

A proposal to generate insecticides that could save millions of lives

August 10 2017

Researchers at Duke University have proposed a new mechanism for stimulating insecticide development to prevent the spread of deadly tropical diseases. The system is based on their similar proposal that has been spurring drug development for those same diseases since 2007.

"It's about reducing inefficiency in the regulatory process, and using the gains to fix a market failure in product development to benefit society as a whole," said David Ridley, a professor at Duke University's Fuqua School of Business and part of the team proposing a voucher reward for approving new insecticides through the U.S. Environmental Protection Agency.

The team's findings, "A Voucher System to Speed Review Could Promote a New Generation of Insecticides to Fight Vector-Borne Diseases," are published in the August issue of the journal *Health Affairs*.

Insecticides used in bed nets and homes have prevented millions of deaths from malaria and other diseases. But while the population of disease-carrying insects resistant to current treatments has grown, no new class of insecticides have been developed in the last 40 years because they are not sufficiently profitable.

The vector expedited review voucher (VERV) proposal would offer faster - though no less scientifically rigorous - review for any novel class of <u>insecticide</u> for public health use. The company behind the new



product would also gain expedited review for a second, more profitable product intended to protect crops - as a way to encourage large agrochemical companies to invest in developing less profitable insecticides.

The proposal is based on the system Ridley and his colleague Jeffrey Moe, of the Duke Global Health Institute, proposed for the U.S. Food and Drug Administration a decade ago to encourage the development of treatments for tropical diseases. Congress made that proposal law in 2007. The FDA has issued 14 vouchers since that program began. They offer review of a drug in six months rather than the usual 10 months, which can make a huge difference to firms bringing a new product to market. Seven of the vouchers issues so far have been sold, fetching as much as \$350 million.

"We brought a creative solution to <u>drug development</u>, and now we want to apply it to insecticide development," Moe said.

Ridley and Moe partnered with Nick Hamon, CEO of the Innovative Vector Control Consortium, a U.K.-based nonprofit that works to prevent the spread of insect-borne disease. The Bill and Melinda Gates Foundation and others support the work of IVCC. IVCC in turn supported this project.

"Medicines are an important tool in fighting these diseases, but they are not the only tool," said Professor Moe. Whereas 65 percent of research and <u>development</u> funding for malaria was for drugs and vaccines, only 6 percent was for vector control, according to the paper. Similarly, the market for vector-control products is less than \$1 billion, while agricultural chemicals exceed \$47 billion in annual sales. This limits the incentive for companies to enter the <u>vector-control</u> market.

The vector expedited review voucher proposal incorporates lessons



learned through 10 years of the FDA voucher program, such as ensuring the projects that win vouchers are truly novel and will go where they're needed.

"Not a week goes by in which we don't discuss ways we can make the voucher review program better," Ridley said.

Ridley, who also works with Duke's Margolis Center for Health Policy, said he expects to see more of the vector review vouchers to be used by the companies that win them, because the industry is dominated by larger players that are less likely to sell to competitors.

"However, we might be surprised," he said. "There could be companies we've never heard of that receive investor funding and develop products because of the potential value of a VERV. That's one of the beauties of prizes like this - you don't pick the winners in advance."

More information: David B. Ridley et al. A Voucher System To Speed Review Could Promote A New Generation Of Insecticides To Fight Vector-Borne Diseases, *Health Affairs* (2017). <u>DOI:</u> <u>10.1377/hlthaff.2016.1640</u>

Provided by Duke University

Citation: A proposal to generate insecticides that could save millions of lives (2017, August 10) retrieved 27 April 2024 from <u>https://medicalxpress.com/news/2017-08-insecticides-millions.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.