# ChatGPT in healthcare: education, research and practice

#### Welcome to today's webinar

As we wait for everyone to enter, a little 'housekeeping':

- •Questions will be taken at the end of the webinar
- •Please put questions or discussion topics in the chat (not Q & A)
- •The webinar finishes at 12.30, but we will stay on for further questions & discussion
- •Your cameras & microphones are currently muted, but you will be able to unmute yourself
- & ask questions later
- Today's session is being recorded slides and a link to the recording will be emailed
  Please give us your feedback & suggestions for future webinars and training



Amy McKenzie and Mozhdeh Dehghani 6 June 2023

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Artwork by Gary Saunders (Bangerang, Yorta Yorta, Wiradjuri and Dja Dja Wurrung), created 2022 for Austin Health's Reconciliation Action Plan

# - **Demonstration**

Current uses in healthcare education research and clinical practice
Practical and ethical pitfalls
Best practice



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**Chat GPT:** a large language model developed by Open AI, designed to interact as a chatbot with humans in a convincingly conversational way

Large language model (LLM): a computer program which is often described as artificial intelligence

ChatGPT has been trained on a massive body of text and uses statistical models to guess the most likely word in a sentence based on the billions of other sentences available in its training data







### **Healthcare education: applications**



- Automated Scoring
- Generating Case Scenarios
- Teaching Assistance
- Creating Content to Facilitate Learning
- Personalised Learning
   Language Translation
- Research Assistance



### **Healthcare education: risks**

- Plagiarism and academic integrity
- May impact the learning process
- Can't always be trusted to provide

correct or unbiased information





### Healthcare research: applications

A revolutionary tool for:

- Academic writing & research process itself
- Conducting literature reviews
- Generating computer codes
- Communicating research ideas and results
- Being a peer reviewer
- Writing an editorial



#### Healthcare research: risks



- Can ChatGPT be an author?
- Bias in the training data
- Homogenisation of research
- Spread of misinformation
- Inequitable access to AI tools

overrepresent hegemonic viewpoints and encode biases potentially damaging to marginalized populations ... In accepting large amounts of web text as 'representative' of 'all' of humanity we risk perpetuating dominant viewpoints, increasing power imbalances, and further reifying inequality. (Bender, et al, 2023)

# Healthcare practice: applications

- Streamlining the clinical workflow
- Producing efficient discharge summaries
- Enhancing diagnostics, prediction of disease risk and outcome, and drug discovery
- Determining the imaging steps needed in breast cancer screening
- The evaluation of breast pain
- Refining personalised medicine
- Improving health literacy





### Healthcare practice: risks



#### 2 Scope and Limitations of this Technical Report

This report focuses on the capabilities, limitations, and safety properties of GPT-4. GPT-4 is a Transformer-style model [39] pre-trained to predict the next token in a document, using both publicly available data (such as internet data) and data licensed from third-party providers. The model was then fine-tuned using Reinforcement Learning from Human Feedback (RLHF) [40]. Given both the competitive landscape and the safety implications of large-scale models like GPT-4, this report contains no further details about the architecture (including model size), hardware, training compute, dataset construction, training method, or similar.

We are committed to independent auditing of our technologies, and shared some initial steps and ideas in this area in the system card accompanying this release.<sup>2</sup> We plan to make further technical details available to additional third parties who can advise us on how to weigh the competitive and safety considerations above against the scientific value of further transparency.

Open AI. (2023) GPT-4 Technical Report <u>https://cdn.openai.com/papers/gpt-4.pdf</u>

- Privacy
- Bias
- Accuracy and reliability
- Lacks the emotional perspectives needed in healthcare
- Lack of regulation and transparency



#### **Current Practice**

- ChatGPT is a resource, not a substitute for learning
- ChatGPT should not be listed or cited as an author or co-author (ICMJE, COPE, 2023)
- If LLM tools are to be used, it should be documented in the methods or acknowledgements
- If you're using ChatGPT responses as a primary source (e.g., you're studying the abilities of AI language models), you should definitely cite it for this purpose, just as you would any piece of evidence
- If you use ChatGPT to help you in the research or writing process (e.g., using it to develop research questions or create an outline) you may be required to cite or acknowledge it in some way. Check if your institution has guidelines about this
- Don't cite ChatGPT as a source of factual information





### How to cite ChatGPT in APA/MLA Style

#### Example: APA ChatGPT citation

APA format	OpenAI. (Year). ChatGPT (Month Day version) [Large language model]. https://chat.openai.com
APA reference entry	OpenAI. (2023). <i>ChatGPT</i> (Feb 13 version) [Large language model]. https://chat.openai.com
APA in-text citation	(OpenAl, 2023)

#### Example: MLA ChatGPT citation

MLA format	"Text of prompt" prompt. ChatGPT, Day Month version, OpenAI, Day Month Year, chat.openai.com.
MLA Works Cited entry	"Tell me about confirmation bias" prompt. <i>ChatGPT</i> , 13 Feb. version, OpenAl, 16 Feb. 2023, chat.openai.com.
MLA in-text citation	("Tell me about")



#### Conclusion

- Chat GPT and similar tools are here to stay

   we need to ensure they are serving us, not
   the other way around
- We need clear, transparent rules to guide ethical use
- If used properly, can take on some timeconsuming tasks – but human capabilities are still very much needed



Matt Somerstein @MPSomerstein

can we get some a.i. to pick plastic out of the ocean or do all the robots need to be screenwriters? doctors

12:26 AM · May 19, 2023 · 1.5M Views

11.7K Retweets 197 Quotes 48.9K Likes 399 Bookmarks



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Provide full citation of mentioned examples

# **Coming up at Austin Health Sciences Library**

#### Wednesday 14th June

- Discover your Austin Health Sciences Library 1.00-1.30 pm (webinar)
- UpToDate: an overview for Nurses 2.30 or 3.00pm (in-person)

#### **Thursday 22nd June**

• Finding grey literature & unpublished trials - 12.30-1.15pm (webinar)

#### Monday 26 June

• EndNote for beginners - 12.30-1.00pm (webinar)

Register at austin.org.au/training-consulting/





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