

*Editorial***Promoting Evidence-based Vaccine Safety Research and Communication—The Vienna Vaccine Safety Initiative****Raising Awareness**

With more vaccines available and accessible around the world, globalization of vaccine safety efforts has become increasingly important. As a result of successful immunization programmes in many parts of the world, parents and many healthcare providers (HCP) have limited or no experience with the devastating effects of diseases such as polio, smallpox or measles. As long as vaccine acceptance has been sufficiently high, unvaccinated children have been relatively protected through herd immunity. Meanwhile, the fear of disease has shifted towards concerns regarding vaccine safety [1].

Over the past decades, some parents have become reluctant to have their children fully vaccinated, despite a growing body of evidence supporting the safety of recommended vaccines and refuting common misconceptions. Parental vaccination concerns have been attributed to the spread of rumours and miscommunication, resulting in a relative overestimation of the risks associated with immunizations as opposed to a lack of awareness of the risks of vaccine preventable diseases [2, 3].

Some of these issues relate to insufficient information, but other issues are equally or even more problematic, such as: varied preferences for involvement in decision-making; folk beliefs about vaccines and safety; scepticism of medical providers and mistrust towards 'industry' as well as a mismatch between actual and preferred sources of information. Media controversies often feed into these fears and uncertainties supporting/generating specific attitudinal barriers, leading to a further decline in vaccination converge and erosion of confidence in vaccines.

The risk of vaccine preventable diseases may be perceived differently depending on individual levels of access to high-quality healthcare. A decline in vaccine acceptance among wealthier strata of the population may put those at risk, who have fewer resources available. Participation in vaccination programmes needs to be encouraged throughout all sectors of the community. Article 24 of the globally adopted and universally respected UN Convention on the Rights of the Child emphasizes the right of every child 'to the enjoyment of the highest attainable standard of health' [4].

Communicating Safety

HCPs can correct these misconceptions, but they must recognize and acknowledge parental concerns and understand key factors [5, 6]. This leaves HCPs in a position where they are expected to keep up to date on all aspects of the vaccine controversy: the steadily emerging body of evidence in the scientific literature as well as long-standing distrust in any intervention that might pose some risk, and present rumours and concerns circulating in the lay media. HCPs must help parents to access timely and data-driven health information necessary for informed decision-making and dedicate sufficient time and resources to discuss vaccine safety systematically and coherently with worried parents and children.

HCPs should establish an open, non-confrontational dialogue with vaccine-hesitant parents; provide easily comprehensible examples and analogies to convey accurate information in lay language. Personal stories and images of patients and parents affected by vaccine-preventable diseases and reports of disease outbreaks can serve as useful reminders of the need to maintain high immunization rates.

This dialogue should be established at an early stage, allowing parents sufficient time for the decision-making process prior to the scheduled immunization date. In first-time parents, the best moment to address such questions may be at the time of pregnancy preparation—or at least during pregnancy, when parents may be more open to contemplating issues of disease prevention and when maternal immunizations are discussed in the context of protecting the health of the unborn child. Childhood immunizations could be discussed here, rather than after the arrival of a newborn baby, when the first weeks of adjustment may often be overwhelming to the parents. Ideally, the topic of vaccines should not be discussed in isolation but embedded in the overall theme of child safety and the prevention of disease and accidents in the household.

During vaccine consultations, physicians should not shy away from addressing both the risk and benefits of vaccines adequately [7]. A survey among parents of healthy children in Vienna revealed that parents' satisfaction with the physician–parent interaction was directly linked to the amount of information provided—about both the risks and the benefits of vaccination. Parents who were most informed

about the risks and the benefits were most likely to have their children immunized [8].

The information should address any concerns raised during the consultation. Moreover, paediatricians should inform parents about the existing vaccine safety infrastructure and surveillance systems. Only an on-going and open dialogue may successfully reassure parents that immunization remains the best and safest option for their child. Providers should address cultural and community concerns through effective communication, appropriate delivery, and targeted advocacy to make the immunization programme locally relevant. Moreover, HCPs should adhere to international immunization safety standards including the correct administration and documentation of the immunization event as well as the monitoring of adverse events following immunization (AEFI) [9]. Vaccine expertise must be generated and promoted among HCPs at all levels of the health communication chain [4, 10].

The role of health communication and education is critical to address these challenges successfully. The media landscape has become increasingly complex and the Internet has moved to the top of vaccine safety information sources for parents [11–13]. Systematic analysis of the vast body of information available online may help policy makers and stakeholders develop a deeper understanding of the basic structure underlying common misperceptions and fears. Results of vaccine safety perceptions research should then feed back into the education of healthcare and vaccine providers [14].

Physicians, who often find themselves at the front-line of communicating the emotionally charged topic of vaccination, need to assess levels of background knowledge, attitudes, preferred and actual sources of information in the individual setting [15]. This includes the overall decision-making process within the family regarding vaccines [16]. Most of all, it is key to bear in mind that for most parents, the health and safety of their children and family comes before matters of public health and the common good [17, 18].

During any vaccine consultation, at-risk family members such as premature infants and the elderly need to be identified. Before newborns or patients with chronic conditions or immunosuppression are released from the hospital, the vaccination status of the other household members should be checked and updated if necessary (cocooning strategy) [19]. This also requires effective coordination among physicians from different disciplines, including family medicine, paediatrics, gynaecology, surgery and preventive medicine.

A key issue in low-resource settings is the lack of trained HCPs. In a busy community clinic and during EPI (Expanded Program of Immunization) days there is hardly enough time for a detailed vaccine one-on-one safety consultation. Supplemental

sources of well-balanced lay language information should be made available to parents and children through community and school-based programs. Additional responsibility rests upon the mass media and internet publishers in different parts of the world. Public health institutions may need to take these developments into account by disseminating easily accessible and comprehensible vaccine safety information via the web and social media.

Global collaboration and coordination of vaccine safety efforts is becoming more important every day. Much can be gained from the exchange of ideas among clinicians and vaccine safety specialists from different disciplines and geographic backgrounds, but also from the interaction with specialists in other areas, such as public health, epidemiology and geographic medicine, social and media/communication science, cultural anthropology, linguistics, psychology and information technology.

Advances in information technology allow rumours and misinformation to travel quickly, but also provide an enormous opportunity to facilitate the interaction and collaboration among physicians and vaccine safety experts from different parts of the world. Vaccine Pharmacovigilance programmes are coordinated internationally to increase chances to detect rare and very rare AEFI [9]. Alumni from vaccinology training workshops are forming networks of child health advocates [10]. New technologies have enabled HCPs and scientists to exchange ideas in real-time and to work together on common concepts, documents and projects, without the need for long-distance travel. This has opened the avenue for international collaboration among physicians and scientists from both developed and developing countries towards a common goal, the safe and effective prevention of infectious diseases.

Working Together

The Vienna Vaccine Safety Initiative has emerged from a think tank of vaccine safety experts from different parts of the world volunteering their time to discuss avenues towards promoting evidence-based vaccine safety research and communication. To save cost and time, members meet during monthly web- and teleconferences to identify and discuss key challenges and opportunities in vaccine safety research and communication. Based on these discussions, several projects have been proposed and developed. Importantly, the initiative is entirely *pro bono* and does not receive any industry funding.

Current projects include: a survey of vaccine safety perceptions among parents of children attending kindergarten in Vienna, Austria, a survey on education in vaccine safety and AEFI reporting practices among paediatricians in Russia and Germany, a *pro bono* project on vaccine safety communication with the School of Design Thinking at the Hasso

Plattner Institute in Potsdam, Germany, a systematic review of vaccine safety reporting in developing country randomized vaccine clinical trials [20], the promotion of surveillance programmes for AEFI and vaccine preventable diseases, vaccine safety training initiative and a book project on 'communicating vaccine safety'.

The month of April 2012 marked the first anniversary of the formal establishment and recognition of the Vienna Vaccine Safety Initiative (www.vi-vi.org) as a not-for-profit organization based in Berlin, Germany. Interested colleagues are welcome to contact or join us at info@vi-vi.org.

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