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From Pixels to Patients: Harnessing Artificial Intelligence in Medical Communication

Victoria Hart 00:00.237 : Hello, and welcome to InformED, a podcast series where you will hear industry experts share their thought-provoking insights and lessons in the field of medical communications. This series is brought to you by ISMPP and is generously sponsored by MedThink SciComm. The opinions shared by the presenters today are our own and do not represent those of our employers.

My name is Victoria Hart, and I'm the guest host for today's episode. I'm a medical associate on the publications team at Open Health. I'm joined today by our guest speakers, Kelly Soldavin and Jon Viney. Kelly and Jon, would you like to introduce yourselves?

Kelly Soldavin 00:40.426 : Sure. As Victoria said, I'm Kelly Soldavin. I'm a Senior Editor with Taylor& Francis, a publisher. I work on publication development and manage a portfolio of original research journals. My passion projects are plain language summaries and patient collaboration, and I'm really keen to better understand how generative AI can be used to improve PLS and engagement with patients, as well as make research more accessible overall. As a long-term patient with a chronic illness, these initiatives are really close to my heart.

I've been involved in publishing for over 20 years, and the first 14 were spent in veterinary medicine publishing. So, having moved over to the human side, I'm always amazed that we are able to communicate with patients in a language that everyone understands, and I just want to keep improving upon how we do that. Thank you.

Jon Viney 01:32.273 : Hi, my name is Jon Viney. I started as a Medical Writer in medical communications about 10 years or so ago, and now I'm managing a team of medical writers at OPEN Health. I've been in publication specifically probably for three or so years now, and I recently went to the ISMPP EU meeting, and I was very interested to hear all about how people are starting to use AI, their concerns, questions, their excitement. And I suppose I'm interested in seeing how the use for medical writers in particular changes over the next few years.

Victoria Hart 02:08.643 : Awesome. Thank you. So, Jon, since you were at ISMPP EU in January, what were some of the key takeaways regarding the use of AI for content development?

Jon Viney 02:22.614 : So, as you might expect, there was a lot of discussion about AI. It was quite a hot topic. The meeting was two days and I think probably every session mentioned AI at some point. In discussions, in workshops, in the breaks, there's AI everywhere. There's a lot of posters on use of AI. I think with the takeaways, I think at the minute we're probably, from the discussions I saw and the presentations we had, it is almost like an early stage I would say in terms of adoption. People are excited but I would say people aren't sure what to do just yet.

I co-led a roundtable with some colleagues from Open Health and the main feeling from that was that people are excited but aren't sure how to use it yet or if they can. So there were I suppose more questions than answers about how the AI tools might be used. The potential was considered large but there were concerns about hallucinations so that's obviously you know, ChatGPT making up information, you know, not perhaps providing factual answers. Data security was a big concern. So obviously inputting sensitive clinical trial information into a tool like ChatGPT obviously can't be done. Obviously, confidentiality concerns as well. So those caused some hesitation amongst attendees about implementing the use of AI tools.

That being said, there was a lot of research presented around the use, for example, generating plain language summaries. And these were showing that perhaps they're better than humans at the moment at providing readable text, obviously, although there are caveats regarding the indices used to assess readability. But it's quite interesting that already these tools are getting quite good. A big takeaway for me was, ensuring all publications professionals try and adhere to standards and guidelines regarding use of AI and there's a good position statement from ISMPP that was highlighted in the meeting that's available online and that has a list of standards it encourages us to adhere to, you know, being responsible, being accountable for the information we put in, you know, being mindful of confidentiality and such. So I think that was a really big one for me just to try and look at what you know, people in the industry, other professionals are doing and try and be mindful of any concerns or any issues that might come up.

Victoria Hart 05:06.284 : Yeah, I think that's really helpful to have that position statement to kind of help guide writers and others in med comms. Did the use or the issue of proprietary models for content development arise?

Jon Viney 05:20.514 : Yeah, it did a fair bit. I think because of the data security concerns, I think that proprietary models is kind of going to be the way to go for a lot of industry uses of AI tools. They're not going to want their staff or agency staff or anyone else to be putting confidential information into a publicly available tool. So there's a number of companies developing in-house tools from the discussions I saw. There was a poster from some authors at Ibsen which were kind of demonstrating the kind of initial capabilities of a proprietary model. This is in kind of filtering and summarizing articles and doing kind of literature screening. And they had some way to go, but it's interesting kind of first step in such a model.

A lot of discussion in workshops around the use of these proprietary models for plain language summaries. So we could perhaps imagine a future in which companies have their own model, which is trained up on PLS text development and they plug in their clinical trial data and it produces out a plain language summary ready to be published, you know, once the main article is live. So I think we could probably see that happen in the next few years. And there was a big topic was on systematic literature reviews. And again, these would require like a custom model, because there's a lot of investment required to kind of train these, update these, but the potential for kind of time saving for them is quite enormous. And there's already a number of companies trying to develop off-the-shelf systems for SLR screening and quality control as well. So definitely an avenue for proprietary models in the future, I would say.

Victoria Hart 07:06.205 : Great. Thank you, Jon. Of course, journal editors have a unique perspective on the use of AI in med-cams. Kelly, could you share your thoughts on the pros and cons of AI as it currently stands?

Kelly Soldavin 07:21.095 : Yes, absolutely. I think the main pro of generative AI, or I'll probably refer to it as Gen AI, is in particular to the medical publications community and our audiences, is that it helps increase equity and health literacy. It makes research more accessible to more people in a variety of ways. It also increases the quality of research as well as its discoverability. Overall, the biggest and most acknowledged con, obviously, is the hallucinations that Gen AI produces that create false and inaccurate data. Gen AI is really still in its infancy, as Jon noted, and it's not really that intelligent yet. It's only as good as the information that's being fed into the large language models. And even securing that information is resulting in copyright infringement and data appropriation. When discussing the pros and cons, I'd like to break it down into three categories: content development, the publication process, and research accessibility.

With regard to pros and content development, Gen AI can provide assistance for a number of things, data collection and analysis, writing, figure generation. The most common example here in this category is for systematic literature reviews. It can also help with journal identification and selection. During the publication process, Gen AI powers tools that detect plagiarism, fabricated research from paper mills, and image manipulation. Dimensions has a tool that can identify text that indicates the integrity and reproducibility of research. And finally, for research accessibility, one of the other popular uses that we've already talked about is in writing plain language summaries and making research accessible to a much wider group of people. It also provides really improved translation over traditional AI because it's continuously learning and adapting language to allow relevant up-to-date translations. And that's a highlight to some of the pros.

And then when we come to the cons, it's kind of the flip side of the same coin. In content development, it's also being used to create research images, citations, other content. But this is where it's being fabricated and being used by paper mills. And we've seen a huge increase in paper mill papers being submitted to our journals. For authors, editors, and peer reviewers, another con is how easily confidentiality and patient privacy can be breached if we're not using

proprietary models and using LLM or Gen AI that's available to the public. And when it comes to readers, because it's a digital resource, for regions that lack the infrastructure to support it, we're going to just continue seeing a widening information gap. So I believe we're at a place now where we're determining the many ways that Gen AI can assist us in our work and benefit our authors and readers. But we as humans need to remember that it's for assistance. We still need to write our original content. We always fact check it and validate data that is generated by Gen AI. And then be careful about the AI tools that we're using for confidentiality and private information. Thank you.

Victoria Hart 10:26.175 : And then the rapid progression of AI tools makes developing guidance particularly difficult. We also noted a divergence in guidance between publishers who are more open to AI use in publications and those who are more hesitant. What do you think about the current policies on AI use in publications?

Kelly Soldavin 10:47.643 : When you look at all the publisher policies on AI, they do vary quite a bit, but there's two consistent messages we're seeing for medical research. One is that publishers are consistently prohibiting Gen AI from being an author, mainly because it cannot take responsibility for the content created, which is one of the standards of ICMJE criteria for authorship. And ICMJE does specify that AI cannot be named as an author or co-author. The other thing that we're seeing across all the guidelines is that publishers are encouraging disclosure of Gen AI use, and that also aligns with ICMJE recommendations as well as the ISMPP position statement. However, there isn't a consistent template for how this information should be disclosed. I think Elsevier has come out with one, but across publishers, there's no consistent guidance. So this is an area where we need to find better consensus as we move forward. Because of the current differences in publisher policies, I would just really recommend to authors and their teams that if you have a target journal to check with that publisher's guidance and make sure you understand how you can use Gen AI because it does differ and what you don't want to do is start using it and then have it not be allowed by the journal that you're planning on submitting your manuscript to.

And with regard to ISMPP's guidance that came out late last fall, it's a position statement and a call to action. And it's kind of a prerequisite to more detailed and defined recommendations that their AI task force is currently working on. Their guidance focuses on several key concepts that come up in the pros and cons that we just talked about. So mainly verifying that the data is generated, verifying that the data generated is accurate to prevent mis- and disinformation. Protecting confidentiality of business, scientific, and patient data. Disclosing its use in content writing, creation, editing, peer review. Using it to address accessibility gaps, such as using plain language and translation to further the reach of research. Then the other half of the position statement is asking us as medical publication professionals to take responsibility and accountability in our approach to AI. For example, by educating ourselves, respecting it as a legitimate academic field, and addressing misconceptions about Gen AI itself.

Victoria Hart 13:20.135 : Thank you, Kelly. Thanks for sharing some insight into ISMPP's statement and as well as some advice about how to kind of handle the use of AI when considering what journal you're going to publish in. Since AI is just rapidly evolving, we're looking forward to seeing the advancements in this area presented at the annual ISMPP meeting next month. What are your impressions of where we stand and where we need to develop? in the future with AI?

Jon Viney 13:58.944 : I think at the moment there's a lot of interest and discussion. I think we both said that maybe there's more to be done in terms of implementation and guidance and practicalities. For me I would like to see for plain language summaries for example more research on say beyond readability scores like how do human reviewers rate the content generated by generative AI, looking at the accuracy of the content as well a bit more. I think on process I would like to see how we work with authors better to ensure that things are compliant or that we're meeting good publication practice guidelines.

For example, if we've got a PLS that's generated by an AI tool, you know, what stages we get authors involved, you know, how compliant is that, you know, I think it goes back to what Kelly was saying about ensuring we're kind of meeting those guidance points. And when I was kind of finishing up the ISMAC meeting at the European meeting, I was looking on PubMed and there's a lot of research and some of it's so cutting edge, it's very, very technical. And there's a lot of SLR development and how they trend models and things. And I think that's got to filter down to us who are maybe doing the more practical side of things. I think that filtering down of the real kind of cutting edge of research and how they're developing the models and how they can be implemented is something that, you know, as someone who's not an AI expert, I'd like to see that. So maybe more engagement with the kind of the tech leaders to kind of translate it to our field would be a bit more useful too.

Kelly Soldavin 15:49.979 : From the publisher perspective, I was talking to a colleague last week and preparing for this podcast, and he gave me this really great analogy about the current state of Gen AI. He says we're having a Sputnik moment, as in Sputnik went out into space and it changed how the world looked at space travel. Even though the technology for the space race was really lagging and in its infancy at that point, that event drove innovation and it created the flow of resources to support the space race. And he said that's kind of where we're at with AI at this point. Chat GPT becoming available for general public use has everybody talking about AI and looking at how we use it. But we're still in that very early stage and we're moving into that driving of innovation, improving our technology, having more resources dedicated to it in our own companies. And we're also, you know, getting to where we're addressing its major limitations.

The future landscape, I think, specific to publishing and publishers themselves is that we need to have more homogenous guidelines across publishers with better consensus and better clarity. We want to have a goal that we're ensuring Gen AI is assisting in the development and

publication of the highest quality research that is the most useful to the most amount of people. And then also there's a huge opportunity for education from publishers on how these tools should be used to help authors, editors, peer reviewers, our readers, our own staff on how we navigate AI-generated content and understanding best practices for using it and how to transparently disclose its use.

Jon made a great point: I'm not an AI expert either and I feel like there is a bit of a widening gap between those that are the experts and really understand it. And there's also a bunch of people, including me, that are trying very hard to catch up, and I think we need to provide more educational opportunities to help people understand just the basics of using Gen AI and prompt engineering, things like that. What are the best practices? And then finally, because of the content we publish, publishers can provide that verified high-quality peer-reviewed content for a large language model development. And that ensures that the best possible outputs will emerge on the other side. It's only natural that governments, AI corporations, and companies will look to scholarly publishers for high-quality verified content. So that's my future look to the landscape for AI with publishing.

Victoria Hart 18:32.267 : Thank you. And thank you, Kelly and Jon, for this interesting conversation, but we're out of time for today. Thanks for listening to Informed for medical communication professionals. Please take a minute to subscribe to the show on your favorite podcast app, inform your colleagues, and rate our show highly if you liked what you heard today.

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