Policy makers examine role of incentives in advancing treatments, cures in U.S.

By Mari Serebrov

Contributing Writer

The specter of more drugs that cost upwards of $84,000 hovered over a House subcommittee hearing Wednesday on whether current incentives are adequate to spur development of therapies for unmet medical needs such as Alzheimer's disease. At the hearing, industry advocates representing both drugs and devices called on policy makers to protect medical innovation in America.

"The medical technology industry is facing a crisis," said Mike Carusi, a general partner at **Advanced Technology Ventures** (Palo Alto, California) and a member of the National Venture Capital Association (NVCA). Carusi noted that his testimony reflected input from the NVCA, the Medical Device Manufacturers Association (MDMA), and Advanced Medical Technology Association (AdvaMed). "Without changes in public policy, the U.S. will no longer lead the world in developing life-saving treatments, and American patients face a grave risk of losing opportunities for cures."

Since patients with diseases like Alzheimer's need long-term therapy, the FDA generally requires longer trials to assess the safety and efficacy over time for investigational drugs and devices targeting chronic diseases and conditions. With each Alzheimer's trial taking three to five years, developing treatments for the space is a slow process that can eat up much of a product's patent life before it gets to market, Sam Gandy, Mount Sinai professor of Alzheimer's disease research, told the House Energy & Commerce Subcommittee on Health.

Because of the lengthy development, it's difficult to attract early investment in therapies for chronic diseases, Third Rock Ventures' Alexis Borisy testified at the third hearing on the 21st Century Cures Initiative.

Carusi agreed, noting that his firm is not funding Alzheimer's drugs because the "math doesn't work." He said incentives are needed to "make the math work."

A lack of regulatory predictability adds to those failures and increases the time and cost of development. When the FDA moves the bar during the development of a product, "millions of dollars are flushed down the drain," Carusi said.

He also noted that over the past 10 years the average returns for medical device investments have "simply fallen short" of expectations. These poor returns have resulted in institutional investors fleeing the sector. "An estimated 70% of all medical device venture firms have or will exit the business over the next five years," Carusi said. "As venture funding falls, innovation falls."

According to Carusi, since 2007, there has been a 50% reduction in the number of device companies receiving initial VC investment and about a 70% drop in the amount of capital invested. He testified that in 2013 the industry witnessed the lowest level of medical device

initial funding activity in more than two decades. Last year, only 44 new venture device companies raised a total of $163 million compared to 2007's 98 companies amassing nearly $576 million in initial venture capital.

The FDA isn't the only government agency creating uncertainty. Medicare is requiring more and more data to justify device reimbursement, Rep. Jim Matheson (D-Utah) said. The resulting uncertainty is a cost that device makers have to cover.

It's difficult to continue funding devices to get the additional data Medicare wants, Carusi agreed. While investors understand the importance of data, the bar can't be continuously moving. Because of these regulatory problems, Carusi said more venture firms are shifting their investment overseas where the regulatory path, especially for devices, is faster and more predictable.

Regardless of predictability and the incentives the government offers, the best way to attract investment to a space is success. Gandy said once a promising new Alzheimer's therapy is approved, investment will flow into that therapeutic area.

But Carusi did not place all the responsibility on FDA and Medicare. He said there is no single cause for the challenges that face medical device innovation and that the industry is "partly responsible" for its recent performance. "Too many companies developed too many products that were too incremental in nature. These products were not disruptive enough to merit adoption. However, it is important to ask why the industry chose to go down this path," Carusi said. "As the time and cost to bring a product to market increases, investor returns decrease. Investors were attempting to tweak a broken model."

Carusi suggested several possible solutions to address the problems facing medical device companies today. Among them, he said, there needs to be continued focus on management improvement and reviewer training to ensure consistency and timeliness of reviews. Also, he said, policy makers should explore opportunities for streamlining the independent review board (IRB) approval process, improving the investigational device exemptions (IDE) process, reducing unnecessary preclinical trial data, and improve the process for undertaking first-in-human studies in the U.S. Carusi also said there should be sustained focus on improving procedures for the evaluation and approval of combination devices.

On the drug side, one possible answer is a proposed 15-year exclusivity for some therapies. Three years longer than the exclusivity granted to novel biologics, the 15-year period would be awarded to "dormant therapies" intended for unmet medical needs under the Modern Cures Act.

While the longer exclusivity could help attract the early investment needed to develop treatments for diseases largely ignored by industry, some lawmakers and experts worried that the end result could be drugs for chronic diseases being priced like Gilead Sciences' Sovaldi (sofosbuvir). The small molecule hepatitis C drug is priced at $1,000 a pill – or $84,000 for the full course of treatment.

If every American eligible for treatment with Sovaldi were given the drug, the cost would equal the country's total annual drug spend, said Steven Miller, senior VP and chief medical officer for Express Scripts Holding. The economic impact would be even greater if the same pricing structure were used for a drug intended to be used over years by tens of millions of Americans with Alzheimer's or diabetes.

A longer exclusivity would maintain higher prices while discouraging innovation, Rep. Henry Waxman (D-Calif) said. Too much exclusivity is as damaging as too little, he added, as excessive periods of exclusivity allow innovators to sit back and relax rather than invest in more R&D.

One way Congress could help is to better fund basic science through the NIH, Miller said. If funding for basic science is choked off, the rest of the development process won't work. The second most important factor to ensuring new cures is improving regulatory certainty, he added.

Medical Device Daily June 13, 2014