

# Can readers spot the AI impostor in healthcare writing?

Natalie Bourré

Marketing 4 Health Inc., Toronto, Canada

doi: 10.56012/fwhk6920

## Correspondence to:

Natalie Bourré

nat@marketing4health.net

## Abstract

The use of artificial intelligence (AI) writing assistants in the healthcare industry is becoming increasingly prevalent. These tools can help medical writers to generate content more quickly and efficiently, but they also raise concerns about the accuracy and completeness of the information that is produced. This study investigated whether readers can distinguish between health-related texts written by humans and those generated by AI writing assistants. A survey of 164 respondents found that slightly more than half could correctly identify the source of the healthcare text. Differences between healthcare professionals and non-healthcare professionals were not statistically significant. Medical writers were better at recognising that a text had been written by an AI model than were non-medical writers ( $P < .05$ ).

These findings suggest that it is important for organisations to establish clear guidelines regarding the use of AI writing assistants in healthcare. The authors of health-related content should be required to identify whether their work has been completed by a human or an AI writer, and organisations should develop processes for evaluating the accuracy and completeness of AI-generated content.

This study has several limitations, including the small sample size. However, the findings provide valuable insights into the need for organisations to develop clear guidelines for their use.

**A**rtificial intelligence (AI) writing assistants are large language models (LLM) trained to generate text based on prompts by the user. ChatGPT, GPT-4, Bing Chat, and Google Bard are some recent AI writing assistants to enter the marketplace. The AI writing assistant market has been forecast to grow by 14.2% compound annual growth rate between 2021 and 2028.<sup>1</sup> Due to the growing popularity of LLMs, it is inevitable that more medical writers will start using them. This trend is already apparent based on surveys I conducted in March 2022 and then again in May 2023.

Based on a survey I conducted on Formlooo in March 2022, 19.5% of medical writers (17 of 87) had tried using an AI writing assistant to help with their healthcare write-ups. In May 2023, I repeated the question in another survey to try to identify any fluctuation that may have occurred over the previous year. Out of 76 medical writers who responded to the most recent survey, 52% indicated that they use an AI writer occasionally, whereas 17% use it regularly. Only 17% of the medical writing respondents have never tried using an AI writing assistant. This suggests that 69% (52% + 17%) of medical writers use AI to assist their writing at some level. That represents four times more medical writers using an AI writing assistant in May 2023 compared with March 2022.

## Confidence in ability to identify AI vs human-written content is generally high

As the use of AI writing assistants becomes more prevalent in the healthcare industry, it is increasingly crucial for readers to be able to spot indicators that will help them identify the source of health-related articles. AI writing assistants, such as Generative Pre-trained Transformer (GPT) and ChatGPT, generate text based on input from the human user. However, writers in regulated industries, such as healthcare, may not gain as much benefit from AI writers due to the requirements for accurate and complete

information. Improved patient care is the primary goal for all written healthcare content, and low risk for all stakeholders, including patients and healthcare professionals (HCPs), must be achieved.<sup>2</sup> Inaccurate or incomplete healthcare information could be harmful to a patient. It has been recognised that language models generate incorrect statements and even fabricate false information.<sup>3</sup> Such fabrications are unintended text generations not supported by the input data or the context, yet they are stated with utmost confidence. These are called “hallucinations”, similar to when humans experience something through the senses that seems very real, even though it is not based on anything in the outside world. Evaluating and mitigating hallucinations within an LLM is challenging because evaluating a hallucination is subjective and based on user expectations. Also, mitigating hallucinations could come at the cost of reducing fluency or naturalness in the generated text, which can negatively affect the user experience.<sup>4</sup>

Considering the increased experience of AI language models by medical writers, one can expect that a greater volume of healthcare-related content written to some degree with AI will emerge. Thus, it will become more challenging for consumers and healthcare professionals to know if a human or an AI writer wrote the content they are reading. This is a concerning issue due to the potential for inaccuracies or incomplete data in text generated by AI. In my research, one objective was to identify how common it is for people to believe they could discern between content written by a human and an AI writer.

I conducted a LinkedIn poll to ask respondents ( $n=66$ ) if they thought they could tell if a human or an AI writing assistant wrote healthcare copy.<sup>5</sup> In the survey, 39 people (59%) were confident they could tell the difference, whereas 19 (29%) did not believe they could,

Writers in regulated industries, such as healthcare, may not gain as much benefit from AI writers due to the requirements for accurate and complete information.



and 8 (12%) were uncertain. Several who responded “yes” also commented that it would be highly evident to them. Of the uncertain group, several commented that they were not sure what was meant by an “AI machine”.

In related research, my main objective was to test readers’ abilities to correctly identify whether a selection of health-related texts had been

written by a human or by an AI writer. The human-written healthcare passages originated from websites published before June 2020. GPT-3 was released in June 2020; therefore, by selecting texts published prior to this date, this ensured that GPT-3 was not involved in creating the content. Moreover, to increase the likelihood that the content was accurate, each chosen text

had to be written by an author with a healthcare designation such as “MD” or “pharmacist”. I selected parts of the text that explained the basics of the disease. For the AI-written texts, I used several large language models, such as Rytr, WordHero, Nichess, ContentBot, Texta.ai, and Creator.ai.

In March 2022, 164 respondents were asked to read the medical texts and identify whether they thought it was written by a human or an AI writer. The readers were blinded to the source of the text.

**Table 1. Percentage of correct responses regarding human or AI-generated text for all respondents and subgroups**

Human or AI author	Healthcare Professional (Yes or No)		Medical Writer (Yes or No)		Neither HCP nor MW n=75	TOTAL n=164
	HCP Yes n=59	HCP No n=105	MW Yes n=58	MW No n=106		
Text 1 Human	44.10%	53.80%	43.10%	53.80%	58.70%	50.00%
Text 2 AI	40.70%	41.90%	39.70%	42.50%	46.70%	41.50%
Text 3 AI	84.70%	77.10%	89.70%	74.50%	70.70%	79.90%
Text 4 Human	91.50%	77.40%	79.30%	84.00%	80.00%	82.30%
Text 5 Human	57.60%	50.90%	53.40%	52.80%	50.70%	53.00%
Text 6 AI	74.60%	73.30%	77.60%	71.70%	70.70%	73.80%
Text 7 AI	33.90%	28.60%	36.20%	27.40%	25.30%	30.50%
Text 8 Human	30.50%	34.90%	32.80%	33.00%	32.00%	32.90%
Text 9 AI	35.60%	34.30%	43.10%	30.20%	32.00%	34.80%
Text 10 AI	61.00%	63.80%	70.70%	58.50%	61.30%	62.80%

Differences in responses between HCP and Non-HCP were not statistically significant. For AI-generated text, the differences in responses between MW and non-MW were statistically significant (Chi-square,  $P < 0.05$ ).

Abbreviations: HCP, healthcare professional; MW, medical writer

**Results**

Each respondent was shown 10 text examples – four human written and six AI written. Overall, respondents correctly identified the writer 54% of the time (358 of 656 human-written texts [54%] and 530 of 984 AI-written texts [54%], Table 1).

The respondents included 59 healthcare professionals (HCPs) and 105 who were not HCPs. Of the examples of *human-written* text that were shown, 55.9% and 54.1% were correctly identified by HCPs and non-HCPs, respectively. There was no significant difference between groups (Chi-square, non-significant). Of the *AI-written* texts 59.5% and 50.8% were correctly identified by HCPs and non-HCPs, respectively. There was no significant difference between these groups (Chi-square, non-significant).

## Try the Test!

The Guest Editors for this issue of *Medical Writing* participated in one of the surveys to try to guess the AI-written sentences.

Daniela Kamir correctly guessed 4 of the 6 AI-written sentences. Shiri Diskin was unable to identify any.

Try it yourself at:  
<https://marketing4health.formaloo.net/AlorHuman>

An analysis was also done to compare the ability of medical writers ( $n=58$ ) and non-medical writers ( $n=106$ ) to identify text that AI or humans wrote. Medical writers and those who do not write medical content demonstrated no difference in identifying text written by humans. However, medical writers identified text written by an AI model significantly more than non-medical writers (Chi-square,  $P<0.05$ ).

A more recent study with the same objectives is underway, but the data have not been analysed as of this publication. The difference between the new survey vs. the 2022 survey is that the new survey uses AI texts written by ChatGPT, Google Bard, and GPT-4. The data will be published once available. In the meantime, the survey has been left open so anybody can test their skill at identifying AI vs. human-written healthcare texts. It is free, online, and confidential. Your score and the answer sheet will be available at the end of the survey. Aggregate data may be used for ongoing research. You can try it at:  
<https://marketing4health.formaloo.net/AlorHuman>

## Conclusions

As the number of individuals with experience using AI writing tools continues to grow, it will become increasingly important for organisations to establish clear guidelines regarding the acceptable use of such technologies to address the potential for misuse or abuse of these tools, and the need for transparency and accountability in their use, particularly in the healthcare field.

The authors should be required to identify their work as having been completed by either a human or an AI writer.

## Disclaimers

A human author wrote the content of this article. AI was used for grammatical corrections and phraseology suggestions.

## Disclosures and conflicts of interest

The author declares no conflicts of interest. No monetary or non-monetary incentives have been provided.

## Data availability statement

Please contact the corresponding author for inquiries about data and other supplemental information.

## References

1. Up Market Research. Global AI writing assistant software market. Industry analysis, size, share, trends and forecast 2015-2030. 2022.
2. Korngiebel DM, Mooney D. Considering the possibilities and pitfalls of Generative Pre-trained Transformer 3 (GPT-3) in healthcare delivery. *NPJ Digit Med.* 2021;4(1):93. doi:10.1038/s41746-021-00464-x.ht
3. Maslej N, Fattorini L, Brynjolfsson E, et al. The AI index 2023 annual report. "AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Stanford, CA. April 2023. Available from: <https://aiindex.stanford.edu/report/>
4. Ji Z, Lee N, Frieske R, et al. Survey of hallucination in natural language generation. *ACM Comput Surv.* 2023;55(12)1–38. doi:10.1145/3571730.
5. Bourré N. LinkedIn Survey: Do you think you could tell if healthcare copy was written by a human or by an AI machine? April 2022. Available from: [https://www.linkedin.com/posts/natbourre\\_medicalwriting-medicalcommunications-medicalmarketing-activity-6890385905149181952—\\_vy?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/natbourre_medicalwriting-medicalcommunications-medicalmarketing-activity-6890385905149181952—_vy?utm_source=share&utm_medium=member_desktop)

Identifying text generated by AI is an important issue due to the potential for inaccuracies or incomplete data in such text.



## Author information

Natalie Bourré is a graduate student in the business administration doctoral programme at LIGS University. She is also a healthcare communications consultant in Toronto, Canada, and founder of Marketing 4 Health Inc.