Communication of vaccine benefit beyond the infection prevented

Les Pensières Center for Global Health Veyrier-du-Lac - France

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Steering Committee:

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Background

Immunization is one of the greatest medical success stories of the 20th century and its benefits have been widely recognized and documented. However, today's environment reflects little attention to, and a lack of confidence in vaccines. Communication to, and engagement of citizens through new technologies may help regain trust in vaccination and its benefits. In addition, it is less known that vaccination benefit goes beyond the infection prevented. The aim of this conference is to debate and illustrate this assertion through examples, information sharing and presentation of innovative digital initiatives. The outcome of this conference could lead to scientific and political actions in favor of recognizing the full benefits of immunization.

This background paper highlights some of the vaccination benefits beyond the infection prevented.

Case Studies on vaccination and Chronic Diseases /NCDs management

Non-Communicable Diseases (NCDs) are the leading cause of mortality world-wide, and as such their control has become a top global priority, with political support from the highest level. The UN Political Declaration on the Prevention and Control of Non-Communicable diseases, adopted by a UN High Level Meeting in September, 2011, led to the development of the WHO Global NCDs Action Plan 2013-2020, to prevent and control NCDs.

Persons with underlying NCDs, such as diabetes and cardiovascular diseases, are especially vulnerable to complications, hospitalizations, and even death from influenza. However, the link between NCDs and influenza is frequently underestimated. Influenza vaccination can reduce hospitalizations and deaths in older persons with diabetes by 45% and 38% respectively. Estimates of influenza vaccination efficacy in preventing myocardial infarction range from 15% to 45%, which is the similar range of efficacy than accepted routine coronary prevention measures.

Case studies on Immunization and AMR

The frequency of antimicrobial resistance (AMR) is increasing worldwide and constitutes a serious danger to public health

In May of 2014, the World Health Assembly requested (in resolution WHA67.25) that a global action plan on antimicrobial resistance be developed.

Vaccination can reduce the prevalence of AMR by reducing the total number of cases of infectious disease (though direct and indirect protection - herd effect), by reducing the number of circulating AMR strains, and by reducing the need for antimicrobial use.

Case studies on Immunization and Healthy Ageing

The WHO has reported that the number of people aged above 60 years is expected to rise two-fold by 2050 given the medical advancements. It was also stated that the older population would outnumber the number of children aged below five years, in a period of just five years. The organization stated that there is a great need for a radical societal change in order to ensure that the extra life years are as healthy as possible.

The demographic transition underway poses many medical and socioeconomic challenges. As population ages, disease morbidity and treatment costs in the adult population are likely to rise substantially. These challenges can be addressed by lessening the effects of an ageing society through healthy ageing promotion early in life and adopting a life-course approach to health.

Vaccine-preventable diseases such as seasonal influenza, pneumococcal diseases, meningitis, pertussis, shingles, measles, diphtheria and tetanus continue to place a significant burden on individuals and ageing society.

Promoting a better implementation of vaccination programmes in seniors is of particular importance as the prevention against vaccine preventable (infectious) diseases is proven to provide substantial medical, societal and economic benefits.

Background

Case-studies on the use of vaccines to improve quality of life

Some vaccines, as well as drugs can prevent infection but can also reduce severity, duration of the symptoms, and time to return to daily activities. To determine, effectiveness of the vaccines of such criteria, Patient related outcomes could be used as endpoints in clinical trials. Use of such questionnaire could broaden the evaluation on the vaccine performance and FDA in the US already published guidance to frame the development of PRO.

Case studies on how vaccination contributes to the sustainability and efficiency of health care systems.

Keeping people healthy and active for longer has a positive impact on productivity and competitiveness. Promoting good health is therefore an integral part of the smart, sustainable and inclusive growth objectives of Europe 2020. Vaccination is recognized as the most cost effective intervention after clean water, even if the existing economic evaluation tends to focus on a narrow set of benefits. Vaccination contributes to healthcare sustainability by reducing healthcare costs, by improving hospital resources allocation and efficiency, by increasing the outcome –related productivity. Then vaccines are an intrinsic value since they contribute to a healthier global society not just the health of the individuals who are vaccinated.

Innovation, collective impact and meaningful engagement: getting benefits beyond disease prevention across

New opportunities to complement surveillance solution - what's on the horizon

Novel disease surveillance systems based on information from: Internet search-engines, social media, new reports, cloud-based EHRs, and crowd-sourced systems, have emerged as new ways to monitor public health events and provide estimates of disease activity in near real-time. How these novel systems compare to traditional healthcare-based disease surveillance systems will be discussed particularly for Influenza, Dengue, and Zika.

Global Dengue Lab and Break Dengue (crowdsourcing dengue cases)

Collaborative platforms for professionals who work on the prevention, surveillance or management of dengue are becoming more and more common. Run by the Break Dengue initiative, the Global Dengue Lab offers a unique opportunity to engage with professionals from different fields around the world, providing one central point to help tackle the burden of dengue collectively. Conversations include research and development of new techniques and technologies; best-practice sharing; project development and partnerships.

Mobile Applications: the example of DengFender™/DengFensa™

Dengfender™/DengFensa™ is a complementary mobile app that HCPs can recommend to consumers/patients to bring them instant messages to help protect themselves and their families against dengue. These free mobile apps can provide in real time essential information about the symptoms of dengue, the localization of dengue outbreak and the localization of medical centers, where they could find support and advice.

Vaxitext™ is a free vaccination reminder service for Dengvaxia® offered to support adherence to the three-dose vaccination schedule and ensure an optimal protection against dengue. Vaccinees can either be registered by their HCP on a webplatform or self-register by text message. The service will send them text reminders to contact their doctor to schedule their next dengue vaccination appointment.

<u>BigData</u>

Real value of Big Data comes from combining streams of data sources with each other and analyzing them to generate new insights. The applications can mainly be categorized with 3 Ps:

- Prevision, in order to anticipate (demand, problems, behaviors, market, epidemiological, clinical, bioprocessing ...)
- Personalization, in order to provide more customized service, products or services
- Prevention, in order to identify risk or potential danger and prevent them (early signal detection)

There is a need for new techniques and tools to process all data generated by multiple sources. This is where artificial intelligence (AI), advanced data analytics and biostatistics come into play for Big Data, which will offer multiple potential applications to support vaccination programmes.

Scientific programme

Monday, December 4th, 2017

17:00 - 18:00	Registration	
18:00 - 18:20	Welcome address	Fondation Mérieux
18:20 - 19:00	Key-note address: Effect of vaccination on antimicrobial resistance: the example of the Impact of conjugate pneumo¬coccal vaccines on antibiotic resistance	Robert Cohen
19:00	Welcome dinner	

Tuesday, December 5th, 2017

Part 1

Communication on Benefit of vaccines beyond the targeted disease

Session 1

Effect of vaccination on chronic/non-communicable diseases				
Chair: Florence Baron-Papillon				
9:00 - 9:20	The effect of vaccination against infections on cancer: the example of Hep B and HPV vaccines	Mark Kane		
9:20 - 9:40	Discussion			
9:40 - 10:00	The public health importance of vaccination: protection beyond the vaccinee	Albert Osterhaus		
10:00 - 10:20	Discussion			
10:20 - 10:40	Coffee break			
10:40 - 11:00	The contribution of nurses in protecting people from influenza in England	Louise Letley		
11:00 - 11:20	Discussion			
11:20 - 11:40	Developing communication strategies on vaccine benefits and risks: ADVANCE guidance for public- private collaborations	Priya Bahri and Tin Tin Htar Myint		
11:40 - 12:00	Discussion			

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Scientific programme

Session 2

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Immunization and healthy ageing and the use of vaccines to improve the quality of life				
Chair: Paolo Bonanni				
12:00 - 12:20	Vaccines adding life to later years: WHO perspective	Martin Friede		
12:20 - 12:40	Discussion			
12:45 - 14:15	Group Picture and Lunch			
14:15 - 14:35	Herpes zoster vaccination and quality of life in ageing population	Tino Schwarz		
14:35 - 14:55	Discussion			
14:55 - 15:15	Scientific and policy momentum to support active and healthy ageing	Gaetan Gavazzi		
15:15 - 15:35	Discussion			
15:35 - 15:55	Immunisation in an ageing society	David Sinclair		
15:55 - 16:15	Discussion			
16:15 - 16:30	Coffee Break			

Session 3

How vaccination contributes to the sustainability and efficiency of health care systems: case studies Chair: Martin Friede				
16:30 - 16:50	The case in Lybia	Suleiman Abusrewil		
16:50 - 17:10	Discussion			
17:10 - 17:30	Controlled direct effect of measles vaccination on markers of infectious disease among children 9-59 months of age in the Democratic Republic of Congo	Hayley Renee Ashbaugh		
17:30 - 17:50	Discussion			
19:00	Dinner			

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Scientific programme

Wednesday, December 6th, 2017

Part 2

Innovation, collective impact and meaningful engagement

Session 4

Getting benefits beyond disease prevention across				
Chair: Pascale Cottin				
8:30 - 9:00	WHO-validated websites provide trustworthy information on vaccine safety (the VSN) and the VSN web analytics project	Isabelle Sahinovic & Alberto Tozzi		
9:00 - 9:15	Discussion			
9:15 - 9:35	Using Internet-based information to complement traditional healthcare-based disease surveillance	Mauricio Santillana		
9:35 - 9:50	Discussion			
9:50 - 10:10	Building actionable and collaborative dengue surveillance	Nicholas Brooke		
10:10 - 10:25	Discussion			
10:25 - 11:00	Coffee break			
11:00 - 11:20	Use of text messaging to support completion of vaccination schedules	Melissa Stockwell		
11:20 - 11:35	Discussion			
11:35 - 11:55	Advances in epidemic forecasting & implications for vaccination	Michael Johansson		
11:55 - 12:10	Discussion			
12:15 - 14:00	Lunch			
14:00 - 14:20	Education to build resilience to vaccine safety scares in future generations	Siff Malue Nielsen		
14:20 - 14:35	Discussion			
14:35 - 15:00	Closing lecture: The «Fluad Case» in Italy: Could it have been dealt differently?	Paolo Bonanni		
15:00 - 15:20	Discussion and end of the meeting			



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