

Vaccines to address the needs of 21st century society

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During the 20th century, vaccines have eliminated most of the childhood diseases with the major exceptions of the diseases caused by meningococcus and respiratory syncytial virus (RSV). What is the role of vaccination in the 21st century? The first target will be to develop vaccines for meningococcal meningitis, which is perhaps the last disease that in a few hours can attack and kill healthy children and young people, and RSV that affects virtually every single child in the first few months of life. Fortunately, thanks to several revolutionary technologies developed during the last 30 years, including conjugation, genomics and new adjuvants, we are in the final stages to conquer meningococcal meningitis and new approaches are being tested for RSV. The second and perhaps most important target of vaccination in the 21st century will be to take care of the global health problems of this century. These include taking care of the aging population, with new vaccines targeting the diseases typical of the elderly with an aging immune system, to control emerging antibiotic resistance, to preventing cancer, taking care of the diseases present only in countries affected by poverty, and taking care of emerging diseases such as pandemic influenza. Overall, vaccines in the 21st century will have an increased safety, and will be used as an insurance to ensure health across all ages, for the entire life.