

# ***The importance of evidence-based and transparent communication to get trust towards vaccination programs***

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Vaccination programs represent a very effective (and cost-effective) tool for public health. Benefits of vaccination are witnessed by many success stories: smallpox has been eradicated; fight against polio is coming to an end; measles and rubella have been eliminated from the Americas and dramatically reduced all over the world; deadly diseases like tetanus and diphtheria have virtually disappeared in large areas of the world. Without any doubt, vaccination has been the major contributor — together with overall improvement of hygiene and life conditions, as well as effective use of antimicrobial drugs — to reduce the overall burden of infectious disease and to provide substantial economic growth in the world<sup>(1,2)</sup>.

On the other hand, such large reduction of infectious disease burden has led in parallel to a significant reduction of awareness of the risks related to infectious diseases among the public. As a consequence of lack of awareness people adopt risky behaviors including refusing vaccination. Re-establishing the correct perception of risk related to infectious diseases compared to risk of adverse events caused by vaccination is a public health priority. But, how to achieve that?

It is common knowledge that in communication science ‘one-size-fits-all’ approach does not work; risk perception is very much related to local culture, historical traditions, even personal experience. However, few simple rules can be taken into account as a common ground to build effective communication, reset a correct risk perception and, consequently, restore people’s trust in public health and vaccine prevention.

## **VACCINATION IS NOT A RELIGION. SCIENTISTS SHOULD NOT SAY THEY “BELIEVE IN VACCINATION”**

Fideistic approach to vaccination is as counter-productive as vaccine scepticism. Modern vaccines as well as current vaccination strategies are the result of thorough scientific reasoning; scientific approach involves doubting, questioning, and challenging theories and paradigms. Vaccination champions that approach the public showing blind confidence towards vaccination and demonstrating complete absence of doubts on vaccines safety and effectiveness provide an immediate feeling of being either biased or affected by conflict of interest. Never say ‘I believe in vaccination.’ Much better “Evidence shows that protection provided by this vaccine is X%” or “Evidence shows that this adverse event is reported in X cases”, etc.

## **PROVIDE EVIDENCE ON THE BENEFIT OF VACCINATION**

There is a popular cliché circulating among the scientific community, according to which vaccines, besides clean water, are the

most effective measures to reduce mortality<sup>(3)</sup>. It is hard to affirm that without providing a full picture of the contest where to apply that statement; it is, again, a sign of fideism more than science. In fact, that statement can be referred either to the past or to specific settings in the developing world where it is still completely true; on the contrary, someone can argue that today in the developed countries the highest impact on people’s mortality could be achieved by fighting obesity and promoting healthy lifestyle. Exaggerating the impact of vaccines can provoke immediate reaction to disprove such absolute statements. Moreover, the real impact of vaccine is so evident that there is no need for exaggeration. Showing historical trends of infectious diseases targeted by vaccination can be a good option. In addition, strong evidence can be provided on potential impact of newly introduced vaccines on the burden of diseases showing effectiveness data — if available — and possibly good modelling studies.

## **VACCINES, LIKE ANY OTHER DRUG, CAN ELICIT ADVERSE EVENTS**

Being asked ‘Vaccines are safe?’ the answer should be ‘Vaccines on the market have a very good safety profile’, or alike. Nobody can say ‘vaccines are safe’ without provoking strong reactions by anti-vaccine activists listing all vaccine accidents reported during the history of vaccination<sup>(4-6)</sup>. Adverse events are a natural companion of any therapeutic or preventive measure; on the other hand, we all know that safety assessment of vaccines is carried out very carefully using all available methodological and analytical tools and vaccines are marketed only after evidence of good safety profile<sup>(7)</sup>. Risk-benefit ratio is always favorable when vaccines receive marketing authorization. Then, transparent communication should include risk-benefit analysis, safety profile, but also information on known adverse reactions and uncertainties on unknown, possible, rare adverse events that might be revealed by the means of post-marketing surveillance.

## **DO NOT BE AFRAID TO SHOW UNCERTAINTIES**

Communicating uncertainties is a complex skill. While communicating on vaccine safety and effectiveness of ‘old’ vaccines is fairly easy, as we can support our communication with a large amount of evidence provided by long experience, on the other hand we must be careful when talking about newly introduced vaccines. Implementation of a new vaccination program is supported by pre-marketing studies that can be variously extensive, but data on effectiveness are usually scarce and very rare adverse events cannot be ruled out. In such case, public health decision

on starting a vaccination program is based on the best available evidence, but needs to be further supported by active monitoring of both effectiveness (impact studies) and safety. Post-marketing monitoring is integral part of the vaccine lifecycle and is gaining more importance today when technology is providing public health with more vaccines in a shorter development period. Transparent communication about the available evidence on vaccine benefits is the best way to gain people's trust. On the other hand, acknowledging the level of uncertainties should be followed by an effective monitoring plan aimed at filling the knowledge gaps in a reasonable timeframe<sup>(8)</sup>.

## RULE OUT ANY POTENTIAL CONFLICT OF INTEREST

Conspiracy theories are one of the strongest arguments of anti-vaccine activists. Conflict of interest is the best fuel for conspiracy theories. In the past, most of the vaccine production was in the hands of governmental agencies; the societal benefit of vaccination was evident to everybody and conflict of interest was not a major issue. Nowadays, vaccine production is in the hands of few large multinational companies that are, in fact, partners of government in the implementation of priority vaccination strategies. Such proximity between public health officials and vaccine producers must be carefully managed with the only purpose to serve the public good. In addition, there is the paradoxical situation that the best experts in vaccines are those that carried out vaccine research, including vaccine trials sponsored by the industry. In such case, transparency and clear declaration of potential conflict of interest is paramount. Those scientists, more than others, should be extremely careful in communicating the benefit of this or that vaccine and should make an extraordinary effort to mitigate the enthusiasm caused by a positive vaccine trial; to be on the safe side, their communication should be as much as possible limited to the scientific community. Public health agencies should use the precious advice of those experts in a transparent framework of collaboration, always assuring independency.

## FINAL CONSIDERATIONS

Understanding the determinants of vaccine acceptance is paramount for the success of any vaccination strategy. A model recently developed by the WHO Strategic Advisory Group of Experts (SAGE) working group dealing with vaccine hesitancy shows how complex this problem is<sup>(9)</sup>. Nevertheless, it is clear that trust in health care providers and good understanding of risk/benefits are important components of the model.

Today, much more than in the past, people's short memory for what the situation was in the pre-vaccine era requires extra efforts in terms of health education and communication. Triumphant messages, lack of transparency, suspect of conflict of interest are the worst enemies of effective communication. Basing communication on the best available evidence is the only solution to gain people's trust. To achieve that, very good monitoring systems should be put in place to assess safety, effectiveness and impact of vaccines in the post-marketing phase.

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