

VIRTUAL PATIENT NAVIGATORS: TRUSTWORTHY AI FOR PATIENT EDUCATION

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The screenshot displays the Alelo ENSKILL Cancer Center Navigator interface. At the top left is the Alelo ENSKILL logo, and at the top right is the title "Cancer Center Navigator" with speaker and settings icons. Below the title is a "Transcript" section containing a message bubble: "Hi, I'm Mary, your Cancer Center Resource Navigator. What's going on that I can help you with today?". The main content area features a video of a woman in blue scrubs sitting at a desk. A microphone icon is visible in the bottom right corner of the video frame. At the bottom of the interface, there is an "Explorer" button on the left and "Page 1 of 1" with navigation arrows on the right.

[Health misinformation is a growing problem](#). It can be hard for patients to tell what information is true and what is not. The problem is greater for patients with low health literacy. [Nine out of ten adults in the United States have low health literacy](#), and this causes worsened health outcomes and strains the healthcare system. [People with low health literacy are more likely to rely on less trustworthy sources](#) such as social media, celebrity websites, and product promotion sites. Health systems that wish to provide reliable health information to their patients must compete with misinformation that [tends to get more engagement](#) in the form of views, likes, shares, etc.

Can generative AI help patients get access to relevant and reliable health information? Unfortunately, some applications of generative AI have a tendency to "hallucinate" responses that are made up or just plain wrong, and [this is a significant risk in healthcare applications](#). Experts who have studied the use of generative AI in healthcare have argued that ["it may be some time-or perhaps it will never be time-for practices to reply directly to patients without a human in the loop."](#) Yet human-in-the-loop supervision by medical professionals is time-consuming and introduces its own risk, since [humans tend to overly trust machine-made pre-decisions](#), a phenomenon known as automation bias.

Virtual patient navigators are an alternative approach that uses generative AI to provide access to trustworthy health information, without requiring human-in-the-loop supervision. Virtual patient navigators are AI-powered avatars or bots that talk with patients and caregivers, answer their questions, and connect them with resources. They offer the advantages of generative conversational AI such as contextual understanding and naturalistic interaction, while reducing the risks of hallucination. Patients benefit from immediate 24/7 access, while health professionals are relieved of the burden of having to respond to routine email questions from patients.

Patient navigators can be hosted within patient portals, but do not have to be. [According to a recent study](#), 43% of patients never access patient portals, and of those who do access a portal only 32% download health information. This suggests that health systems should not limit virtual navigators to patient portals but should also be made available to the broader public. Many are already providing health information content to the public via websites and YouTube, and navigators will help direct people to content that is most relevant to them.

Alelo's work on virtual patient navigators was inspired by our work using AI to train patient navigators and community health workers, which was recognized as a [winner of the International E-Learning Awards](#) and a finalist of the XPRIZE Rapid Reskilling competition. In Alelo's training for patient navigators, trainees practice their skills with conversational avatars playing roles as patients and caregivers. With virtual patient navigators the roles are reversed—the users are patients or caregivers and the avatars play roles as patient navigators. We provide our virtual patient navigators with communication skills that are similar to the skills that human patient navigators use when working with patients.

The following is an example dialogue between a cancer patient and a virtual patient navigator. The navigator applies skills similar to those that a human patient navigator employs: It encourages the patient to describe their concerns, shows empathy and offers reassurance, gives explanations, and provides relevant educational resources. A demonstration video may be found at <https://youtu.be/KA2lvq4kwZ0?si=8GL6YcBvoMbGWKSB>.

- Hi, I'm Mary, your Cancer Center Resource Navigator. What's going on that I can help you with today?
- Mary, I'm undergoing treatment for breast cancer and I have some symptoms that I am concerned about.
- I understand. It is completely normal to have concerns during treatment. I can help you find some resources. Before we continue, I need to tell you that it is important for you to notify your doctor of any new symptoms or complications. Could you tell me more about what information you're hoping to find today?
- Well, I'm feeling tired all the time. I don't have much energy now.
- I'm sorry to hear you're experiencing fatigue. It's a common side effect during cancer treatment... We have a helpful webpage on managing fatigue during cancer treatment. Do you want me to share it with you?

Like human patient navigators, virtual patient navigators operate within the limits of their role. Although navigators answer questions, they do not attempt to offer medical advice. Instead, they refer the user to relevant educational resources that have been approved by the health system. These might be on the health system's website, YouTube channel, or another medical resource that the health system has approved. It always refers to these approved resources when responding to patient inquiries, which minimizes the risk of unsupported hallucinations. It answers many common questions itself, but if the patient's situation requires attention, it refers the patient to their care team.

Virtual patient navigators make use of educational content that health systems have already developed and curated, and select material that is most relevant to the patient's situation or care journey. They offer helpful suggestions, instead of leaving patients to search for information on their own. Navigators use everyday language that patients understand, instead of medical terminology that might be unfamiliar to the patient. This can be particularly beneficial for patients with low health literacy.

The human-like persona, and the ability to engage in natural conversation, make virtual patient navigators very engaging. This helps navigators to compete with engaging health misinformation that patients may find on the Internet.

For more information about how to set up a virtual patient navigator for your health system, contact Alelo at inquiries@alelo.com.

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