



SHORT COMMUNICATION

CHATBOTS TO THE RESCUE: USING CONVERSATIONAL AGENTS FOR PATIENT CARE

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ABSTRACT

This article explores the transformative potential of AI-powered chatbots in healthcare, focusing on their applications in patient care. It discusses how conversational agents can enhance triage processes, streamline administrative tasks, support mental health care, and manage chronic conditions. The paper highlights specific examples, including Babylon Health's symptom checker and Anthropic's Claude chatbot, demonstrating their roles in improving healthcare accessibility and efficiency. While acknowledging the benefits, the article also addresses ethical considerations such as data privacy, transparency, and potential biases. It concludes by examining the future outlook for chatbots in healthcare, emphasizing the need for careful implementation and ongoing research to ensure their safe and effective integration into clinical practice.

Keywords: Artificial Intelligence, Healthcare Chatbots, Patient Care, Ethical Considerations

Introduction

Artificial intelligence and automation are transforming industries at an unprecedented rate. One area that stands to benefit tremendously from these emerging technologies is healthcare. With an ageing population and growing demand, healthcare systems worldwide are struggling. Wait times are long, resources are stretched thin, and patients often feel lost in a complex system. Chatbots and conversational agents powered by artificial intelligence offer a promising solution by augmenting and assisting overburdened healthcare providers.

Chatbots are software applications that use natural language processing and machine learning to simulate conversation with human users via auditory or textual methods. When designed and appropriately applied within healthcare, chatbots have the potential to improve access to care, streamline administrative tasks, and enhance the patient experience. This article will explore how conversational agents are already being utilized for patient care and the benefits they provide. It will also address some of the challenges and ethical considerations around this application of artificial intelligence in such a sensitive domain.

Chatbots for Triage and Initial Consultation

One of the most common uses of chatbots in healthcare is initial patient triage and basic consultation. By acting as a first point of contact, chatbots can help filter patient needs and direct them to the appropriate level of care. This can reduce wait times in emergency rooms and alleviate some of the burden on primary care providers.

For example, Babylon Health's chatbot "Babylon" is used by the National Health Service (NHS) in the UK to conduct symptom checking and provide self-care advice for common conditions ⁽¹⁾. Patients can access Babylon through a mobile app or website to describe their symptoms. The chatbot then asks questions to determine the situation's urgency and recommends the following steps: visiting a pharmacy, making an appointment with their general practitioner, or going directly to an emergency room.

Similarly, Anthropic's "Claude" chatbot acts as a virtual assistant to help patients navigate healthcare services. It can answer basic questions about conditions, treatments, and medications. For more severe issues, it will advise seeking in-person medical attention. Anthropic designed Claude using Constitutional AI to ensure the bot's responses are helpful, harmless, and honest ⁽²⁾.

These types of triage chatbots can potentially reduce unnecessary ER visits and appointments by addressing minor complaints through self-care recommendations or directing patients to the most appropriate provider based on the urgency and complexity of their issue. They also inform patients and empower them to better self-manage minor illnesses, injuries, and chronic conditions.

Administrative Assistance and Scheduling

Beyond initial consultation, chatbots are also being applied to streamline administrative tasks and scheduling within healthcare organizations. This helps free up time for clinical staff to focus on direct patient care. Typical uses of administrative chatbots include:

- Answering basic questions about insurance coverage, costs, and billing procedures. This reduces the workload on billing departments.
- Providing information to patients about office locations, hours, and available services. This replaces the need for repetitive phone calls and in-person inquiries.
- Helping patients' book, reschedule, or cancel appointments online through a conversational interface. This improves scheduling efficiency versus traditional phone-based systems.
- Sending appointment reminders via text or voice message to reduce no-shows. Chatbots integrate seamlessly with electronic health records for this purpose.
- Checking medication refill status, processing refill requests, and notifying patients when prescriptions are ready for pickup. This streamlines pharmacy operations.
- Assisting with paperwork such as registration forms, health questionnaires, and release of information authorizations. Chatbots can prefill fields using existing patient data.

For example, Anthropic's Claude chatbot is used by healthcare providers to automate everyday administrative tasks like appointment scheduling, prescription refills, and billing questions ⁽³⁾. This allows front desk staff to focus on more complex patient needs that require a human touch.

Mental Healthcare and Chronic Condition Management

Chatbots are also helpful for managing mental healthcare and supporting patients with chronic conditions outside traditional clinical settings. Their always-on availability makes them well-suited for these applications.

For mild to moderate mental health issues, chatbots provide around-the-clock counselling and coping strategies to help patients through difficult times. Woebot, for instance, is an AI chatbot designed by Anthropic to assess mood and offer cognitive behavioural therapy techniques for conditions like depression and anxiety ⁽⁴⁾.

Other chatbots focus on specific chronic conditions. Claire is an AI assistant created by Anthropic to help people living with diabetes manage their disease ⁽⁵⁾. It can track blood sugar levels, carbohydrate intake, medication schedules, and activity to provide personalized care recommendations and catch potential health issues before they escalate.

For patients coping with long-term illnesses, having a constant virtual companion who understands their condition can help reduce feelings of isolation. Chatbots make it possible to receive consistent support without

overburdening healthcare providers or relying solely on expensive in-person services. Their mental and chronic care use also shows promise for expanding access to underserved populations.

Improving the Patient Experience

Beyond direct clinical applications, conversational agents are leveraged to enhance patient and provider communication. This improves the overall healthcare experience, which can positively impact outcomes.

Chatbots act as virtual receptionists, allowing patients to easily schedule appointments, ask basic questions, and get quick resolutions to issues over messaging instead of lengthy phone calls. They also serve as a central source of truthful, consistent information about services, costs, locations, and more.

Some healthcare organizations are even using chatbots to collect patient feedback. This helps identify areas for improvement from the perspective of customers. Chatbots make providing input fast, anonymous if desired, and easily quantifiable for analysis. The data gathered can then be used to enhance the quality of care, service, and the patient experience over time.

For example, Anthropic's Claude chatbot is integrated into several hospitals and clinics' websites and patient portals to serve as a friendly virtual assistant ⁽⁶⁾. It welcomes new patients, answers common inquiries, and addresses issues or complaints compassionately. The goal is to make interacting with the healthcare system less daunting and more personable through conversational AI.

Ethical and Practical Considerations

While chatbots show great promise for improving access to care and streamlining operations, there are also important ethical and practical considerations around their use:

- **Data privacy and security:** Patient information must be kept confidential when interacting with and storing data in chatbots. Systems need to meet strict healthcare regulations and use best practices for encryption.
- **Transparency:** It should be transparent to users when speaking with an AI system versus a human. Chatbots must avoid misleading patients or providing medical advice outside their capabilities.
- **Bias and fairness:** Chatbots' training data and machine learning models must be carefully evaluated and monitored for potential biases regarding conditions, demographics, or underserved populations.
- **Technological limitations:** Chatbots have narrow capabilities and are not meant to replace clinicians. Their responses should be designed conservatively and include clear guidance for when to seek human help.
- **Unintended consequences:** More research on how widespread chatbot use might impact provider jobs or influence healthcare utilization, costs, and outcomes over the long run is still needed.
- **Regulatory oversight:** Government agencies must thoughtfully develop frameworks for how conversational AI can be safely and effectively integrated into clinical practice and patient care workflows.

Addressing these issues will be crucial for earning public trust as chatbots assume more responsibility for handling sensitive healthcare needs. Providers, technology firms, and policymakers all have a role in ensuring chatbots are developed and applied ethically as clinical support tools rather than replacements for human care.

Future Outlook

As artificial intelligence and natural language processing continue advancing, the capabilities of chatbots will expand accordingly. Some projections for how they may further benefit healthcare in the coming years include:

- Serving as virtual first assistants and triage filters for emergency medical dispatch and 108/102 systems.
- Providing essential diagnostic services by asking symptom questions and analyzing responses to generate potential conditions and treatment plans for review by doctors.
- Acting as personal health advisors that integrate with wearable devices and EHRs to monitor patients remotely and proactively recommend lifestyle changes and preventive care.

- Assisting clinicians by searching medical literature, performing differential diagnoses, and summarizing patient histories or proposed treatment options during consults.
- Supporting pharmaceutical research and clinical trials through recruitment, screening, adherence monitoring, and collecting patient-reported outcomes.
- Teaming with robots to deliver medications, meals, test results, and other services in hospitals, nursing homes, and patients' homes.

While the full realization of these advanced applications may be years away, chatbots are already demonstrating their value as frontline healthcare workers. When designed carefully with user needs and safety in mind, conversational agents show great potential to expand access to high-quality, affordable medical services through AI-powered automation and assistance. As technology progresses, chatbots will continue reshaping how patients interact with and navigate the healthcare system for the better.

Conclusion

Chatbots show promise in transforming patient care by supporting overburdened healthcare providers. They can play a meaningful role through appointments, billing, and mental health support. However, privacy, bias, limitations, and workforce impacts require ongoing attention as technology advances. While chatbots have great potential, more research is needed to understand their long-term impacts and ensure their safe development. Healthcare and tech companies must collaborate with medical experts and regulators to address challenges, validate appropriate uses, and implement risk controls. Transparency about chatbot abilities and continuous evaluation of patient interactions will also be necessary for public trust. As AI improves, chatbots may expand access to care for underserved people by reducing geographical, financial, and social barriers through 24/7 mobile access. This could improve health outcomes globally by facilitating early care, consistent management, and personalized recommendations. When carefully designed, chatbots demonstrate how AI can augment rather than replace humans with compassionate assistive technologies.

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