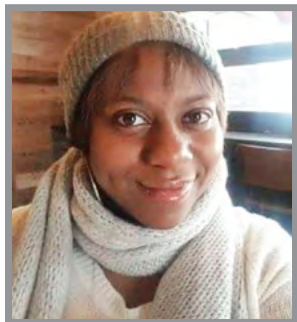


FROM THE GUEST EDITOR



Introducing Artificial Intelligence and Machine Learning Tools Into the Medical Writing Workflow

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Artificial intelligence (AI) and machine learning (ML) tools have been used across all spectrums of the drug development process. The US Food and Drug Administration has accepted over 100 submissions that cite the use of AI that has assisted with clinical trial recruitment, drug discovery, and dose optimization. With these insights in mind, health authorities expect the use of AI and ML tools in regulatory processes and is working to provide meaningful oversight.^{1,2} In medical writing, AI and ML sources have been essential to the writing process by formatting documents, designing study protocols, analyzing manuscripts, and communicating complex scientific information to lay audiences. The technological advances of AI and ML are rapidly evolving, and there is indeed a place for such technologies in the medical writer's resource toolbox.

AI and ML tools have made the regulatory submission preparation process more efficient and less tedious for both nonclinical and clinical processes by assisting in creating error-free, organized, and correctly formatted regulatory documents per health authority guidance. Other uses for AI and ML technologies in regulatory submission planning include outcome predictions, image analysis, and the design and conduct of clinical trials.³

In biomedical publications, AI has been used for manuscript preparation, citation management, proofreading, and formatting. Another AI/ML tool that is useful to medical writers is the technology's capability to analyze a manuscript and suggest journals for submission. Such utilization has ensured compliance with journal submission criteria, which increases the likelihood of manuscript acceptance. From a publishing workflow perspective, AI makes the editorial workflow more efficient by finding peer reviewers, reviewing statistical data, and screening manuscripts. AI/ML tools also detect plagiarism errors, provide quality assessments, and scout for experienced peer review-

ers.⁴ Non-English-speaking scientific writers have used AI to improve grammar, clarity, and syntax of manuscripts, namely, the methods, results, and reference sections, which can increase the likelihood of manuscript acceptance to notable scientific journals.⁵

Not only are AI and ML tools useful for regulatory and biomedical journal submissions, but it has also been used for scientific communications. AI algorithms can be used to develop lay summaries of complex scientific information to effectively communicate with the public in the forms of press releases, news stories, and product descriptions.^{4,6,7}

Although AI and ML tools have been useful to medical writers, the technologies are shrouded in ethical concerns, which include properly citing the use of the technologies, bias, accuracy and reliability, informed consent violations, misinformation, and plagiarism.^{5,6,8} Potential issues with job security and employee training have also been discussed.^{4,9} Companies and medical writers who choose to implement AI and ML tools into their workflow should adopt a strict code of ethics and understand the regulations associated with their use.^{1,2}

In AMWA's Digital Revolution theme issue, a range of uses for AI and ML resources for medical writers are presented. The articles in this issue cover topics ranging from understanding the technology as it exists today to identifying the different types of software available. AMWA will continue to publish articles on the subject in the issues to come and vows to keep readers informed on technological resource availability, ethical responsibilities, and governmental oversight when it comes to AI and ML tools.

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