



Washington, DC

davidwillman@gmail.com

Cite this as: *BMJ* 2023;382:p2002<http://dx.doi.org/10.1136/bmj.p2002>

Published: 07 September 2023

INVESTIGATION

The US quietly terminates a controversial \$125m wildlife virus hunting programme amid safety fears

Two years after launching what officials hailed as a five year flagship project for hunting viruses among wildlife to prevent human pandemics, the US Agency for International Development is shuttering the enterprise. **David Willman** reports

David Willman *investigative journalist*

A flagship project for the controversial practice of hunting viruses among wildlife in South East Asia, Africa, and Latin America to prevent human outbreaks and pandemics is being quietly dropped by the United States Agency for International Development (USAID) after private and bipartisan criticism over the safety of such research, *The BMJ* has found.

For more than a decade the US government has been funding international projects engaged in identifying exotic wildlife viruses that might someday infect humans. Although critics have raised concerns over the potentially catastrophic risks of such virus hunting activities,¹ hundreds of millions of dollars in unabated funding have symbolised a commitment to the effort.

The shuttering of the project, as described in a new congressional budget document and during interviews with scientists and federal policy makers, marks an abrupt retreat by the US government from wildlife virus hunting, an activity that has also been funded by the Department of Defense and the National Institutes of Health. The turnabout follows early warnings raised by sceptics—including officials in the Biden White House—that the \$125m (£99m; €115m) “DEEP VZN” programme could inadvertently ignite a pandemic. The misgivings continue to resonate, as the cause of the SARS-CoV-2 pandemic, the world’s deadliest such event in a century, remains unproved.

When USAID, an arm of the US State Department, launched DEEP VZN (pronounced “deep vision”) in October 2021, the agency promoted it as “a critical next step . . . to understand and address the risks posed by zoonotic diseases that can be transmitted from animals to humans.”² Short for “Discovery & Exploration of Emerging Pathogens—Viral Zoonoses,” DEEP VZN succeeded an earlier USAID programme called PREDICT and aimed to find previously unknown pathogens from three viral families: coronaviruses; filoviruses, such as Ebola; and paramyxoviruses, including Nipah virus. The aim was to help the world “be better prepared to detect, prevent and respond to future biological threats.”²

Officials at Washington State University, hired by USAID to help administer DEEP VZN, said in a submission to the agency that the university’s goal was to collect around 480 000 samples from wildlife,

seeking out “previously unknown” viruses to “identify a subset that pose a significant pandemic threat.” The university said that the project aimed to “detect and characterize” as many as 12 000 novel viruses over the programme’s five years.³ Beginning in July of this year, however, officials at USAID quietly informed aides to Democratic and Republican members of two Senate committees with jurisdiction over DEEP VZN that it was being shut down. Apart from the Biden White House officials, several Republican senators had questioned the prudence of DEEP VZN, according to Senate letters and the interviews conducted for this article.

The previously unpublicised decision by USAID to terminate DEEP VZN comes amid heightened concerns over the many risks of working with exotic viruses—including unresolved questions about whether a research mishap or a naturally occurring spillover of virus from an animal species to humans caused the SARS-CoV-2 pandemic.⁴ In China, where a separate effort to catalogue viruses has been under way for years, scientists have described being bitten or scratched by bats or having bat urine or blood splashed into their eyes and faces.^{5–7}

The closure of DEEP VZN was privately relayed to the Senate aides by the office of Atul Gawande, USAID’s assistant administrator for global health, said officials familiar with the matter. Gawande, an appointee of President Biden, was a general and endocrine surgeon and bestselling author before joining the administration in January 2022.

Weighing risks against potential benefits

The demise of DEEP VZN, despite its backing from proponents at USAID and the project’s grantees, validates the concerns of sceptics, including the handful of Biden White House officials who challenged the project.

In December 2021 two senior White House officials specialising in biosecurity and biosafety—Jason Matheny, deputy assistant to Biden for technology and national security, and Daniel Gastfriend, the National Security Council’s director for biodefence and pandemic preparedness—first privately shared their views with USAID’s administrator, Samantha Power, and advised her to shut down DEEP VZN. Those familiar with the matter said that another White House official, T Gregory McKelvey Jr, a physician and the assistant director for biosecurity

with the Office of Science and Technology Policy, also privately raised concerns with USAID staff.

The White House officials' remarks to Power in late 2021 and other details surrounding DEEP VZN were first reported by the *Washington Post* on 10 April this year.⁵ Power, a presidential appointee and Harvard trained lawyer, eventually told Matheny and Gastfriend that she would initiate a review of the project to ensure that DEEP VZN could be conducted in a way that adequately managed the risks, according to those with knowledge of the conversation. In March and November 2022 USAID directed its grantees to avoid collecting samples of viruses until safety protocols were reviewed anew. However, federal records state that through spring of this year USAID continued to fund the research while its project administrators lined up additional laboratories, technicians, and other support staff necessary to manage the expected volume of genetic samples.

The ultimate decision to terminate DEEP VZN reflected the Biden administration's commitment to weigh more rigorously the risks and the potential benefits of research projects, according to interviews with present and former White House officials. They pointed to a policy recommendation issued in March by the National Science Advisory Board for Biosecurity, calling for such work to be approved only if "there are no feasible alternative methods of obtaining the relevant benefits from proposed research that pose less risk," and after "unnecessary risks have been eliminated and the remaining risks are justified by the potential benefits."⁸

In response to written questions, a USAID spokesperson confirmed on Wednesday 6 September that the agency has decided to close down DEEP VZN.

"USAID has determined that investments that focus on the search for and characterization of unknown viruses prior to spillover into humans are not an Agency global health security priority at this time. As a result, we will cease funding projects with this specific objective," said the agency's prepared statement.

Asked to what extent USAID leadership's decision to shutter DEEP VZN hinged on concerns over its risks, the agency said that the decision reflected "the relative risks and impact of our programming."

Instead of collecting viruses circulating exclusively among wildlife, USAID said that "the change in Agency priorities" would emphasise actions aimed at improving global "laboratory capacity, disease surveillance, human resources, biosafety and biosecurity, and risk communication and community engagement." The agency said that it had informed Washington State University and other stakeholders beginning in July of USAID's decision "to end the DEEP VZN" project.

Power did not respond to a request for her rationale with DEEP VZN. Gawande was described by an aide, Enam Hussain, as unavailable to speak on the record.

Matheny, who left the White House in mid-2022 to become president and chief executive officer of the RAND Corporation, told *The BMJ* he believed that USAID's about-face with DEEP VZN stemmed from the newfound media scrutiny and serious safety considerations.

"It seems likely that the agency assessed that the risks exceeded the benefits of the programme," said Matheny, noting that jettisoning DEEP VZN cut against USAID's backing of such research, which has spanned three presidential administrations and surpassed \$300m in funding. "USAID has consistently seen this viral discovery work as 'part of our mission.'"

Although the agency has backed wildlife virus hunting since 2009, its historical and chief focus has been to mitigate suffering from disease, famine, and other natural disasters in resource challenged regions.

DEEP VZN's grantees have included Washington State University, the University of Washington, Washington University in St Louis, PATH (formerly the Program for Appropriate Technology in Health), and FHI 360, a contractor based in Durham, North Carolina.⁹ On 1 October 2021 USAID awarded Washington State University \$124.7m to provide overall support for DEEP VZN. The University of Washington was retained as a sub-grantee and was intended to provide expertise from five of its labs to build "capacity in other countries to be able to find new viruses and characterize them," according to a university issued news item.¹⁰ In July 2022 USAID awarded an additional \$1.1m to FHI 360, whose representative was installed as a project leader to help provide "expert technical guidance," programme documents show.

Matheny and Gastfriend had first contacted Power at USAID on learning that Kevin Esvelt, a prominent Massachusetts Institute of Technology biotechnologist, was about to warn in public testimony to the House Foreign Affairs Committee on 8 December 2021 that pursuing novel, animal transmitted viruses could be exploited by terrorists and lead to a pandemic. That same day, coincidentally, the director of the White House Office of Science and Technology Policy, Eric S Lander, publicly discounted the benefits of wildlife virus hunting—a position at stark odds with the long running advocacy for such work from USAID, the Department of Defense, and leaders of the National Institutes of Health. Appearing before the privately funded Bipartisan Commission on Biodefense, Lander, appointed by Biden, was asked by the former Senate majority leader Tom Daschle, a Democrat, whether pandemics could be predicted or prevented.

"OK, I may get myself in trouble," replied Lander, an expert on sequencing and interpreting the human genome. "I'm just not an optimist on the question, because nature is vast. There are viruses that can jump species—and we do not know how to take a virus from the animal kingdom and recognise when it is ready to jump species."¹¹

Research with a history of controversy

Well before the SARS-CoV-2 pandemic, other sceptics of wildlife virus hunting had dismissed such projects as unlikely to deliver lifesaving medicines or prevent pandemics. Writing for the journal *Nature* in June 2018, the biologists Edward Holmes, Andrew Rambaut, and Kristian Andersen said, "Making promises about disease prevention and control that cannot be kept will only further undermine trust." They described assumptions that such virus hunting projects could succeed as "misguided" and "arrogant."¹²

In the wake of the SARS-CoV-2 pandemic others have raised additional concerns, saying that the risks of collecting animal-to-animal transmitted viruses should not be dismissed lightly. Such research typically entails collecting biological specimens—such as excrement, blood, or saliva from bats dwelling in caves or tree groves—followed by shipments of the samples to one or more labs for analysis. A mishap at any stage of the work would, some experts warn,⁴ invite the risk of an outbreak or a pandemic (see box).

Box: Unresolved questions over SARS-CoV-2's origins

Concerns over the risks of research with exotic viruses have increased after revelations about the supervision of National Institutes of Health

(NIH) funded lab experiments with genetic material harvested in the field from bats.¹³

In autumn 2021, responding to questions raised by some Republicans in Congress, Lawrence Tabak, then top deputy to the NIH director, described an inappropriate delay in tackling what he said had been unexpected results from experiments conducted on behalf of a grantee, EcoHealth Alliance. The efforts, carried out in China by a sub-grantee, the Wuhan Institute of Virology, involved work with several coronavirus strains derived from bats.¹⁴

The project, Understanding the Risk of Bat Coronavirus Emergence, had been approved after NIH grant administrators' internal determination that it would not entail "gain of function" research—namely, work that would increase a pathogen's transmissibility or lethality.

As a safeguard NIH had required EcoHealth, based in New York City, to "immediately stop all experiments with these viruses" and to promptly notify the agency if significant viral growth was observed in mice infected in the lab. In the grant terms specified by NIH, "no funds can be used to support gain-of-function research."

But Tabak stated in letters on 10 October 2021 to several House Republicans that the work in Wuhan funded by NIH proceeded even though the evidence suggested that increased viral growth was recorded.¹⁴

"EcoHealth failed to report this finding right away, as was required by the terms of the grant," wrote Tabak, then NIH's principal deputy director. According to Tabak, the results in Wuhan remained unknown to NIH for about two years, until August 2021.¹⁵ (EcoHealth's president, Peter Daszak, in written remarks to a government inspector general, disputed that his company had been required to immediately notify NIH of the concerns that the agency later identified, but he said that the company had "corrected certain procedures."¹³)

As for what might have caused the pandemic, Tabak noted that the coronaviruses used during the NIH funded lab work were genetically divergent from SARS-CoV-2.¹⁶ US intelligence agencies, acting in response to requests from President Biden, have concluded that the pandemic was most likely caused by either an animal-to-human spillover or a research related mishap.¹⁶

Scrutiny had been building behind the scenes

In May of this year three leaders of the Republican controlled House Energy and Commerce Committee asked the Government Accountability Office to open a scientific audit to "assess the benefits and risks of conducting predictive field research programs for viruses."¹⁷

The members cited research funded over the past decade by both USAID and the National Institute of Allergy and Infectious Diseases, an arm of NIH. Although such research, including USAID'S PREDICT programme (DEEP VZN's predecessor), had "identified thousands of new viruses," wrote the House members, "some researchers have questioned whether collecting and characterizing viruses found in animals can accurately predict those that may infect humans, or what the effect would be if and when humans are subsequently infected."

Their letter continued, "Others have suggested these types of programs risk unintentional infection of field or laboratory workers that could result in an accidental outbreak."

As part of the Government Accountability Office's newly begun audit, its senior biological scientist, Michael Dickens, wrote a 22 July email to Thiravat Hemachudha, a former PREDICT programme leader in Bangkok, Thailand. In the email, obtained by *The BMJ*, Dickens noted the April report by the *Washington Post*, which revealed that Thiravat had decided to reject further US government funding for such research after coming to view it as unacceptably

dangerous and because of the uncertain origin of the SARS-CoV-2 pandemic.⁵ Thiravat's US funding had flowed from both the PREDICT programme and the Pentagon. He remains an advocate for surveillance of viruses that have emerged in humans.

The Government Accountability Office's acting chief scientist, Karen Howard, estimated in an email to *The BMJ* that the audit would likely be completed during spring 2024; she declined to discuss any preliminary findings.

Meanwhile, interviews and documents show that USAID's funding of the DEEP VZN programme has continued to draw scrutiny behind the scenes from members and staff at both the Senate foreign relations committee and the Senate appropriations committee. Beginning with a letter they wrote privately to USAID's Power on 23 November 2021, the questions were spearheaded by the Republican senators Lindsey Graham of South Carolina, a member of the appropriations committee, and James Risch of Idaho, who serves on foreign relations.

"We are particularly concerned about . . . 'DEEP VZN,' aimed at discovering and studying unknown viruses in areas where there is high risk of animal to human spillover," the senators wrote at that time. "Given all of the outstanding questions surrounding the origins of the covid-19 pandemic, it is critically important that this initiative be adequately vetted."

Gawande, USAID's assistant administrator, eventually responded. In an 11 page letter on 18 July 2022 he detailed planned, specific steps, including regularly scheduled visits to field sites and in-country partner labs, to confront the risks.

Power, in another letter conveyed privately to the senators dated 24 April 2023, further described the safeguards envisioned for DEEP VZN. But in a response to her on 16 May, Risch appeared unassuaged.

He wrote, "I remain deeply concerned that USAID does not yet exercise the level of oversight and control over its prime and sub-prime implementing partners that life sciences research . . . surely requires. Even if that level of control could be attained over the coming days, weeks, months, or years—which is highly unlikely—I remain unconvinced that hunting novel viruses would or should ever fall within the core competency of [USAID]."

The exchanges between the Senate and USAID culminated with a brief mention of the previously unreported termination of DEEP VZN in the State Department's appropriation for the fiscal year 2024, dated 20 July of this year, stating, "The Committee notes the decision by USAID to cease funding for the exploration of unknown pathogens."¹⁸

This feature has been funded by the BMJ Investigations Unit. For details see [bmj.com/investigations](https://www.bmj.com/investigations)

Competing interests: none.

Provenance and peer review: commissioned; externally peer reviewed.

- 1 Salzberg S. The US is funding a massive virus hunt that might cause another pandemic. Great idea! *Forbes*. 5 Jul 2022. <https://www.forbes.com/sites/stevensalzberg/2022/07/05/the-us-is-funding-a-massive-virus-hunt-that-might-cause-another-pandemic-great-idea/>
- 2 US Agency for International Development. USAID announces new \$125 million project to detect unknown viruses with pandemic potential. 2021. <https://www.usaid.gov/news-information/press-releases/oct-5-2021-usaid-announces-new-125-million-project-detect-unknown-viruses-pandemic-potential>
- 3 Washington State University. Washington State University Discovery & Exploration of Emerging Pathogens—Viral Zoonoses (DEEP VZN) cooperative agreement 7200AA21CA00033 attachment B: program description. 2021. https://usrtk.org/wp-content/uploads/2023/06/22-309-2nd-Install_Redacted.pdf
- 4 Thacker PD. The covid-19 lab leak hypothesis: did the media fall victim to a misinformation campaign? *BMJ* 2021;374:. doi: 10.1136/bmj.n1656 PMID: 34244293

- 5 Willman D, Warrick J. Research with exotic viruses risks a deadly outbreak, scientists warn. *Washington Post* 2023 Apr 10. <https://www.washingtonpost.com/investigations/interactive/2023/virus-research-risk-outbreak/>
- 6 Warrick J, Willman D. China's struggles with lab safety carry risk of another pandemic. *Washington Post* 2023 Apr 12. <https://www.washingtonpost.com/investigations/interactive/2023/china-lab-safety-risk-pandemic/>
- 7 Wang X. China to help ID unknown lethal viruses. *China Daily* 2018 May 22. <https://www.chinadaily.com.cn/a/201805/22/WS5b035506a3103f6866ee9b83.html>
- 8 National Science Advisory Board for Biosecurity. Proposed biosecurity oversight framework for the future of science. Mar 2023. <https://osp.od.nih.gov/wp-content/uploads/2023/03/NSABB-Final-Report-Proposed-Biosecurity-Oversight-Framework-for-the-Future-of-Science.pdf>
- 9 USAID and Washington State University cooperative agreement 7200AA21CA00033. USASpending.gov. https://www.usaspending.gov/award/ASST_NON_7200AA21CA00033_7200
- 10 Ellison J. UW joins USAID's \$125M project to detect emerging viruses with pandemic potential. *UW News* 2021 Oct 5. <https://www.washington.edu/news/2021/10/05/uw-joins-usaids-125-million-project-to-detect-emerging-viruses-with-pandemic-potential/>
- 11 Bipartisan Commission on Biodefense. The Athena Agenda: executing the Apollo Program for Biodefense. YouTube. 2022. <https://www.youtube.com/watch?v=bF48c14MXlg>
- 12 Holmes EC, Rambaut A, Andersen KG. Pandemics: spend on surveillance, not prediction. *Nature* 2018;558:-2. doi: 10.1038/d41586-018-05373-w. pmid: 29880819
- 13 HHS Office of Inspector General. The National Institutes of Health and EcoHealth Alliance did not effectively monitor awards and subawards, resulting in missed opportunities to oversee research and other deficiencies. 2023. <https://oig.hhs.gov/oas/reports/region5/52100025.asp>
- 14 Department of Health and Human Services and EcoHealth Alliance Inc Project Grant R01AI110964. USASpending.gov. https://www.usaspending.gov/award/ASST_NON_R01AI110964_7529
- 15 Tabak LA. Letter to Cathy McMorris Rodgers. 20 Oct 2021. <https://s.wsj.net/public/resources/documents/NIH%20letter.pdf>
- 16 Looi MK. Did covid-19 come from a lab leak in China? *BMJ* 2023;382:. doi: 10.1136/bmj.p1556 pmid: 37429612
- 17 McMorris Rodgers C, Guthrie B, Griffith HM. Letter to Gene Dodaro. 1 May 2023. https://d1dth6e84htgma.cloudfront.net/Letter_to_GAO_Virus_hunting_5_1_23_1b2fa64e36.pdf
- 18 US Senate. Department of State, Foreign Operations, and Related Programs Appropriations Bill, 2024. 20 Jul 2023. https://www.appropriations.senate.gov/imo/media/doc/fy24_sfops_report.pdf