/condition)

What if AI made health insurance easier?

Use AI to automate complex insurance processes to reduce time and costs.

Like many healthcare entities, insurance is rife with complex processes, documentation, and analysis. This creates an environment of tedious workflows, hard-to-understand language, and reliance on very specific coding. As a result, long wait times for claims approvals, higher fraud, and inaccurate historical data are the norm.

Currently, health insurance companies are implementing AI to help with these internal processes to improve time and costs, but that won't happen immediately and comes with its own hurdles.

We're still in the nascent stages of implementing AI, particularly in healthcare, so oversight and governance are extremely crucial in making sure these assessments are correct and follow the rules set forth in the policies consistently—potentially with a human-led set of checks and balances.

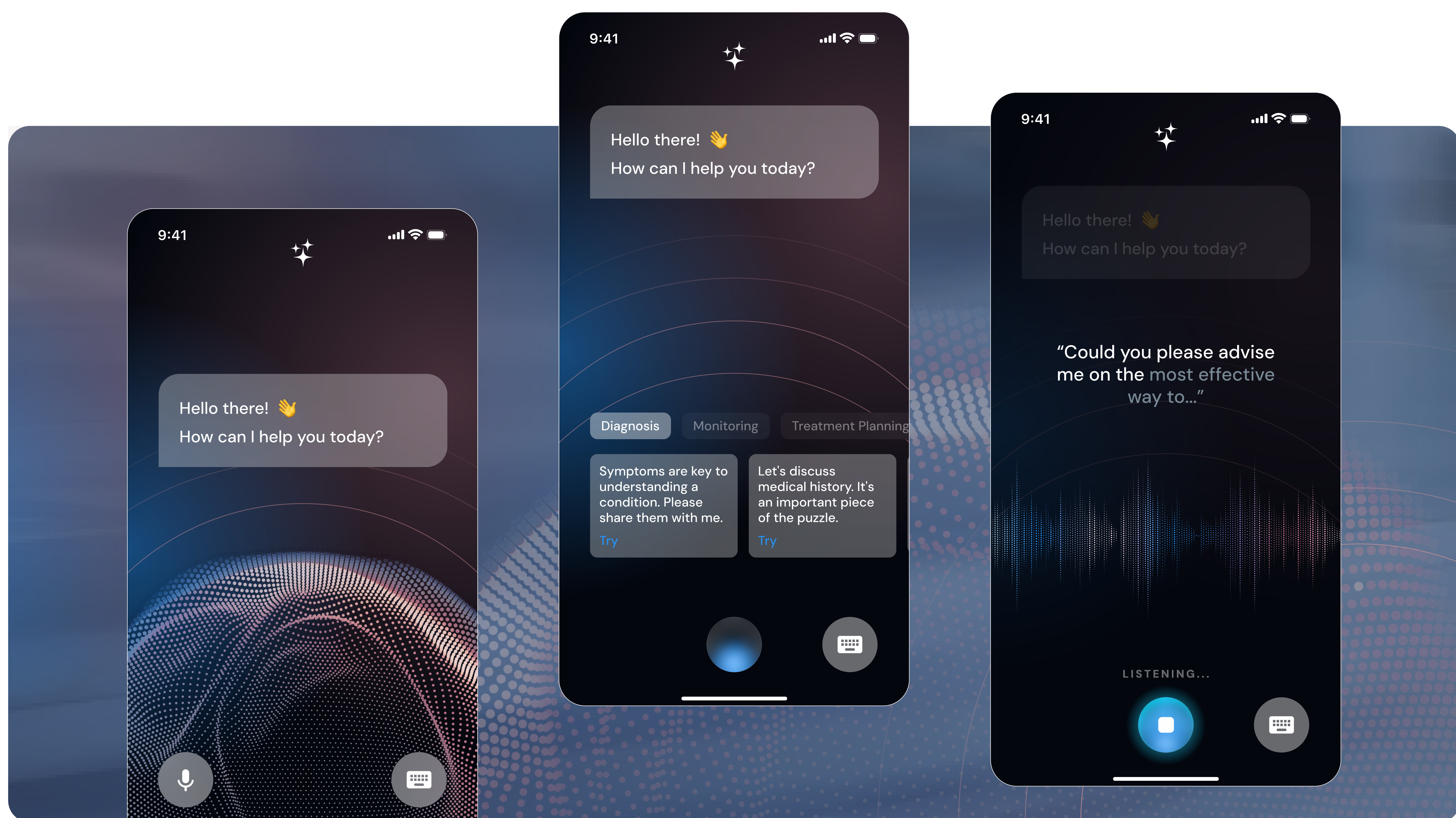
In addition to improving claims processing time and accuracy, AI can benefit the patient/payor relationship in other ways. Identifying potential individual healthcare issues based on larger trends in data can often help mitigate serious problems down the road by guiding at-risk patients to preventative behaviors and actions now. Getting ahead of possible worsening conditions would reduce costs and improve outcomes.

Helping patients understand what is/is not covered, claim requirements, processes, and nuances of their health plan is another big hurdle for the insurance industry. Although chatbots are beginning to be deployed, they are met with some animosity given the varying degrees of implementation that users have already experienced.

Preparing AI for Health Insurance

To have a best-in-class AI experience with health insurance, a clear understanding of individual policies and regulations, basically what is covered and what is not, must be in place. This is the critical foundation of a successful implementation.

The data must be up-to-date, and accurate and there must be a holistic view of the patient and policy. Then, AI can make suggestions for what decisions could be made. These suggestions are then verified by experts before approval/denial. A strong governance and oversight process must be in place to ensure assessment errors are caught early and often, in order to retrain the tool.



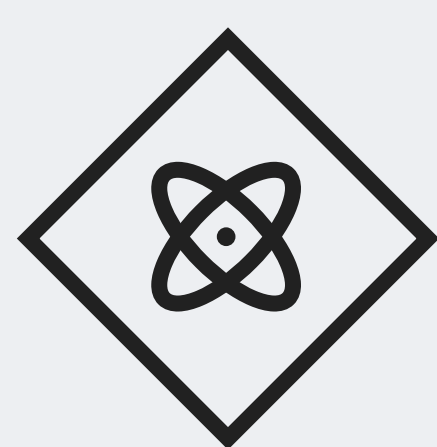
Example Healthcare AI Assistant App

Helping customers clearly understand procedures and policies would go a long way in customer satisfaction. Deciphering the legal and technical language in a policy can be quite challenging even for the savvy reader. Having AI translate this into simple, everyday language that everyone can understand could increase compliance and decrease inquiries allowing call center agents to focus on more complex issues.

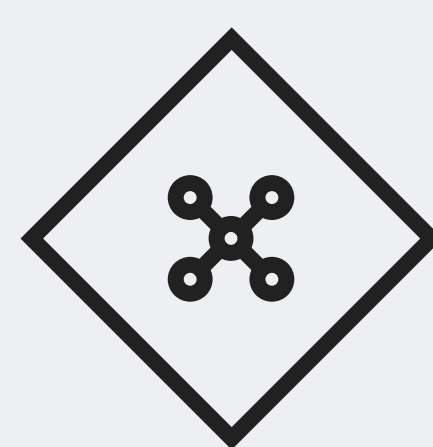
One of the most impactful places that AI could help the healthcare industry is in process automation. Moving information through workflows, and shifting the paperwork burden from people to systems will allow employees to focus on more complicated developments and it will allow patients to get the right care faster, improving costs and outcomes at the same time.

Making AI Happen

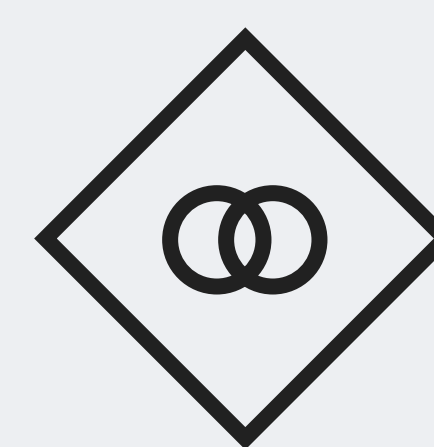
For AI to be a powerful, differentiating tool, it needs to be bespoke and solve real business problems unique to each company.



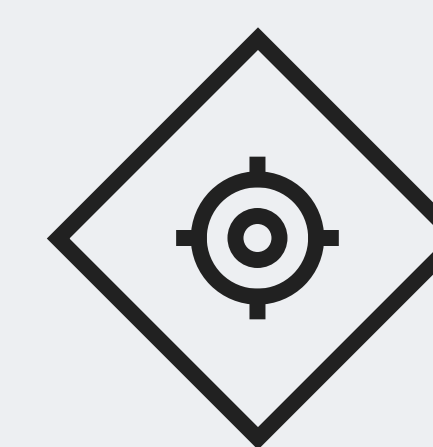
ACCESS CLEAN
HISTORICAL DATA



ENSURE A BUSINESS
TECHNOLOGY
PARTNERSHIP



IMPLEMENT ETHICS AND
COMPLIANCE
OVERSIGHT



DEVELOP CLEAR
SUCCESS METRICS

Implementing an out-of-the-box solution could be very costly and only have minimal impact.

To have a tool that solves specific problems, the problems need to be defined. This is done with thorough stakeholder interviews, patient interviews, internal process/technology assessments, and gap analyses.

As the AI tool is being developed, identifying the components of a pilot release is critical. Developing an MVP will allow the tool to be real-world tested in a smaller, contained environment that can be iterated and adjusted. Allowing for mistakes and iterations will ultimately produce an AI tool that will have meaningful, scalable results.

Paths to AI Healthcare Success

Follow these guidelines when integrating AI into your healthcare tech stack.

Access clean historical data

Successful AI projects start (and sometimes die) with access to clean historical data. Data must be relevant, actionable, and compatible with the ML algorithms for the specific use cases. For healthcare, there is the additional (and critical) component of HIPAA compliance. Patient data privacy must be maintained above all else. A dataset that satisfies the above criteria would be the right place to start for any AI use case.

Ensure a business technology partnership

Business stakeholders need to partner closely with AI technologists to ensure that the outcome of the engagement is relevant and usable. Technology teams can help assess the right algorithms to use for the appropriate use case and decide on custom vs. off-the-shelf algorithms. They can also help develop the right infrastructure to build, train, and deploy the models in production. Business teams must provide feedback every step of the way to ensure that the final output is usable and valuable and drives real patient outcomes. An AI tech team operating independently of business guidance is a surefire recipe for disaster.

Implement ethics and compliance oversight

While HIPAA compliance is critical, it's not the only consideration while deploying AI in healthcare. Given the complex nature of the use cases involving patient healthcare decisions, significant oversight is needed to ensure that the algorithms do not run amok. A good balance would be one where the algorithms simplify the decision-making process by ingesting all the variables and presenting a series of options to the healthcare provider, with the final decision resting in the hands of a human. This will ensure the realization of automation efficiencies but not at the cost of ethical patient outcomes.

Develop clear success metrics

AI engagement needs clear success metrics. It is critical to align key stakeholders at the start of the engagement to agree on what success looks like, and the time frame over which it will be tracked. An approach we have seen succeeding with our clients is to frame initial engagements as time-bound pilot programs. It allows stakeholders to observe success (or failure) of the idea in a 'test-like' environment without significant business pressures. Successful pilots can then be merchandised to the larger organization for rollout.

Let's Talk About AI

Getting AI right for healthcare requires a custom approach that integrates strategy, data, design, and technology.

The solutions showcased in this report require significant planning and strategy. Hero Digital can help you assess your readiness in all of the above areas which can help ensure the success of your AI endeavors.

Hero Digital can help set you up for success by utilizing the data management practices we've outlined in this report and can help guide you step by step. When the opportunity arises, you can capitalize on AI applications and get ahead of the competition.

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