Understanding Tech-Enabled Clinical Trials

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The development of a single new drug is an arduous journey.

Taking up to 12 years and costing an estimated

$1.2B

the clinical trial process requires strict rules, skillful scientists, countless approvals from regulators, and ethical considerations for participants.

But even with all these resources in place there are still many hurdles that face pharma companies when it comes to planning trials, recruiting patients and doctors, and launching successfully. Deploying modern-day technology is the surest route to accelerating time to market and building modern-day clinical trials.

For the past several years, Generative AI has started to transform the healthcare industry, providing significant opportunities for improving patient care and results. With its capacity to assess substantial datasets, upgrade medical imagery, replicate various clinical conditions, and foresee outcomes, Generative AI can empower highly customized treatment plans, allow speedier and economical medication exploration, and strengthen the entire healthcare system. In pharma specifically, Generative AI has placed the sector on the cusp of a major disruption.
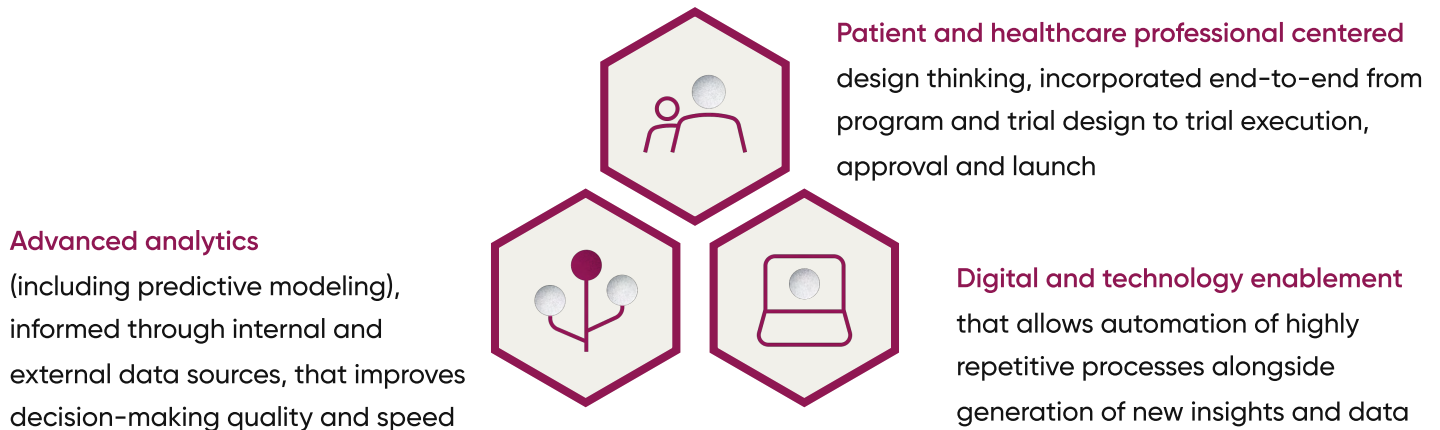
Tools like ChatGPT have the potential to revolutionize drug discovery, clinical trial design and recruitment by allowing pharmaceutical companies to accelerate decision making during early drug development phases. This new era of tech-enabled clinical trials can fundamentally change how clinical and feasibility teams within pharma organizations work and gather insights.

In recent years, companies in the life sciences and biotech space have begun leveraging AI to increase efficiency, reduce costs, and improve patient outcomes.

Generative AI is one of the most promising technologies in this field fueling how clinical and feasibility teams engage patients, gather medical data faster and more accurately than before, and better target treatments for individual patients. These tools can also help streamline regulatory affairs processes by automatically collecting and analyzing data from clinical trials and drug development projects.

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Tech's Evolving Role

Patient and healthcare professional centered design thinking, incorporated end-to-end from program and trial design to trial execution, approval and launch

Advanced analytics (including predictive modeling), informed through internal and external data sources, that improves decision-making quality and speed

Digital and technology enablement that allows automation of highly repetitive processes alongside generation of new insights and data

500 days faster and 25% reduction in cost for drug development with the help of technology

[1] https://www.mckinsey.com/industries/life-sciences/our-insights/the-pursuit-of-excellence-in-new-drug-development

Three Areas to Consider When Deploying Technology

1. Site Selection & Principal Investigator Profiling

Generative AI algorithms shine when it comes to risk analysis and prediction, a major advantage in clinical trials. Through examining previous data, AI can determine realistic patient enrolment rates, evaluate treatment outcomes and spot any safety issues that may arise. This helps sponsors make wise choices with their resources while managing risks before they become an issue—ultimately leading to higher trial success rates.

2. Trial Design

The wrong choice of study participants and subpar recruitment tactics, along with an incapability to adequately observe and train the volunteers throughout trials, are the leading elements behind high trial failure rates. This results in drug development cycles becoming progressively less efficient - even as pharma R&D investments continue rising - meaning far fewer new medications eventually make it to store shelves. Fortunately, artificial intelligence has progressed enough for it to now be used in actual circumstances to help guide humans making choices.

3. Diversity & Inclusion

ChatGPT innovations have already shown promise when it comes to leveraging AI for advancing population health equity initiatives. By leveraging AI techniques such as NLP and Machine Learning, the industry can minimize bias and access remote populations to precisely align trial participants with the right medication. This approach promotes fairness, equality and inclusivity by making it easier for people to get their hands on life-changing drugs.

The Benefits of Tech-Enabled Clinical Trials

AI is transforming clinical trials and unlocking new possibilities in drug discovery and development. Key benefits to tech-led clinical trials include:

Accelerated Time to Market

AI is transforming the clinical trial landscape by rapidly automating time-consuming and laborious tasks. AI can sift through vast amounts of data to uncover suitable candidates for trials, while behavior analytics provide insights into patient behavior. Additionally, AI aids in efficient internal communication and resource utilization, so that no efforts are wasted.

Lower Costs

By leveraging AI and predictive analytics, research teams can save time and money on essential components of clinical trials such as safety monitoring and patient recruitment. Additionally, AI can help streamline the trial design process and even uncover promising new drug compounds.

Enhanced Data Evaluation

Researchers can leverage AI algorithms to quickly scan through huge datasets and uncover subtle, hidden patterns that may have gone unnoticed or taken too long for humans to spot. For example, artificial intelligence models can be employed to anticipate the potential danger of a new drug before trials begin, resulting in greater safety assurance as well as preventing companies from investing time and money into useless projects.

Harnessing Real-time Insights

Having up-to-date data and analysis is paramount in the complex world of pharmaceuticals. Establishing a centralized platform to allow for collaboration with specialists and to share previous findings can help break down informational roadblocks, enabling efficient innovation and more speedy problem solving. What's more, such a method provides easy access to knowledgeable professionals while also memorializing their knowledge for later use; consequently, improved data retrieval translates into improved productivity - something that R&D companies understand all too well as prolonged hold ups due to insufficient info can lead to delayed treatments which subsequently affect both patients' health and profits.

Generative AI offers a wide range of opportunities for pharma companies looking to increase efficiency while improving patient outcomes. It is imperative that organizations take the necessary steps now in order ensure efficacy and safety reliability when it comes to incorporating this technology into their systems—but with careful implementation, this technology has the potential to revolutionize drug discovery and clinical trial recruitment processes as we know them today.

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