

Harnessing Generative AI to Amplify Patient Voices in Drug Development PARTNERING | FUNDING | INNOVATION | KNOWLEDGE | LICENSING | INVESTIG

The development of new challenging drugs is а process, involving substantial of investments time, resources, and expertise. However, one crucial stakeholder group is often overlooked or underutilized in this process: the patients themselves, along with their



caregivers, families, and friends. These stakeholders possess a unique and invaluable perspective on the disease, its impact on daily life, and the unmet needs that drive the search for new therapeutic solutions.

Generative artificial intelligence (AI) has the potential to revolutionize the way patient perspectives are integrated into the drug development continuum. By harnessing the power of these advanced language models, pharmaceutical companies and research organizations can amplify patient voices, fostering collaboration and co-creation at every stage of the process.

This white paper explores how generative AI can facilitate the critical role that patients play throughout the drug development journey, from idea and target identification to product launch and post-marketing surveillance. By embracing a patient-centric approach powered by generative AI, stakeholders can gain deeper insights into the real-world challenges faced by those living with the disease, identify key symptoms and priorities, and develop treatments that truly address their needs.



Generative AI can assist in generating patient-friendly educational materials, facilitate twoway communication between researchers and patient partners, co-create clinical trial designs and patient-reported outcomes, and analyze real-world data to gather insights on patient experiences and priorities. This technology can bridge the gap between scientific research and patient needs, enabling more meaningful collaborations and driving innovation towards truly patient-centric solutions.

By recognizing the invaluable contributions of patients and their caregivers, and leveraging the capabilities of generative AI, the pharmaceutical industry can unlock a wealth of insights, forge stronger partnerships, and ultimately enhance the lives of those affected by disease.

Preclinical Stage:

- Generate patient-friendly materials to educate potential patient partners about the disease, proposed drug mechanism, and preclinical research.
- Analyze patient forums and social media to identify suitable patient advocates and understand their experiences and priorities.
- Develop conversational agents to facilitate interactions between researchers and patient partners, allowing patients to provide input on research directions and study designs.

Clinical Trial Stage:

- Collaborate with patient partners to cocreate recruitment materials, informed consent documents, and study protocols using generative AI to ensure patient-centric language and design.
- Generate tailored educational content and interactive tools to enhance patient partners' understanding of the clinical trial process.





• Analyze patient-reported outcomes and feedback from patient partners during trials to identify areas for improvement and incorporate their perspectives.

Market-Ready Stage:

- Work with patient partners to co-develop patient-friendly educational materials, adherence support programs, and conversational agents using generative AI.
- Utilize generative AI to analyze real-world patient data, social media, and online forums, enabling patient partners to provide insights on patient experiences, adverse events, and potential product improvements.
- Engage patient partners in co-creating post-marketing surveillance strategies and materials using generative AI to ensure continuous patient-centric monitoring and support.

Throughout the drug development continuum, generative AI can facilitate collaboration between researchers, healthcare professionals, and patient partners. This includes generating materials for patient education, fostering two-way communication channels, and empowering patients to actively contribute their unique perspectives, experiences, and priorities.

By involving patients as integral members of the drug development team, generative AI can help bridge the gap between scientific research and patient needs, ultimately leading to more patient-centric and effective drug development processes.

Author's Background:

With a background in managing patient engagement programs at JDRF and leading the PCORI patient engagement initiative, Martin brings extensive expertise in incorporating patient perspectives into healthcare innovation. Additionally, Martin has played a pivotal role in supporting the launching of patient engagement programs at several prominent organizations, including the Alliance for Aging Research, the Reagan-Udall Foundation for the FDA, The Sickle Cell Disease Association of America, the Celiac Disease Foundation, and others. This diverse experience underscores Martin's commitment to fostering patient-centered approaches across various disease areas and healthcare domains.