## Speaker

## Chantelle Rein-Smith, PhD, CMPP

*Whitsell Innovations, Inc., Chapel Hill, NC*

## By Madelyn Mauterer, PhD

*On May 16th, Chantelle Rein-Smith, PhD, CMPP, presented an overview of the role of AI in medical writing and how it can increase the efficiency of medical writers while maintaining accuracy and compliance. Dr. Rein-Smith is a Principal Medical Writer and Consultant at Whitsell Innovations, Inc. and a dedicated member of the medical writing community.*

Since the release of ChatGPT in 2022, Generative Artificial Intelligence (GenAI) has become an inescapable presence in society, and AI tools of all varieties are being actively integrated into most medical writing agencies, contract research organizations (CROs), and pharmaceutical companies.

GenAI may be a novel technology to many, but AI has already been used for decades in features like Siri and Alexa, ride-share applications, and predictive texting. In her presentation, Dr. Rein-Smith provided a high-level introduction to AI, including GenAI, and how it can be applied to medical writing.

Most AI and GenAI models utilize machine learning (ML) to process data, identify patterns and relationships, and problem solve. To this end, AI models use aptly named “neural networks”, computational structures inspired by the human brain, that consist of “input”, “hidden”, and “output” layers, among others. These layers collect, process, and generate responses, respectively.

Text-based GenAI is often developed using large language models (LLMs) which have particularly complex networks. This allows the model to process extensive amounts of data and engage in “deep learning”. Ultimately, this enables GenAI tools to interact with users through realistic text and/or speech via natural language generation (NLG).

Of note, GenAI cannot “invent” unique ideas but instead, answers users by summarizing and consolidating the information that has already been processed.

**To maximize the benefits of working with GenAI, some general strategies for medical writers include the following:**

* ***Choose the best tool***

Not all GenAI is optimized for the same tasks. All-in-one applications can be helpful for more general needs, but specialized models can provide more relevant outputs. GenAI tools developed for research assistance, content summarization, and data organization, for example, can be particularly helpful for medical writers.

* ***Minimize ambiguity***

Specific prompts generally yield equally specific responses. A detailed request will help direct the GenAI to its most relevant sources. Follow-up prompts can further narrow down and refine subsequent outputs.

* ***Provide thorough sources within legal and ethical constraints***

Providing GenAI tools with specific data may produce the most useful outputs; however, AI software may store information provided by users to train their models. Therefore, using open AI tools with confidential information, such as drug development details, study results, or patient data, is ethically inappropriate and, in many cases, illegal.

Publicly available GenAI can streamline high-level tasks like generating templates, creating abstracts, and organizing to-do lists, but confidential information should only be used with company-approved AI tools.

Ideally, proprietary data should be processed “in-house” using private AI software owned by or licensed to the company itself. These are closed models equipped with advanced data protection and the information is not freely available to other AI models.

* ***Review all outputs***

AI is not infallible. When the information needed to generate a comprehensive response is unavailable, GenAI will use their database to fill in the gaps even if it is not correct. This is called “hallucinating” and can be especially egregious when citing sources and building reference lists – an understandably major concern when reporting scientific information.

The applications for GenAI in medical writing are evolving rapidly and becoming increasingly unavoidable. Medical writers therefore need to adapt and develop a basic understanding of AI principles to apply these tools ethically and effectively.

Thank you, Dr. Rein-Smith for a very timely and informative session! Your presentation was an easily digestible and very relatable introduction to the integration of GenAI with medical writing.

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