# Evaluating the Role of AI and Identifying Use-Cases in U.S. Managed Care Organizations

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**Abstract:** *In the United States healthcare system, the payer stakeholder group ensures drug reimbursement coverage and access for patients. Historically, payers do not often initiate the adoption of new systems, processes, and technology. In an age where artificial intelligence (AI) utilization is rapidly increasing across industries and across the overall healthcare system, it is important to understand the implications that AI may have within payer organizations in areas such as healthcare data processing, treatment protocol identification, prior authorization reviews, and other functions. This research therefore explores perceptions of AI familiarity, usefulness, and security concerns across 63 payers and 103 physicians to determine the likelihood of AI implementation within managed care organizations. Based on the results discussed in this research study, payers report familiarity with AI tools and describe whether they are open to utilization and incorporation into current systems to reduce administrative burden across departments, but serious concern exists on the security of AI tools with sensitive payer, physician, and patient data. As a point of future discussion, it will be important for researchers in this space to explore utilization of AI tools, its role in streamlining time-consuming processes, and creating opportunities for better care and optimal patient results. Further research will support greater understanding for appropriate AI application and use within managed care organization to create smooth access to care and therapies for patients.*

**Keywords:** Artificial intelligence, AI Tools, ChatGPT, managed care, patient access, claims data, data integration

## 1. Introduction

Artificial intelligence (AI) technology has taken the world by storm over the past 18 months. The potential for this technology can be seen across industries, especially in healthcare, from research and development to patient access and care. With the boom in AI and its ability to streamline processes and ease administrative burden, many institutions and key healthcare stakeholder groups are looking to explore how AI can be adopted to create more efficiencies within their own organization.

With the novel capabilities seen with AI there has been genuine excitement for the capabilities within the life sciences. Scientists and researchers are pushing to include AI to enhance and accelerate their research, whether it be to generate new hypotheses, decrease burden in the experimental design and processes, or interpret large data sets [1],[2]. Scientists are also exploring how AI technology can circumvent limitations within the research and development settings. [3] Researchers are looking to AI technology to support and push their experimental designs to test and solve problems that were previously impossible to support before the inclusion of AI. [4] With new computational codes and different methodologies to sort through data, incorporating AI is allowing for novel methodologies and systems that are paving the way toward life science innovation.

In conjunction with life science research, AI incorporation in pharmaceutical research and development has shown promise from boosting productivity and efficiency across key drug development phases to improving patient outcomes. In early drug development phases, AI utilization can be heavily focused in application in clinical trial optimization, and in later phases, can be beneficial in the pre-launch planning exercises, tag diagnoses or even in disease identification. [5] Pharmaceutical companies are starting to observe how

machine learning and cutting-edge lab techniques can optimize pipeline research and discovery. [6] In all phases of the drug pipeline, AI utilization is geared toward improving revenue for pharmaceutical manufacturers, improving access for patients, instigating earlier treatment protocols for patients, and supporting the quality of patient care.

The healthcare industry overall has much to gain with the incorporation of AI as healthcare systems within the United States are focused on a multitude of key performance indicators such as improving the patient's experience, enhancing the caregiver experience and the combatting the rising costs of healthcare by transforming the models of healthcare delivery, all which can be aided by the inclusion of AI tools. [6] The US healthcare system is complex and relies on different key players to adapt and shift to ensure that clinical care, and operational and pharmaceutical coverage all convene to patients support . When looking across the spectrum, it is imperative to look across the multitude of stakeholders to determine how AI can be best utilized to alleviate burden among each group.

Stakeholders, such as physicians, patients, pharmaceutical manufacturers, all have very different applications and uses for AI and Generative Pre-trained Transformer (GPT) tools. AI has proven capabilities in utilizing the patient data and clinical notes to synthesize and interpret data to provide early diagnosis information and appropriate treatment protocols for patients, along with assisting with administrative tasks that create additional burden for the physician's team and practice.[7] When considering the patient stakeholder group, AI technology is helping to improve overall health outcomes by identifying appropriate patients for pharmaceutical therapies and ensuring patient adherence for therapies. [8] It is with these groups where AI implementation could encourage more efficient processes, by decreasing administrative burden

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or synthesizing large data sets, and as the healthcare sector identifies areas in the industry that are typically slow to innovate, strong use cases to diminish burdensome processes could push the needle forward. [9]

The healthcare entity largely untouched by AI and ChatGPT is the payer stakeholder group. Payers are managed care organizations (Commercial) and government organizations (Medicare) that ensure drug reimbursement and coverage for patients. Payers utilize different techniques to ensure that the appropriate access is leveraged, from prior authorizations and step edits to drug formularies. Historically, payers are slow to adopt new technology and processes as is evidenced by their conservative uptake of innovative contracting with pharmaceutical manufacturers and adoption of vertical integration. [10] Given the importance of AI in the U.S. healthcare system and its ability to revolutionize processes, it is important to understand how AI and GPT tools can be leveraged to assist payers. AI utilization in this stakeholder group has largely been unexplored and the proceeding research will highlight where opportunities and challenges for AI lie from the payers' perspective.

This research explores how AI familiarity, usefulness, and concerns with AI security will impact the likelihood of AI implementation for payers as a part of managed care and government organizations.

## 2. Methodology

### 2.1 Survey Design

The survey designed contained questions concerning familiarity, usefulness, and concerns with ChatGPT and other AI tools. Familiarity was assessed with a survey question asking for familiarity with ChatGPT and AI tools on a scale. Responses were limited to a Likert-scale using the following: not at all familiar (1), slightly unfamiliar (2), moderately familiar (3), somewhat familiar (4), very familiar (5).

To assess potential AI implementation, the question assessed whether discussions and implementation have occurred at the organization or not. Responses were limited to the following four responses, three representing a variation of 'yes' and one representing the 'no' variable.

Usefulness was assessed in a survey consisting of the following categories: data retrieval, clinical algorithms, prior authorization review, claims processing, management criteria for drugs, general organization operations, P&T review, drug coverage decisions, benefit verifications, clinical notes, clinical algorithms, and clinical diagnoses. Responses were limited to a Likert-scale using the following: not at all useful (1), minimal useful (2), somewhat useful (3), highly useful (4), extremely useful (5).

Concerns with ChatGPT and AI tools were determined via a question with the following categories: data privacy, data breach, data inaccuracy, data validity, data storage, and data security. Responses were limited to a Likert-scale using the following: not at all concerned (1), slightly concerned (2), moderately concerned (3), very concerned (4), highly concerned (5).

A survey request was sent through Question Pro to Zitter Insights panel which consists of payers, physicians and practice managers located throughout the United States. [11] To obtain an even distribution of organization types, payers and physicians' eligibility was determined by their organization type, role, and region.



**Figure 1:** Payer Sample Descriptors – Commercial



**Figure 2:** Payer Sample Descriptors – Medicare



**Figure 3:** Physician Sample Descriptors

### 2.2 Demographics

The sample for this survey consisted of 63 payers and 103 physicians. Among the payer respondents, 35 participants represented 117.7 million commercial lives, while the remaining payer respondents represented 43.6 million lives under the Medicare segment. The research survey was conducted in Q3 2023.

Eighty three percent (83%) of commercial payer respondents identified as Pharmacy Directors or Clinical Pharmacists and 17% identified as Medical Directors or Chief Medical Officers. Commercial payer respondents represented different organizations: 26% of respondents represented Large National health plans, 29% represented Blues Affiliate health plans, 23% represented independent health plans and 23% represented pharmacy benefit management firms (PBMs). By

region within the United States (US), 46% identified their coverage and reach as national; 14% of payer represented the Northeast states in the US (CT, DE, MA, ME, NH, NJ, NY, OH, PA, RI, VT); 11% represented the Pacific and Northwest regions (AK, CA, HI, ID, OR, WA); 11% represented the South region of the US (AL, AR, DC, FL, GA, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV); 9% identified coverage as multi-regional; and 9% represented the Midwest region (IA, IL, IN, KS, KY, MI, MN, MO, NE, WI).

Pharmacy directors and clinical pharmacists accounted for 79% of the Medicare payer respondents and medical directors and chief medical officers accounted for the remaining 21%. Within the Medicare payer respondent group, 29% represented an independent plan, 25% a Large National plan, 25% a pharmacy benefit management firm (PBMs), and 21% a Blues affiliate plan. In terms of geographic area covered, 46% of Medicare payers identified coverage reach as national; 18% of payer cover within the Northeast (CT, DE, MA, ME, NH, NJ, NY, OH, PA, RI, VT); 14% provide coverage in the Pacific & Northwest (AK, CA, HI, ID, OR, WA); 11% cover in the Midwest (IA, IL, IN, KS, KY, MI, MN, MO, NE, WI); 7% provide coverage in the South (AL, AR, DC, FL, GA, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV); and 4% identify their coverage reach as multi-regional.

Among sampled physicians, 48% represented small practices (one to five physicians), 34% represented large practices (over ten physicians), and 18% represented mid-size practices (six to nine physicians). In addition to this physician sample, 29 physician respondents represented Integrated Delivery Networks (IDNs) which are defined as health systems offering a comprehensive array of clinical services with a high degree of control over physician behavior.

Forty-four percent (44%) of the sample physicians were affiliated with an independent practice as a partner; 33% as a health system employee of a hospital owned health system; 10% as a non-partner at an independent practice; 6% as a practice employee of a hospital owned health system; 4% as an employee of a payer-owned health system; 3% as employee of an independent hospital; and 1% as a representative of a practice affiliation titled "Other". Geographically, 34% of physicians practiced within the Northeast ((CT, DE, MA, ME, NH, NJ, NY, OH, PA, RI, VT); 28% within the South (AL, AR, DC, FL, GA, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV); 20% within the Midwest (IA, IL, IN, KS, KY, MI, MN, MO, NE, WI); 12% within the Pacific & Northwest (AK, CA, HI, ID, OR, WA); and 6% within the Mountain region (AZ, CO, MT, ND, NM, NV, SD, UT, WY).

**2.3 Data Analysis**

Summary data was collected through Question Pro and exported to an Excel spreadsheet. Responses were then collated based on payer and physician groups. Payer lives were calculated based on covered lives provided by each respondent. [12]

# 3. Results

**3.1 Managed Care Organization Familiarity with AI Tools**

Payers exhibit greater familiarity with ChatGPT and AI tools compared to physicians.
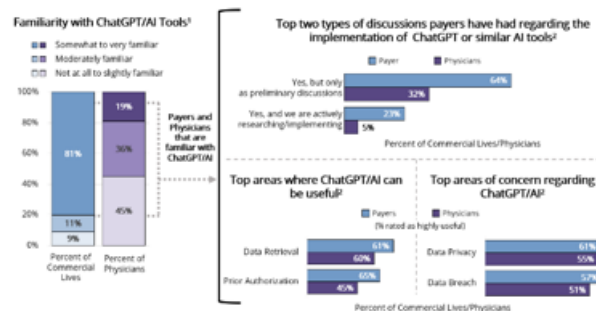


**Figure 4:** Familiarity and Top Areas of Discussion for ChatGPT and AI Tools

In the survey, 92% of payers rated at least a moderate familiarity with AI tools and ChatGPT compared to the 55% of physicians that rated on the same scale.

Consistent with the findings regarding the familiarity of the ChatGPT and AI Tools, 64% of payers are more proactive and involved in having preliminary discussions on ways to actively research and implement AI tools within their organizations. Thirty-two percent (32%) of surveyed physicians indicate that are initiating discussions about AI technology use within the practice.

When payers and physicians consider usefulness of ChatGPT and AI tools, 61% of payers and 60% of physicians agree that data retrieval is an area of principal usefulness. Additionally, 65% of payers and 45% of physicians rate high utility and usefulness for using AI to review prior authorization criteria. Concern exists, especially in terms of data security, for a majority of respondents. Data privacy is a highly rated concern for 61% of payers and 55% of physicians. In the same sample, 57% of payers and 51% of physicians also rated concern over the potential for data breaches with the utilization of AI technology within their organizations and practices.

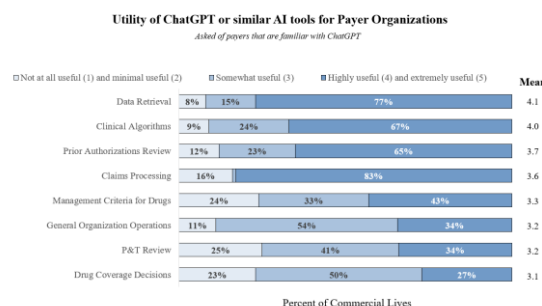**3.2 Use Cases of AI Tools for Payers**



**Figure 5:** Payer Utility Ratings for ChatGPT and AI Tools

Among payers that highlighted familiarity with AI tools and ChatGPT, payers indicated the usefulness of AI technology across different scenarios and processes within the organization.

Payers representing 88% of commercial lives cited ChatGPT or similar AI tools as highly useful or extremely useful for

claims processing, closely followed by 77% of commercial lives for strong use case in data retrieval. Payers representing 67% of commercial lives cited high or extreme usefulness for ChatGPT or AI in clinical algorithms, closely followed by payers covering 65% of commercial lives rating high or extreme usefulness for these tools in prior authorizations review.

In contrast, payers representing 34% of commercial lives indicated high to extreme usefulness of ChatGPT and AI tools for general organization operations, whereas 54% of commercial lives indicated that ChatGPT and AI tools would only be somewhat useful. Thirty-four percent (34%) of commercial lives indicated high to extreme usefulness for P&T review, and 66% cited minimal to moderate usefulness for P&T review.
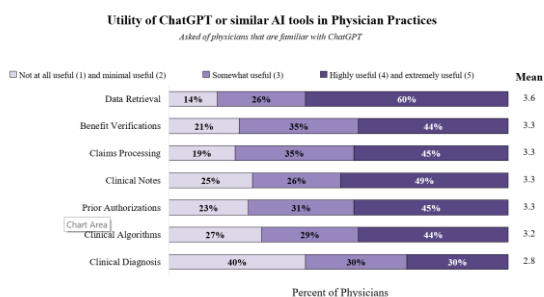
### 3.3 Use Cases of AI Tools for Physicians



**Figure 6:** Physician Utility Ratings for ChatGPT and AI Tools

While this research focused on payers, physician responses were acquired to better understand the complementary nature of the stakeholder group when compared to the payer sample. Utility for ChatGPT and other AI tools was primarily concentrated in scenarios that are time-consuming and administratively burdensome.

Sixty percent (60%) of physicians cited high to extremely high usefulness of ChatGPT and AI tools in data retrieval and only 14% minimal usefulness. Forty-nine percent (49%) of physicians perceived high to extremely high usefulness in activities involved with clinical notes closely followed by 45% citing high to extremely high usefulness for claims processing and prior authorization processing. Physicians also cited usefulness in benefit verifications and in clinical algorithms, with 44% rating high to extremely high usefulness.

## 4. Discussion, Conclusions, and Future Research

Utilization of AI technology is constantly evolving and improving within healthcare as can be seen among physicians and within the patient stakeholder group. While MCOs are slow to implement, there seems to be an understanding of the importance of AI, and therefore, this might facilitate buy-in and operationalized processes in the future. This research was focused on understanding payer perceptions of AI to monitor the overall awareness and better understand the opportunities that lie ahead for incorporating AI-based tools into MCO processes.

In terms of clinical diagnoses, physicians rated across the spread of no usefulness to extreme usefulness, with 40% of physicians noting no to minimum usefulness, 30% moderate usefulness, and 30% high to extreme usefulness.
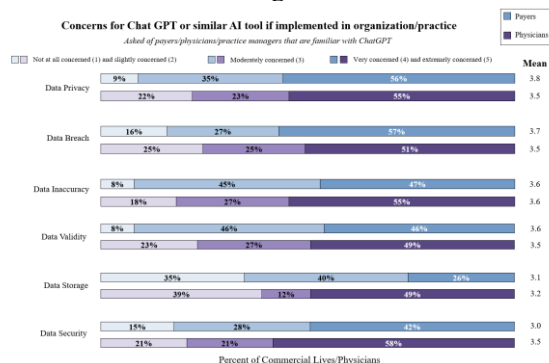
### 3.4 Concerns and Challenges with AI Tools



**Figure 7:** Concerns associated with Implementation ChatGPT and AI Tools

According to payers, the most concerning areas involved with use of ChatGPT and other AI tools exist around the utilization of data.

Of highest concern for payers, 57% of commercial lives are very to extremely concerned about a data breach, closely followed by 56% of payers expressing high concern over data privacy. Fifty-eight percent (58%) of physicians rated very high to extremely high concern over data security, and 55% reported very high to extremely high concern for data privacy and data inaccuracy. Compared to physicians, payers rated high concern at a lower percent for data security, with only 42% of payers rating 4 and 5 on the concern scale.

Payers show moderate concern over data inaccuracy (45% of lives and data validity (46% of lives ) compared to physicians who rated higher concern at 47% and 46%, respectively. Payers are also concerned about data validity, as 46% of payers rated moderate concern.

Both payers and physicians rated lowest for concerns with data storage, with 35% of payers and 39% of physicians rating no to slight concern, 40% of payers and 12% of physicians rating moderate concern, and 26% of payers and 49% of physicians rating high to extreme concern.

From a utilization and integration perspective, there is significant untapped potential within AI technology to assist and improve processes and systems throughout the different MCOs. Early indicators suggest that there is clear utility for AI in claims data processing, detecting appropriate treatment protocol, reducing administrative burden, and data integration.

Day-to-day, payers are working with large claims data sets, obtained through their associated specialty pharmacies, that contain the potential to identify useful trend that often goes undetected. [13] AI utilization for the review and analysis of claims data may help to identify efficient treatment patterns

by both synthesizing available claims data and tracking algorithms and clinical guidelines to build payer-focused clinical pathways that can help to provide patients with early diagnoses and better outcomes.

Similarly, the prior authorization process consists of several burdensome steps for the payers to manage. [14] Due to the volume of prior authorization requests that payers receive, automation and streamlined reviews through AI tools will work to alleviate administrative burden.

Across the three different stakeholder groups, payers, physicians, and patients, the opportunities for AI have varied areas of focus, but there is a clear opportunity for data integration to create efficiency within the healthcare system. Looking beyond just the capabilities of AI in claims data processing, incorporating other real world data assets such as EMR data, lab data, physician office data, and more can create viable opportunities to smooth access to therapy and creating valuable care and access for patients.

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