

## It's tiny biotechs — not big drug makers — that fear 'nuclear winter' from Pelosi's drug pricing bill

By NICHOLAS FLORKO / NOVEMBER 12, 2019

No one asked Paul Hastings what he thinks about Speaker Nancy Pelosi's major new drug pricing legislation, or how it might affect his company, Nkarta Therapeutics. No one asked Bassil Dahiyat, the CEO of Xencor, or Dr. Barbara Weber, who helms Tango Therapeutics, either.

But they're all scared stiff.

They and other leaders of small biotech companies — most of whom stick to science, not politics — are speaking up now because they are uniquely worried that the policies included in Democrats' marquee bill will dry up the venture capital funding that drives their industry and, in turn, make it impossible for the similarly small startups that turn basic research into new medicines to get off the ground.

"If they don't educate themselves on what this bill could do to this industry, they are doing their constituents a disservice," said Hastings, referring to members of Congress. "This bill could have devastating effects on our industry, period. End of discussion."

"It's storm clouds on the horizon," said Dahiyat.

Theirs is an important perspective — and one that, until now, has been virtually erased from the debate over the landmark legislation. That conversation has focused almost entirely on large pharmaceutical companies — enterprises that, at least as many supporters of the legislation argue, would be able to withstand diminished investments or other financial changes. In more than 20 hours of hearings on Pelosi's bill, small biotech firms have only been mentioned a handful of times.

It's true that Pelosi's bill takes aim at prices for existing drugs — and

therefore, that its most direct, immediate impact will hit those drug makers who make major medicines like Humira or Harvoni.

But more than a dozen experts, venture capitalists and biotech veterans who spoke with STAT acknowledged that smaller biotechs would ultimately be hit hardest by the bill's policy changes. None of the small biotech CEOs is peddling pricey drugs — in fact, none of them even has a drug of their own on the market. They're still laboring in the lab, trying to

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discover new treatments for cancer, HIV, and Alzheimer's. It is venture capital funding that keeps their lights on — venture capital funding that could disappear if investors don't see high profit margins as an achievable outcome.

"We could end up shooting ourselves in the foot," said Andrew Lo, an economist at Massachusetts Institute of Technology who studies biotech investors' behavior. "These efforts, while they stem from very reasonable and laudable motivations, they will have an unintended consequence of creating a chill on funding."

Even the most progressive economists acknowledged the potential impact on the biotech sector.

"Will we have fewer of these biotech startups? My guess is we probably would," said Dean Baker, an economist at the Center for Economic and Policy Research, who is known for his progressive stances including support for Pelosi's bill and "Medicare For All."

Pelosi's drug pricing bill would drastically cut the price of certain high cost drugs. The bill would allow Medicare to negotiate with drug companies over the price of up to 250 drugs per year, and the maximum the government could pay for drugs is 120% of the price charged in six countries. If drug makers refused to agree to that price, the government could virtually put a drug company out of business via huge taxes.

The plan specifically targets the costliest drugs to the Medicare system that have no competition, drugs like AbbVie's rheumatoid arthritis drug Humira, which retails for more than \$2,000 in the U.S. but costs roughly \$500 in other countries, according to a recent report from the House Ways and Means Committee.

The Congressional Budget Office has estimated that the bill would take up to a trillion dollars out of the industry and result in eight to 15 fewer drugs being developed in the next 10 years. But industry estimates are much higher: A recent study from the California Life Sciences Association estimated that 88% fewer drugs would have been developed over the last 10 years by small biotech companies in California if the Democrats' drug pricing legislation had already been law.

Henry Connelly, a spokesperson for Pelosi, told STAT in a statement that H.R. 3 would "require HHS to

reward genuine innovation, while protecting American patients from price gouging.”

“People are dying because they cannot afford the out-of-control prices of their prescription drugs right now. H.R. 3 simply insists on the basic measure of fairness that American seniors and families not be charged more than what drug corporations charge for the same prescriptions overseas,” Connelly added.

CLSA’s analysis is one of the few that has tried to quantify exactly how hard Pelosi’s plan would hit small biotech companies. None of the key congressional committees has brought in any company representatives for testimony, or solicited feedback from them directly. Instead, they have mostly relied on feedback from larger trade groups like PhRMA or BIO.

In conversations with STAT, multiple biotech CEOs expressed frustration that they’ve been virtually erased from the debate about this legislation on Capitol Hill. And they’re even more frustrated when they hear politicians say the plan won’t impact them, as Rep. Anna Eshoo (D-Calif.) implied recently.

“I have more biotechnology in my congressional district than any other place in California, than any other place in the country. ... I wouldn’t have my name on the bill if I thought we were going to kill innovation in our country,” said Eshoo, the health subcommittee chair of the Energy and Commerce Committee.

Nkarta’s Hastings didn’t hold back when asked what he thought about that kind of statement, even cursing to express his frustration with the idea.

All the CEOs STAT spoke with said they were paying attention to what was happening in Washington.

“It’s absolutely being talked about in the venture-backed world,” said Adam Rosenberg, CEO of Rodin Therapeutics. While Rosenberg admitted he was pretty far removed from drug pricing policies, he too,

delivered a similar, albeit more muted version of Hastings’ message: Sweeping drug pricing reforms could quash biotech investment.

Biotech CEOs say ignoring them is a huge mistake, because if you care about innovative drugs, you have to care about the small biotech industry.

“If people want the next wave of cancer drugs or any Alzheimer’s drugs or anything else, if people want to continue with the advancements that we’ve made in health care in the last 20 years, this is where it is coming from,” said Weber, the CEO of Tango Therapeutics, who also previously held positions at the University of Pennsylvania and GlaxoSmithKline.

It’s true that increasingly the arduous work of discovering treatments for the most intractable diseases isn’t occurring at multibillion-dollar pharmaceutical corporations, like Merck or Eli Lilly, it’s occurring at tiny biotech startups funded entirely by investors betting that these companies will succeed and eventually make a profit.

In fact, 70% of clinical trials are conducted by small biotechnology companies, according to data from BIO.

The modern drug development process goes like this: A discovery is made at the National Institutes of Health or in an academic lab, small biotech entrepreneurs spin the idea into a company and try to test the idea in the clinic, then the ideas that work are licensed out to larger drug companies that can take the drug to market — or the entire company is acquired by the larger drug company.

It’s a “fragile ecosystem,” said MIT’s Lo. “If you take any one part and reduce or eliminate it the whole thing comes to a crashing halt,” he added.

All of the companies STAT spoke with are playing their prescribed role in that ecosystem: They were taking on complex diseases and testing novel new ideas, the likes of which have never hit pharmacy shelves.

Nkarta is trying to engineer “natural killer” cells that doctors can take off a shelf, ready-made, to inject into a patient to cure their cancer. Tango is trying to tackle cancer too; it’s using the gene editing tool CRISPR to develop drugs that genetically target cancers. Rodin is studying how a degrading connection between nerve cells could be behind diseases like Alzheimer’s and schizophrenia. Xencor, which is the furthest along of the group and has licensed out its technology to a larger drug maker, Alexion, for use in one FDA-approved drug, is hoping the antibodies it’s developing could be used to treat everything from cancer to HIV and the flu.

Democrats have insisted that this early-stage research isn’t being done at drug companies, but rather at the NIH and in academic labs, in an attempt to counter any criticism that the legislation might diminish research. And many of those initial ideas did, in fact, come from academia and the NIH. Xencor, for example, was spun out of Caltech, Nkarta out of St. Jude Children’s Research Hospital.

But these companies insist that those academic labs could never have taken those initial discoveries and advanced them to where they are today. These companies have spent years, and millions of dollars refining these initial discoveries with the ultimate goal of testing them on humans.

To fund that work, these companies rely on venture capitalists — the business veterans, scientists, and doctors who make a living investing money from rich families, pension funds and university endowments.

“We don’t exist without that,” said Dahiyat, referring to venture funding. “You can’t get the large enough amounts of money to fund high risk biological research. ... There’s no other source.”

It’s not easy to raise the millions needed to take an initial idea discovered in an academic lab and start testing it on humans.

Raising venture capital funding is like a colonoscopy, “although it’s much longer than a colonoscopy,” said Nkarta’s Hastings.

Potential investors probe every orifice of a company, from its patent applications to the resumes of its senior leadership — all to ensure they make the best bet on a company that’ll eventually net a big payout. Hastings held over 100 meetings for his company’s most recent round of funding, which ultimately raised \$114 million, enough to fund the company’s first clinical trials.

Many companies aren’t as lucky as Hastings’: Industry veterans call that phase, when a newly formed company starts to seek its first round of much-needed investment, the “valley of death,” because so few companies actually succeed in that search.

There are scant statistics on how many companies die in the valley,

but the fear of being marooned is real in the biotech community.

“I see this firsthand,” Lo said. “I have a number of talented colleagues at MIT in the life sciences and I talk to them all the time about how challenged they are in getting funding.”

These companies fear that that process will only get harder if Pelosi’s plan is enacted.

“Even in good times you have to work really hard to get funded,” said Hastings. “In hard financial times, no matter how good you are, you may not be able to get funded ... everybody gets hurt, it’s not pretty when that happens.”

No venture capitalist STAT spoke to acknowledged any plan to walk away from biotech investing — but they all expressed a fear that H.R. 3 could dry up the funds they use to invest.

“I’m hoping it doesn’t [pass],” said David Beier, managing director

of Bay City Capital, who predicted the Pelosi bill would result in tens of billions of dollars less in biotech investment.

Like the biotech companies that need to convince investors to take a bet on their company, venture capital firms need to convert larger investors — known as limited partners — to give them money to invest.

“They are watching these trends across all of these different sectors, sometimes paying more attention, or reacting more quickly than even the venture community,” said Dr. Sara Nayeem, a partner at the venture capital firm New Enterprise Associates.

“It’s a bit frightening actually to see the specter of just a complete blunt instrument dampening innovation that may have a short term benefit but will affect our children and our grandchildren,” she added.

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