

# Halting Infectious-Disease Spread with Engineered Transmissible Therapies

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**I**nfectious disease treatments, both pharmaceutical and vaccine, face three universal challenges: the difficulty of targeting treatments to high-risk ‘superspreader’ populations who drive the great majority of disease spread, behavioral barriers in the host population (such as poor compliance and risk disinhibition), and the evolution of pathogen resistance. I will describe our engineering and development of an intervention against HIV with the potential to overcome these challenges in resource-poor settings, such as sub-saharan Africa. The intervention is based upon the concept of an interfering particle and capitalizes upon and extends the phenomenon of ‘passive immunization’ that occurs with live-attenuated vaccines such as Oral Polio Vaccine (but without the potential for reversion to virulence). If successful, such transmissible therapies could apply broadly to many viral infectious diseases and could represent a new approach for disease control, away from pathogen eradication but toward robust disease suppression.