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US President Joe Biden announced the Cancer Moonshot Initiative's new target on 2 February.

CANCER 'MOONSHOT' HAS LOFTY NEW GOAL: HALVE DEATHS IN 25 YEARS

Researchers take stock of the US$1.8-billion initiative's first five years as Biden announces ambitious target.

By Heidi Ledford

Pathologist and cancer researcher Michael Becich has two criteria for setting goals: they should be measurable, and they should be lofty, even if that means they border on unattainable. "By trying to hit a lofty goal, we start to measure ourselves against that," he says. "And what gets measured gets done."

US President Joe Biden announced on 2 February that he would renew the Beau Biden Cancer Moonshot Initiative — a US$1.8-billion cancer research programme that began 5 years ago and was slated to run for another 2 — with a fresh target of decreasing cancer deaths by at least 50% in the next 25 years. Becich saw a goal, and a lofty one, that he could get behind. "Here's a politician trying to understand the science," he says. "And I applaud him for what he wants to do with it."

For Becich, who works at the University of Pittsburgh in Pennsylvania, and other cancer researchers, that's a welcome change. For decades, they have been tethered to unrealistic political promises. In 1971, former president Richard Nixon aimed for cancer to be cured in five years. In 2016, then-vice-president Biden declared that the moonshot would achieve ten years of cancer research in only five years — a target that Becich considers worthy, but too subjective and difficult to measure. Even now, as researchers hope the renewal of the programme will come with a fresh influx of funds — Biden has yet to say how much — it will take years to determine whether the first five years' work has met that original target.

Congress awarded the moonshot's first $1.8 billion over 7 years. Although this sounds like a dazzling sum, it constituted a relatively small annual investment of about 5% to the budget of the US National Cancer Institute (NCI), which funds moonshot programmes.

Still, the NCI found room to launch more than 240 projects covering a wide spectrum of cancer research. Moonshot programmes are studying therapies that stimulate the immune system to fight paediatric cancers, and are compiling 3D atlases of tumour cells as they progress from precancerous lesions to advanced disease. There are programmes to address disparities in access to health care, and to improve the implementation of best clinical practices after they have been identified in clinical trials. And the NCI built data-sharing infrastructure, such as the Cancer Research Data Commons, to maximize the use of the generated data.

Biden's decision to renew the moonshot could allow the NCI to delay the difficult task of shutting down projects linked to the initiative. As of December, about two-thirds of the funded projects had expressed interest in continuing past the original end of the moonshot, NCI deputy director Dinah Singer told a meeting of the National Cancer Advisory Board. Not all of these programmes were likely to win continued funding, she said — but if they did, the NCI would need an additional $100 million each year to allow them to continue without taking funds from other NCI grant pools. "It's really easy to start programmes," says Barker. "And very difficult to stop them."

Earlier diagnosis

Details of the next iteration of the moonshot and its priorities are unclear at present, but Biden's statement included references to advancing technologies that can lead to earlier diagnosis of cancers, and harnessing mRNA vaccines to target tumours. It also reiterated a commitment to data sharing.

For oncologist Bishal Gyawali at Queen's University in Kingston, Canada, Biden's renewed emphasis on ensuring access to cancer screening and early detection could represent a key moment for the field. In 2017, Gyawali called for a cancer 'groundshot' initiative that would focus on ensuring access to available treatments, rather than hunting for the next cure. "All the fuss was about how wonderful the new innovations will be," he says. "But that did not acknowledge the fact that we already have so many interventions in oncology that we already have proven to work, and most of the patients of the world don't have access to these treatments."

Lack of access is also a problem in the United States itself, says Amelie Ramirez, who studies population health at the University of Texas Health Science Center at San Antonio. For example, cancer is the number-one killer in the US Latinx community, she says. Many in this group lack access to early cancer screening and are diagnosed later in the disease course, she notes. "I was heartened to hear the specific words 'to address inequities' as its own goal in the renewed moonshot," she says. "The call to action for cancer screening is desperately needed."

For any moonshot effort, data sharing will be pivotal to ensure that the programmes maximize their impact, says Becich. Researchers in the first generation of moonshot programmes have been slower than he expected to upload their data to the Cancer Research Data Commons and other platforms, and he worries that they might not do so before the original moonshot comes to an end in two years.

"What we need to do is make sure the central goal of sharing data [happens] as quickly as possible," Becich says. "Let's make that a central part of where the moonshot goes."