**Type: Invited Presentation**

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*Session: Vaccine Success and Failures*
*Date: Friday, April 4, 2014*
*Time: 15:45-17:45*
*Room: Auditorium 2*

### Introducing new vaccines: Challenges of decision making and lessons learned from the recent Hib vaccine introduction experience

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Adoption of new vaccines in developing countries is critical to reduce child mortality and meeting Millennium Development Goals. However, such introduction has historically suffered from significant delays, that could be attributed to various factors including: lack of recognition of the value of the vaccine (e.g. understanding disease burden, vaccine efficacy, cost-effectiveness and safety; factors related to weak health systems, such as lack of a decision making process, immunizations program factors (vaccine logistics, supply issues), as well as inadequate planning and financing; and policy considerations, such as lack of clear global recommendations and donor commitment. Recently, The Global Alliance for Vaccines and Immunizations (GAVI) supported efforts to accelerate the introduction of Hib vaccines in developing countries, which resulted in significant surge of vaccine adoption in these countries. The experience with Hib vaccines, as well as similar GAVI efforts to support introduction of the newer pneumococcal and rotavirus vaccines, provides a strategy for new vaccine adoption that will be reviewed, providing a useful model to help accelerate the uptake of other life-saving vaccines. This strategy addresses barriers for vaccine adoption by focusing on three major areas: communications to increase awareness about data needs for evidence-based decisions, research activities to answer key questions that will support vaccine introduction and long term program sustainability, and coordination with the various stakeholders at global, regional and country levels to ensure successful program implementation.

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### Vaccine confidence and public trust as drivers of vaccine failure

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An effective vaccine, supportive policy, sustainable financing, human resources, and a willing public are critical elements of any vaccine success story. A weak point in any one of these areas can make or break the public health impact of vaccines. In recent years, the oft taken for granted willingness of the public to vaccinate themselves or their children has become an increasingly challenge. An increasing number of vaccine choices, a radically changed communication environment that has allowed local vaccine concerns to go quickly viral globally, and societal changes that have nurtured debate and the right to information and voice, have converged to create a very different environment around public confidence in vaccine.

Anti-vaccination movements date back to the 1800s and have always had an underlying theme of publics wanting a voice. Some individuals and groups around the world question vaccine safety, others question the relevance of specific vaccines, and still others have perceived concerns about over-burdening a young child's immune-system or have alternative belief systems or notions of natural immunity. And, sometimes the questions raised are about vaccine choices and schedules, not a rejection of vaccines in general.

This presentation will examine modes of better understanding the drivers of public distrust behind vaccine questioning and consequent vaccine reluctance and refusals. The approaches include media and social media monitoring for signals of public concerns and waning vaccine confidence and an assessment of underlying current and historical factors that could contribute to amplifying public distrust and have negative consequences for vaccine programs. Only by understanding the dynamics of distrust and key drivers of vaccine confidence will it be possible to successfully achieve relevant vaccine preventable disease control, elimination and eradication efforts.

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### Tuberculosis vaccines

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Preventing transmission of the Mycobacterium tuberculosis (Mtb) is the best strategy to interrupt the global tuberculosis epidemic. Vaccination should therefore aim at preventing lung disease in adults, and at preventing Mtb infection. The current vaccine, Bacillus Calmette Guerin (BCG), is about 80% effective at preventing disseminated tuberculosis in young children, but protection against adult lung disease is generally poor. Uncontrolled data suggests that BCG could prevent Mycobacterium tuberculosis (Mtb) infection in certain settings: these results and proposed next steps will be discussed. New prime vaccines aim to replace BCG, while other candidates aim to boost T cell immunity primed by BCG, by environmental mycobacteria or by Mtb infection. Novel approaches that induce non-natural immunity for prevention of infection will be discussed. In the setting of a primed host response, vaccine-induced "modulation" of host response may be a more appropriate description of the vaccination goal, compared with "boost". New results of protective host responses against disease will be discussed. New approaches to tuberculosis vaccine clinical trials aim at efficiency and at early up selection of candidates. Examples of how these trials could be used to learn about protective host responses, which, in turn, would further inform vaccine development, will be provided.

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