The New York Academy of Sciences

PRIVATE CAPITAL RESEARCH INSTITUTE

When the Research Lab Meets Change Capital:
Impact and Outlook of PE in Health Innovation

Taking the Temperature of Health Technology Investment

Panelists

Abrar Mir
Co-founder and Managing Partner,
Quadria Capital

Charles Ruprecht
Principal,
GHO Capital

Kevin Tracey
President & CEO, The Feinstein Institutes for Medical Research

Paula Volent
VP & Chief Investment Officer,
The Rockefeller University

Moderator

Josh Lerner, PhD
The Jacob H. Schiff Professor
Harvard Business School
Director, Private Capital Research Institute

Executive Summary

People have always gotten sick, and will continue to do so. Treating those illnesses is both a critical social good and a major business sector, and investors have been helping to fund important health innovations for centuries. Sudden, deep cuts to US biomedical research, the immense market excitement about artificial intelligence, and shifting geopolitical forces have now upended much of the biomedical research and development enterprise, creating a host of new pitfalls and opportunities.

For decades, curiosity-driven research has generated a stream of discoveries that have revolutionized healthcare. With that funding dwindling, many researchers are now shifting their focus to applied research aimed at creating specific products and technologies. That trend is especially pronounced in Asia, with China becoming a powerhouse of healthcare-focused innovation.

Artificial intelligence is already helping to streamline some aspects of medical administration and augmenting doctors' decision-making to improve the quality of care. However, the rush of investment money to AI-focused projects may shortchange other strategies, to the detriment of both patients and investors.

To succeed in the current market, healthcare investors must proceed with cautious optimism. Instead of following a single strategy based on predictable regulatory approval pipelines, they need to evaluate each product and technology individually against its potential risks.

Key Highlights

- US cuts to funding for basic research and the severing of ties to China have upended much of the healthcare innovation development pipeline.
- At many academic institutions, researchers are now being trained to refocus their work toward applied projects with clearly defined marketability.
- China has embraced the rush toward applied research and is poised to dominate healthcare innovation in the coming years.
- Artificial intelligence is already transforming patient care and streamlining healthcare administration, and it may help in drug discovery and development in the coming years.
- Investors' current fixation on AI has starved other areas of the healthcare sector of funding, presenting both problems and opportunities.
- Instead of a "one size fits all" approach, healthcare investment now calls for evaluating each opportunity in its specific context.

Panel Summary

In the final session of the discussion series on Private Capital and Discovery: Strategic Investing in Scientific Innovation, leaders of research institutions and principals from major investment firms tackled the subject of health innovation. The meeting, cosponsored by The New York Academy of Sciences and the Private Capital Research Institute, covered a range of challenges and opportunities for biomedical research, biopharmaceutical development, and health technology in the context of major changes and disruptions.

One major force reshaping the field is the deep, abrupt cuts the US has made to federal science funding under the current administration. Government and academic institutions that previously generated discoveries spawning entirely new industries are now struggling to fund their operations. That's forcing these organizations to overhaul their strategies, shifting their focus from curiosity-driven research to application-driven product development that can attract private investment.

Nowhere is that trend clearer than in China, which saw nearly all of its research collaborations with the US vanish. In response, the Chinese government has reconfigured its entire biomedical research enterprise to emphasize applied projects. Instead of starting with interesting scientific problems, researchers are now encouraged to begin with products and healthcare outcomes in mind, and work toward commercializing their discoveries from the start. With Asia now estimated to have 60% of the world's disease burden, that approach has the advantage of addressing urgent local needs, ranging from new treatments to improving access to basic healthcare.

Meanwhile, US institutions are working to train their scientists in the skills needed to attract investors to their findings. While private equity can fund some high-risk projects, backers of those efforts still expect to see a clear path to profit. Besides seeking investments, some academic centers are also pursuing other financing mechanisms, such as structured credit.

The group also addressed the impact of artificial intelligence, both in its potential to drive new discoveries and the difficulty of funding anything else in a market fixated on AI. Currently, AI-based systems are helping reduce costs for administrative tasks, such as managing electronic medical records. Some projects are also helping accelerate diagnosis, not by replacing doctors but by augmenting their decision-making. Both of those trends are likely to continue. While using AI for drug discovery and other early-stage innovation is also a hot topic, those strategies haven't yet proven themselves. With so much biomedical research data already in the public domain, and more pouring in daily from genome sequencing and profiling efforts, AI-based data mining may eventually help identify entirely new disease treatment strategies.

Estimates vary, but the group agreed that a majority of new investment money for innovation is now going toward AI-based projects. That poses a special challenge for researchers and companies seeking funding for other development strategies, as both government and private money for those efforts has become scarce. Companies that have focused on providing software as a service have also fared poorly amid the rush to AI, but those specializing in healthcare may be less affected. In particular, electronic medical record systems often use proprietary datasets that remain inaccessible to AI.

Regardless of the technical underpinnings of a project, investors in any aspect of health innovation need to be wary of hype. Those investing in momentum may be able to glean short-term returns on any exciting discovery, as a rush of other backers will inevitably raise values, but serious healthcare investors must be more disciplined.

The new focus on applied research and marketability does run the risk of crowding out important science. Speakers cited the example of gene editing. That immensely powerful tool, which is now the focus of billions of dollars of investment, sprang from curiosity-driven research on harmless bacteria: precisely the type of work now being slashed from government budgets. The group conceded that private equity cannot replace public funding for such long-term projects. However, it can help address pressing problems such as a lack of access to healthcare. Speakers agreed that balancing short-term needs with long-term progress is a philosophical issue outside the scope of the meeting.

Geopolitical barriers can also affect investment strategies, though in many cases, companies are finding ways to work around those problems. China is again a prominent example, where the new push for applied research is generating numerous new drugs and technologies. The new antipathy between the US and China can block direct transfer of these products, but not if they're routed through European partner companies first.

In the face of all of these challenges, speakers emphasized that investing in healthcare innovation requires diligence and tailored strategies. Rather than adopting a single approach and trying to apply it to multiple projects in the sector, investors should evaluate each opportunity against its unique risks.

About The New York Academy of Sciences and the Private Capital Research Institute

"When the Research Lab Meets Change Capital: Impact and Outlook of PE in Health Innovation" was a live virtual roundtable presented by The New York Academy of Sciences and the Private Capital Research Institute; sponsored by Ropes & Gray.

The New York Academy of Sciences stands as a pivotal platform for advancing scientific knowledge and fostering innovation. Established in 1817, the Academy has long been at the forefront of bridging scientific research with practical application.

Based at Harvard Business School, the Private Capital Research Institute's mission is to encourage research about private capital's potential to be a constructive force to power economic development, innovation, and business transformation.

While the Academy excels in fostering scientific discovery and interdisciplinary collaboration, PCRI focuses on enhancing the understanding and impact of private capital investments. This collaboration allows for a unique intersection where cutting-edge scientific research meets strategic investment insights.

Both non-profit organizations seek to present substantive, fact-based research in a form that maximizes broad accessibility of these ideas and their applicability to the concerns of investors, business leaders, and policymakers, investors, as well as influential intermediaries.