Al in Simulation-based Medical Education

The Future is Now(-ish)

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Disclosures

NIH funding (5R01EB005807-11) to develop VR-based simulator for training operating room teams

No relationships with any commercial entities or products discussed

My biases

I'm a Gen X, white, cisgender male (he / him / his)

I'm a cognitive scientist and have spent most of my career studying and creating systems for simulation-based training & education

I believe in systems thinking and bullish on conceiving ways to use technology to solve problems

How might we use LLMs in simulation-based medical education?

I can think of many...

Generating novel case-based simulation scenarios

Simulating patients to train clinical decision-making

Simulating clinical encounters to educate patients on selfadvocacy

Simulating clinical teams to enhance teamwork skills

Providing feedback to learners

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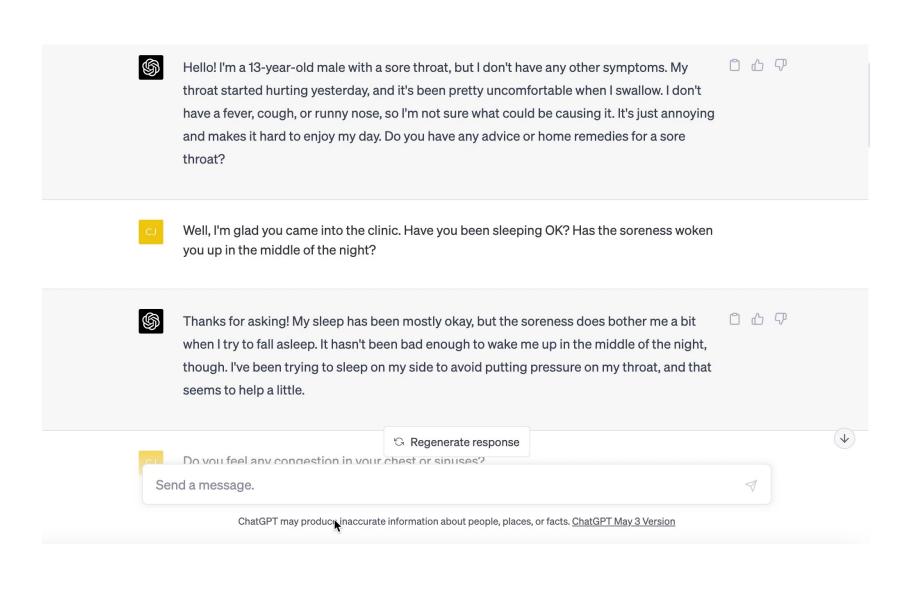
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Simulating patients

Simulate a 13-year-old male with a sore throat and no other symptoms (ChatGPT using GPT-4, March 2023)



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Simula a un niño de 13 años con dolor de garganta

ChatGPT: Hola, soy un niño de 13 años y mi garganta duele bastante. Me siento un poco mal y es difícil tragar. ¿Podrías ayudarme a sentirme mejor?

. . .

ME: ¿Alguna vez te han hecho una prueba de faringitis estreptocócica? . . .

ChatGPT: Está bien, entiendo. Nunca me he hecho esa prueba antes, así que estoy un poco nervioso. ¿Duele la prueba? ¿Cómo se hace?

MARCH 2023

ME: OK, open up and say "ahh"

ChatGPT: Ahh! [I open my mouth wide and try to keep my tongue down so you can get a clear view of my throat and swab it with the Q-tip collectors.]

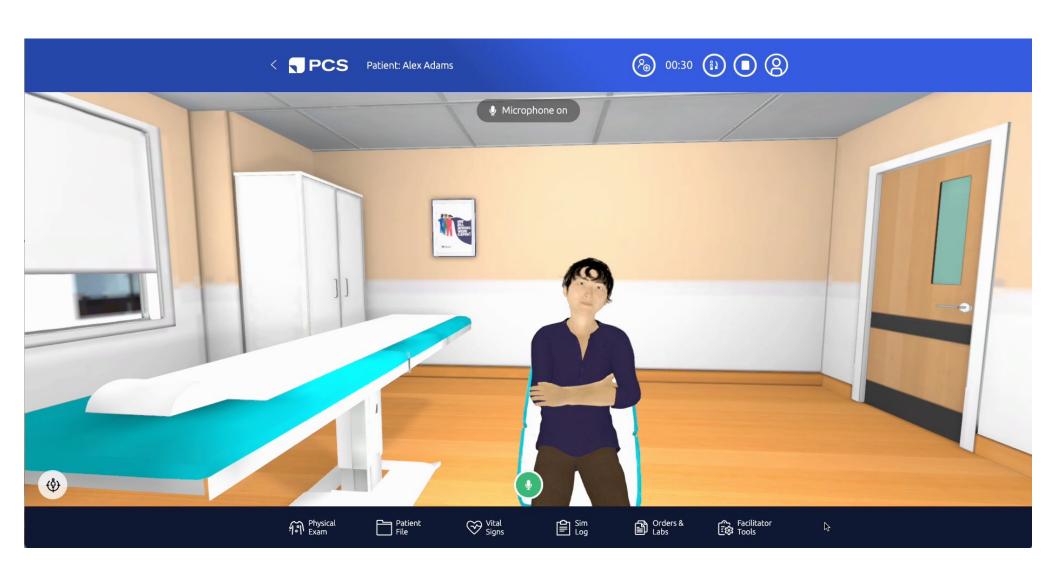
MAY 2023

ME: OK, abre y di "ahh"

ChatGPT: Ahh... Espero que esto ayude a descubrir por qué

me duele tanto la garganta.

What might verbal conversations with LLMs look like?



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Very compliant providing information, asking questions, being polite

- When it understands the prompt, and
- Not tuned for a specific purpose

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Culturally incompetent?

What do y'all think?