



TED/Bret Hartman

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As an infectious diseases physician and scientist working in a country with the fastest-growing HIV epidemic in Asia, I have witnessed how HIV has devastated the lives of many Filipinos. While the impact of antiretrovirals (ARVs) has been substantial, our patients still live in fear of treatment failure. And with the limited local repertoire of ARVs, coupled with rising resistance, it is conceivable that a day might come when we no longer would have effective treatment.

I trained as a medical doctor at the University of the Philippines College of Medicine, followed by residency in internal medicine at the Medical College of Wisconsin. I then accepted a fellowship in infectious diseases at the University Hospitals Case Medical Center and the Case Western Reserve University in Cleveland, along with a tropical medicine diploma and research fellowship. I returned to the Philippines in 2008 as a *Balik Scientist*, and members of our HIV

research and advocacy team have since earned numerous awards, including Outstanding Young Scientist (NAST), Outstanding Young Man (TOYM) of the Philippines, Ten Outstanding Young Persons of the World (TOYP), and Young Physician Leader of the Interacademy Panel of The World Academy of Sciences.

My team is currently working on the molecular epidemiology of HIV in the Philippines, and how we transitioned from a subtype B epidemic to one that is mostly CRF01_AE, as well as the implications of this shift on disease progression and development of drug resistance. We have successfully done near-whole genome studies on acquired and transmitted drug resistance using conventional and next-generation sequencing.

We recently received funding to develop mobile diagnostics for detecting near-point of care HIV drug resistance for use in remote HIV treatment hubs, and we continue to work with the Department of Health in doing HIV drug resistance surveillance. This work includes monitoring the emergence of INSTI-transmitted drug resistance, which we first demonstrated locally using next-generation sequencing.

I am also working on improving public science communication, for which I was recently chosen as a TED Fellow in 2017. My TED talk on HIV genetic diversity (currently with nearly 1.3 million views) is featured on this page, and illustrates how to effectively convey a highly complex subject to the public using principles of design and communication: https://www.ted.com/talks/edsel_salvana_the_dangerous_evolution_of_hiv/



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