

Artificial vs. human intelligence and the future of academic detailing



Jerry Avorn, M.D.

Professor of Medicine, Harvard Medical School

Co-Founder and Special Adviser, NaRCAD

Chief Emeritus, Division of Pharmacoepidemiology and Pharmacoeconomics

Department of Medicine, Brigham and Women's Hospital

Chief Clinical Consultant, Alosa Health

Disclosures

- Neither I nor anyone at Alosa Health or in my research program at Brigham / Harvard accepts any personal payment from any pharmaceutical manufacturer.
- Alosa is a non-profit organization that receives no funding from any drug companies.
- I receive no payment for any of my academic detailing-related activities.

It's been less than a year...

- ...since ChatGPT suddenly burst into the public's consciousness.

The New Chatbots Could Change the World. Can You Trust Them?

“The new chatbots are remarkable but their answers can mix fact with fiction — just like the internet from which they learned.”

The New York Times, December 10, 2022

- “Large language models” and what they do.
 - What's the most likely next word?
 - scraping the internet to scoop up nearly all knowledge
- Early DoPE test
 - OpenAI.com
 - amazing response

Remarkably fast evolution of AI

- We should have seen this coming:
 - Years ago: computers first exceed the performance of the best human champions in chess, and in Go.
- Now: Nearly infinite ability to scan the entire internet to amass much of human knowledge
- Daunting capacity of AI is now demonstrating the ability to:
 - read x-rays, retinal scans, and pathology slides
 - pass tests that grade professionals (USMLE, LSAT)
 - formulate plausible differential diagnoses
 - synthesize and present medical knowledge

BUT: Astonishing lapses also occur.

- GIGO (Garbage In, Garbage Out):
 - Scraping wrong information from the internet → the wrong answers.
- Beyond that: “hallucinations” (confabulation):
 - the lawyer who based a whole case on ChatGPT and was thrown out of court
 - the advice given to a N.Y. Times reporter to leave his spouse
 - Not clear where this zany stuff comes from!
 - Can’t see inside the black box; that’s scary
- It’s not human, it has no judgement of its own.

How academic detailers are different, for now

- Evidence review and synthesis:
 - We and our evidence-focused colleagues read the literature *critically* and draw informed conclusions from it.
 - Our content is not just a regurgitation of everything that's been published.
- Educational encounters:
 - We can *interact* with the clinician to gauge their knowledge, attitudes, and practices, and tailor our conversations to accommodate that.
- Empathy:
 - We can understand the plight of the primary care provider and *relate to them* in our presentations.

But let's not get too smug

- These large language models have just had their first birthday since their public debut.
 - Think of all the one-year-olds you've known; they don't stay that way.
- They are getting better at a stupefying rate, in every respect.
- It may not be long before they can tailor their presentations to the verbal responses of prescribers
 - in terms of clinicians' knowledge, attitudes, and practices
 - They can even be pre-loaded with data on a person's current prescribing patterns, and focus the discussion on that

Some advantages machines may have

- **Cost:** once an academic detailing chatbot is licensed, it can work 24/7, with no morale problems and no demands for benefits or better working conditions.
- **Content:** the entity that deploys them can adjust the content of their presentations to fit its own fiscal needs.
 - (Some PBM programs using humans who claim to be academic detailers are already doing this.)
- **Liability:** who's responsible if the AD bot makes a bad clinical recommendation, and a patient is hurt?
 - Probably the clinician, or maybe no one; unclear (*cf.* current cases of self-driving cars hurting people)

We probably still have some time

...to demonstrate how what we do is better than a very sophisticated computer program. We can:

- emphasize the *human qualities* in what we do
- use *critical judgement* in thinking about the evidence we present, rather than just regurgitating summaries.
- *interact* with our colleagues in ways that draw on that fact that they're humans and so are we.
- embrace our *patient-centered values* that take precedence over other motivations and agendas.

In case you think I'm exaggerating what we face:

Here is what came out when I gave ChatGPT the following prompt, and nothing more. (using OpenAI.com)

“Write a paragraph about academic detailing.”

It took about 1-2 seconds to produce the following:

Academic detailing is a targeted educational strategy employed in the field of healthcare to improve the quality of patient care by providing evidence-based information and guidance to healthcare professionals. This approach involves expert educators, often from academic institutions or specialized organizations, visiting healthcare providers and engaging in one-on-one or small group discussions. During these interactions, they share the latest clinical research, guidelines, and best practices, aiming to enhance the understanding and adoption of evidence-based medicine. Academic detailing is a personalized and interactive method that fosters dialogue and supports healthcare professionals in making informed decisions about treatments, diagnostics, and healthcare management. It has proven to be an effective tool for promoting the integration of the latest medical knowledge into clinical practice and ultimately improving patient outcomes.

Not blown away yet?

Here is what it took another 1-2 seconds to produce when I gave it the following prompt:

“Write about academic detailing in the form of a Shakespearean sonnet.”

**In academic realms, a tale to tell we find,
A strategy of learning rich and fine,
Academic detailing, scholars' grace,
To guide and nurture wisdom's sweet embrace.**

**With knowledge vast like Shakespeare's quill so wise,
Experts like bards in healthcare's realm arise,
They visit, share, and teach in earnest quest,
To aid physicians' skills – their very best.**

**In one-on-one or group with care they steer,
Through evidence and guidelines, make it clear,
To healthcare minds the latest truths unveil,
In personalized discourse, wisdom sails.**

**Thus academic detailing takes the stage,
In healthcare's script: a guiding golden page.**

...and that's from a one-year-old.

We have our work cut out for us.

Humans wanted:

[www. NaRCAD.org](http://www.NaRCAD.org)

www. DrugEpi.org

www. AlosaHealth.org

Avorn [@post.Harvard.edu](mailto:avorn@post.harvard.edu)

J. Avorn, [Powerful Medicines: The Benefits, Risks, and Costs of Prescription Drugs.](#)