

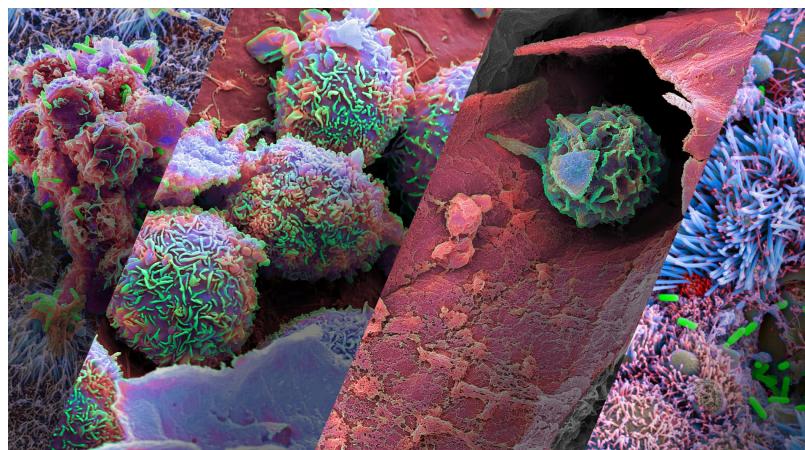
INDUSTRY NEWS

Sorting Opportunity From Hype in Healthcare AI

Venture capitalists seek startups with proprietary data, teams well-versed in both healthcare and technology

By Brian Gormley

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Biomedical startup Vivodyne applies artificial intelligence to data from lab-grown tissues to improve predictions about the success of drugs in clinical trials. PHOTO: VIVODYNE

Venture capitalists increasingly must cut through hype to land the best startups in healthcare AI.

Artificial intelligence's healthcare potential is significant: faster diagnostics, novel treatments, streamlined administration and less burnout. But obstacles to success are sizable and startups face pressure to deliver on their promises.

Here are some of the things venture capitalists look for in healthcare AI startups—and the pitfalls they try to avoid.

What works: proprietary data

Healthcare AI startups can tap public databases, but often that isn't enough to build a sustainable advantage, some investors said. Yet, amassing exclusive data isn't easy because hospitals, insurers, drug companies and other institutions hold much of the medical industry's information.

Startups that find ways to acquire or generate their own data stand out, especially if their repository is differentiated enough to attract interest from other companies.

Biotechnology company A-Alpha Bio says it has used its technology to build a database of protein-protein interactions. Through machine learning, it gleans insights to discover medicines and collaborate with drug developers.

The Seattle-based company, for example, has teamed with drugmaker [Gilead Sciences](#) to discover medicines that neutralize HIV, even when it mutates to evade attack.

"There is enormous diversity with HIV viruses," co-founder and Chief Executive David Younger said. "The risk is, the patient might at first respond to a therapy, but the virus evolves and escapes."



Andrei Georgescu, co-founder and CEO of Vivodyne PHOTO: VIVODYNE

Biomedical startup Vivodyne applies AI to data from lab-grown human organ tissues to improve predictions about which medicines will succeed in clinical trials. Scientists have had limited access to human data historically, co-founder and CEO Andrei Georgescu said.

Very few clinical trials, for instance, involve routine biopsies, he said. Philadelphia-based Vivodyne has grown more than 20 types of human organ tissues, each the size of a large biopsy.

“The bottleneck is the data in biotech,” Georgescu added. “We don’t have enough.”

What doesn’t work: exaggerated claims

Drugs uncovered through AI are entering clinical trials. But these are early days and humility is in order, investors said.

Startups need to form a hypothesis on how their data are uniquely useful in solving a challenge in human health, said Caleb Appleton, a principal with Bison Ventures.

“That’s the piece that often gets glossed over,” Appleton said. “From an investor lens, you need to approach the situation with pragmatism.”

Dylan Reid, a partner with Zetta Venture Partners, said AI models are starting to generalize, but applications scientists build on top of them are highly specific to the biology or disease area of interest to them. An application effective for one type of drug, such as small molecules, likely won’t generalize to other kinds, such as antibodies, he said.

“Anytime somebody tells you they’re going to ‘solve’ biology with AI, you should close your checkbook,” Reid said.

Biotech company DeepCure uses AI to discover medicines that hit challenging biological targets. The Boston-based company expects to move its first medication, for advanced rheumatoid arthritis, into clinical trials later this year, co-founder and CEO Kfir Schreiber said. Venture capitalists are looking increasingly at the output of biotech AI technologies, he said.

“It has become pretty hard for investors to differentiate between platforms,” Schreiber said. “The assets are the best proof that the platform works.”

What works: startup teams with medical and tech savvy

Healthcare is attracting tech founders, but breaking into the sector is difficult for those without existing relationships and knowledge of industry dynamics.

Companies selling to healthcare providers, for example, should understand clinicians’ workflow and how their technology can make the most impact with

the least amount of disruption, observers said.

Hospitals, health insurers and other medical organizations field many inquiries from startups but adopt technology cautiously, some said.

“What I think AI vendors should know when they sit across the table from a healthcare organization is, they’re already being looked at with a skeptical lens,” said Shannon Germain Farraher, a senior analyst with research and advisory firm [Forrester Research](#).

Yuanling Yuan, a partner with venture investor SignalFire, said she gets pitches from healthcare-AI startups composed only of technologists. Even though it is possible to succeed without medical-sector expertise, the probability of success is much higher if the company has people who have worked in the healthcare industry or have sold into it, she said.

“We look for people who have done this before,” Yuan added.

What doesn’t work: failing to account for incumbents’ clout

Entrepreneurs must identify medical customers’ technological needs and determine whether existing players, such as electronic medical-records companies, are already poised to fill them, said Keith Figlioli, a managing partner with venture investor LRVHealth, adding that he sees startups that don’t account enough for incumbents’ power.

Incumbents are embedded in the medical system and are well-positioned to deploy AI offerings, he said. But they have many priorities and may have only part of the solution to certain problems, creating opportunities for startups to help resolve them fully, he said.

“There’s definitely gaps in the marketplace newcomers can exploit; you just have to be really thorough in how you evaluate that,” Figlioli added.

Startups’ AI should enable something that was previously difficult or impossible to achieve, some venture capitalists said.

“We are looking for AI to go deep and fundamentally change the business,” said Gregg Hill, co-founder and general managing partner of Parkway Venture

Capital. “There’s a lot of AI companies that are just going to go away because they’re delivering something that’s not powerful enough.”

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