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Plenary Talk: How AIDS prevalence impacts the emergence of antibiotic resistance in bacterial infections

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AIDS has fundamentally reshaped many of the basic immunological and epidemiological landscapes of public health across the globe over the past few decades. One of the potential impacts that has yet to receive meaningful attention is to the emergence of antibiotic resistance in bacterial infections that act as opportunistic secondary infections in AIDS-immunocompromised patients. Populations with high prevalence of AIDS-immunocompromised patients alter the evolutionary landscape for bacterial pathogens both by host availability/susceptibility and the frequency of antibiotic treatment that may not lead to successful eradication of an individual instance of infection. In this talk, we'll discuss epidemiological models (SEIR ODEs) that focus on the probability of fostering novel emergence of resistant strains of bacterial infections circulating in high AIDS-prevalent populations. We'll use these models to consider how public health policies for HIV/AIDS management might incorporate globally responsible stewardship of antibiotic therapeutics.