

VACCINES FOR POVERTY ASSOCIATED INFECTIOUS DISEASES: ACCESSING INNOVATION

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There are very few exceptions to the rule that vaccines have been developed in high income countries (HIC) and have been extended over time to low and middle income countries (LMIC). For the diseases of childhood, and now for human papilloma virus, these innovative vaccines have resulted in dramatic reductions in death and improvement in socioeconomic indicators. However, there has often been a delay between the introduction of life-saving (or morbidity reducing) vaccines in HIC and their subsequent introduction in LMIC. Recently a dengue vaccine targeting middle income countries and a typhoid conjugate vaccine whose primary target population is LMIC have been developed. However, accessing innovative vaccines remains a key problem, particularly in countries that are not Gavi eligible or for diseases that are not covered by Gavi. The latter point can be further developed by noting that full implementation of existing vaccines from 2011-2020 will save an estimated 2.5 million lives per year. However, infectious diseases for which no vaccines exist will kill nearly 5 million per year. These diseases include the usual suspects -- HIV, TB and malaria – but also infectious diseases associated with poverty: invasive non-typhoidal Salmonella (up to 650,000 deaths annually), Group A Streptococcus (~450,000 deaths annually), Shigella (~200,000 deaths annually), hepatitis E, among others. In general, the latter group is characterized by burden in LMIC, imprecise epidemiology, and lack of incentivization (for major vaccine companies). Unlike the CEPI outbreak diseases, there is no global fund to accelerate clinical development. While economic development will result in the gradual subsidence of these infectious diseases, vaccines could and should be viewed as a cost-effective alternative and mechanisms to fund the development and deployment of vaccines against poverty associated infectious diseases would have a high rate of return on investment.