



TECHNOLOGY

The Role of Artificial Intelligence Chatbots in Veterinary Medicine

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The world of veterinary medicine is constantly evolving, and recent advancements in artificial intelligence (AI) and chatbot technology have opened up new possibilities for streamlining patient care in areas including client-facing triage, diagnostic recommendations, research enhancements, literature review, and even hospital workflow. Sebastian Gabor, cofounder and CEO of Digitail and an early adopter and developer of AI technology, said, “We won’t lose our job to an AI bot, but we could lose our job to someone using one.” AI chatbots are all but certain to play a significant role in the advancement of veterinary medicine—not just in the future, but in the present.

AI chatbots are computer programs that use natural language processing and machine learning algorithms to interact with users. They are designed to simulate human conversation and can carry out a variety of tasks, from answering basic questions to diagnosing complex medical conditions. They can be used to write surgery reports, client communications, or emails, to name a few. OpenAI, the creator of ChatGPT, has one of the fastest-growing websites in history, with nearly 600 million visits from 100 million unique users in the first 2 months of its launch.¹

In recent years, and especially in the past few months, there has been a significant uptick in the development

of AI chatbots for use in health care. These chatbots, also known as virtual health assistants or chatbot nurses, have been used to help patients schedule appointments, manage prescription refill requests, and even monitor health from home. AI is not a novel notion, nor is it only limited to science fiction; your favorite streaming service’s suggestions for a new television show or the route a Roomba takes through your house are guided by AI. ChatGPT and others are simply the next generation of the technology.

THE USE OF AI CHATBOTS IN VETERINARY MEDICINE

In the field of veterinary medicine, there have been a growing interest and investment in using AI chatbots to improve workflow and patient care. The technology is powerful. A potential application is in the area of diagnostics, where chatbots could help veterinarians quickly and accurately diagnose a variety of conditions based on inputs of patient history, physical exam findings, laboratory results, and more. While not a replacement for the knowledge and experience of a veterinarian, it is a potent enhancement, allowing dramatically faster review and diagnosis of patient files. For an industry facing a crisis of productivity, this technology could prove to be an invaluable tool in the pursuit of helping more clients and patients.

For example, a chatbot could be programmed to ask a series of questions to a pet owner about their animal's symptoms and behavior. Based on the answers provided, the chatbot could then suggest potential diagnoses or recommend further testing to the veterinarian. Chatbots—including the likes of OpenAI's ChatGPT, Google Bard, Perplexity AI, and Microsoft Bing—can be programmed to triage cases, take histories, and even help to translate a doctor's recommendations to clients. Some have been trained to calculate drug dosing and flag adverse drug interactions.

The potential use for AI chatbots in veterinary medicine is not limited to doctors in streamlining workflow. Chatbots could be used to automate certain tasks, such as scheduling appointments, keeping records, writing surgery reports, producing discharge instructions, and even following up on a patient's wellbeing by prompting communication with the client. While a chatbot may not yet be able to be employed without monitoring and review, the possibility of more autonomous AI is on the horizon.

POTENTIAL RISKS

As with any new technology, there are also risks associated with the use of AI chatbots in veterinary medicine. The chatbots are, for the most part, trained on the internet. Some concerns are the potential for misdiagnosis or incorrect treatment recommendations. While AI chatbots are designed to be highly accurate, there is always the possibility of errors, particularly if the chatbot is not properly trained or if it encounters a situation that falls outside of its programming. As textbooks can go out of date or anyone could post to the internet, the chatbots are susceptible to errors. Their potential for error is exactly why the technology should be used for medical guidance by a professional. No system of research is infallible, nor is any mind.

Another concern is data privacy and security. Chatbots rely on the collection and analysis of large amounts of data, which raises questions about who has access to this data and how it is being used. Chatbots are not secure and make no such assertions. There is also the risk of data breaches or cyber attacks, which could compromise sensitive information about patients and



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PRECAUTIONS: Hypoadrenocorticism can develop at any dose of VETORYL Capsules. A small percentage of dogs may develop corticosteroid withdrawal syndrome within 10 days of starting treatment. Mitotane (o,p'-DDD) treatment will reduce adrenal function. Experience in foreign markets suggests that when mitotane therapy is stopped, an interval of at least one month should elapse before the introduction of VETORYL Capsules. It is important to wait for both the recurrence of clinical signs consistent with hyperadrenocorticism, and a post-ACTH cortisol level of $> 9.1 \mu\text{g/dL}$ ($> 250 \text{ nmol/L}$) before treatment with VETORYL Capsules is initiated. Close monitoring of adrenal function is advised, as dogs previously treated with mitotane may be more responsive to the effects of VETORYL Capsules.

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Method of use covered by
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clients. Sensitive information should not be shared through chatbots. A normal level of thoughtful caution should be used when interacting on the internet; this is a problem not solved by chatbots, and users should be conscious of the risks.

LOOKING AHEAD

Despite these risks, the rapid development of AI chatbot technology and the potential within it suggests that it will continue to play an increasingly important role in veterinary medicine in the months and years to come. As the technology becomes more sophisticated and accurate, it has the potential to revolutionize how veterinarians diagnose and treat their patients, greatly enhancing the quality of care provided, dramatically improving workflow and productivity, and significantly improving the level and speed of client communication.

While there are risks associated with this technology, the potential benefits are significant—perhaps even revolutionary—and it is likely that we will see increasing use of AI chatbots in veterinary medicine. Ignoring this technology because of its risks is like refusing to use a scalpel blade because it's sharp. As with any new technology, it is important to proceed with caution, but the use and power of the software cannot and should not be ignored. **TVP**

References

1. Hu K. ChatGPT sets record for fastest-growing user base - analyst note. Reuters. Updated February 2, 2023. Accessed September 11, 2023. <https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01>



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A graduate of St. George's University School of Veterinary Medicine, Dr. Tancredi is a small animal clinician and owner of Old Ridge Veterinary Hospital in Chadds Ford, Pennsylvania. His professional interest in artificial intelligence has led to a number of published articles, seminars, and podcasts on artificial intelligence and its use in veterinary medicine. More of his writing can be found at doctortanc.substack.com.