

## Vaccination – Yes or No

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### Editorial

Recently, the public has frequently asked whether the vaccine is harmful or not. There are those who claim that the vaccine is harmful and this proves the negative side effects that appear as a result of vaccination. Evidence-based medicines acknowledge that there are rare side effects, but that does not mean that the vaccine will harm every organism who receives it. Although the vaccines eradicated some illnesses, it is difficult to convince someone whose family member has been ill with a disease as a result of the vaccine. Unfortunately, such negative side effects are occurring in the practice.

Vaccination is a method of introducing living modified or artificially obtained viral or bacterial agents into the body with a goal to imitate a natural infection and intentionally creation an immune reaction - by creating an antibody. When they meet the cause, such antibodies protect the body and prevent diseases from severe illness. Vaccination is applied by taking it as a solution in the mouth or by injection into the muscle. Vaccination is considered like one of the greatest health achievements in the twentieth century in the field of medicine as a scientific discipline and the most successful applied public health method for suppression diseases.

When it comes to children, parents make decisions about vaccination and they think they are properly doing if the child does not get vaccinated. Although they know little about medicine, they think they are experts. Parents' views of themselves as experts are not surprising. Parents make decisions for their children based on their own assessment of their children's needs, desires, abilities, and ambitions daily [1]. In an expanding number of spheres - schools, media, extracurricular activities - parents generally, and mothers specifically, are expected to be experts on their own children. As parents are increasingly expected - and expect - to cultivate children into adulthood, it is not surprising that this culture of individualism and demands for parental expertise extend into areas of healthcare, including childhood vaccine choices. Parents who opt out of vaccines are often portrayed as either ignorant or armed with "internet educations." This dismissive view of the small number of parents who intentionally refuse vaccines underestimates the labor and intent these parents bring to their vaccine choices and to claiming their expertise.

### Evidence-Based Medicine

When detectives investigate a crime, they search for evidence to solve that crime [2]. They need to locate evidence to identify a suspect; then they need further evidence to persuade the public prosecutor to charge the suspect with the alleged crime; then they need still more evidence to prove the guilt of the suspect to the court in order to obtain a conviction. This is not unlike the processes involved in practising evidence-based health care. Just as the detective searches for evidence to solve the crime, health care professionals look for evidence to guide

them in their practice. Just as the detective must have evidence to establish the accused person's guilt, the health care professional must have evidence to support the proposed activity, intervention or course of treatment. This requires a rigorous and comprehensive search for information that will assist them to select and deliver the most effective or beneficial form of care to their clients.

Evidence-based medicine (EBM) has been defined as "the conscientious, explicit, and judicious use of the best evidence in making decisions about the care of individual patients" [3]. The EBM stems from the physician's need to have proven therapies to offer patients. This is a paradigm shift that represents both a breakdown of the traditional hierarchical system of medical practice and the acceptance of the scientific method as the governing force in advancing the field of medicine. Simply stated, EBM is applying the best evidence that can be found in the medical literature to the patient with a medical problem, resulting in the best possible care for each patient.

Evidence-based medicine (EBM) is a new paradigm for the health-care system involving using the current evidence (results of the medical research studies) in the medical literature to provide the best possible care to patients [4]. It has encouraged the rapid and transparent translation of the latest scientific knowledge in the day to day practice of medical professionals. EBM has given new direction in all the fundamental responsibilities of medical professionals like care of the patient, research, teaching and learning, and public health. There is need to move from opinion-based education to evidence-based education. Best Evidence Medical Education (BEME) is the implementation of methods and approaches to education based on the best evidence available. The evidence available may be in a wide variety of formats for example: the results of the controlled experimental studies, description of case studies, and opinions of experts.

### Importance of Vaccination

Wherever broadscale vaccination programs have been implemented, their success rates are remarkable [5]. Incidences of measles, polio, rubella, mumps, pertussis, and diphtheria have all been dramatically reduced in countries where broadscale vaccination programs exist. The vaccines against these diseases were developed mostly by trial and error, and therefore could only be successful for pathogens that cause disease in a direct way. Pathogens that use more tricky strategies and subvert, impair, or misdirect the host immune response cannot be prevented by such a strategy. The next generation of vaccines has to be designed in a rational way, on the basis of our increasing knowledge of immunology and molecular genetics at the interface between pathogen and host. Fortunately, basic sciences have advanced dramatically during the past decade, and we now have available the genomic blueprints of all major pathogens as well as of the human host and the most-favored experimental animal model, the mouse.

Whether or not, in face of the accumulated evidence of the importance of vaccination to children, who cannot judge for themselves of its value, it may be expedient to relax those provisions of the Compulsory Vaccination Acts (published on December 24th, 1853. in United Kingdom) which allow of repeated penalties on such parents as refuse vaccination, is a question which lies within the province of the statesman rather than the physician to settle [6]. To the physician, who realises the powers of vaccination, and who knows the malignity of the disease against which it protects, the notion of enforcing the acceptance of such a boon is distressful. But the distress is akin to that with which he himself has at times to force nourishment down the throat of a lunatic who is starving himself; and in the case of vaccination he sees that it is for the security of children otherwise helpless, not the recalcitrant himself, that compulsion is wanted.

Vaccination is one of the most effective methods in the prevention of infectious diseases, the last century public health project which accounts for the prevention of 2 to 3 million deaths in children each year worldwide [7]. Despite the fact that vaccination is mandatory in a great number of countries and the evident epidemiological data that indicate the effectiveness of vaccination which is reflected in the significantly lower incidence of preventable childhood infectious diseases (eradication of smallpox, eradication of polio in the most countries of the world), there is an increasing number of parents who refuse to vaccinate their child, which results in increased number of unvaccinated children and occurrence of greater or smaller epidemics of preventable childhood diseases. The reason for an increased number of unvaccinated children could be explained by the parents' fear of vaccine side effects and by doubts in the effectiveness of vaccination,

the inadequate communication with health care workers and wish to receive information from anti-vaccination movements. Parents could receive the information from different sources: public health employers, family members, friends, media, blogs, different Internet sources, and Internet social network, different interest groups and anti-vaccine movements. According to recent resources, the physicians are still the most preferable source of information from whom the parents want to receive the information about the vaccination. Therefore, the duty of physicians is to know the possible models of communication in order to provide the qualitative information regarding the vaccination.

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