



Editorial Commentary on the paper “Mandatory vaccination in Europe”

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Provenance and Peer Review: This article was commissioned by the editorial office, *Translational Pediatrics*. This article did not undergo external peer review.

Comment on: Vaz OM, Ellingson MK, Weiss P, *et al.* Mandatory vaccination in Europe. *Pediatrics* 2020;145:e20190620.

Submitted Apr 27, 2020. Accepted for publication May 18, 2020.

doi: 10.21037/tp-20-128

View this article at: <http://dx.doi.org/10.21037/tp-20-128>

Childhood immunization represents one of the most cost-effective public health attainments for decreasing children’s morbidity and mortality (1). Immunization programs aim to eliminate the vaccine-preventable diseases in children. However, the World Health Organization reports more than two million deaths among children each year due to vaccine-preventable diseases (2). It seems that current policies and measures aiming at increasing vaccination coverage rates, are inadequate. This fact underlines the necessity of implementing new measures and changing policies so as to increase vaccination coverage rates.

In countries where vaccine endorsement policies have not been effective and/or outbreaks of vaccine-preventable diseases continue to occur, immunization mandates may be an efficient and immediate strategy to reach and maintain sufficient levels of vaccination coverage rates in order to protect children from life-threatening diseases.

In view of this issue, assessing the effect of mandates on vaccination coverage and the probable hitches of forced policies, is a subject of essential significance.

Furthermore, the mapping of the existence of such legislations on a country level in relation to the incidence of associated vaccine coverage and the incidence of the respective vaccine preventable diseases, is an important piece of information for policy vaccine stakeholders.

In a recent issue of the *Journal of Paediatrics*, Vaz *et al.* (3) concluded that mandatory vaccination in association with fines in 29 countries including the members of the European Union as well as Iceland and Norway, were related to higher vaccination coverage. The authors utilized and analyzed publicly available data (European Centre for Disease Prevention and Control and the World Health Organization) on vaccination rates and the incidence of respective diseases. Information on policies of mandatory or recommended vaccinations was retrieved from the official national websites of the ministries of health and from the Vaccine European New Integrated Collaboration Effort (4). The analysis was performed for pertussis and measles due to specific reasons which are discussed in detail in the methodology of this study.

Some very interesting conclusions can be drawn from this report. Firstly, mandatory vaccination in Europe was associated with increasing incidence of vaccination coverage rates for both measles and pertussis. In the case of mandatory vaccination with no alternative of a non-medical vaccination exclusion, the vaccination rate of measles was significantly reduced. Secondly, the existence of economic fines for non-vaccination was related to a lower incidence of both pertussis and measles. Lastly, financial penalties may be an effective method in a wide-ranging mandatory

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vaccination program.

What other evidence is available on mandatory vaccination?

The implementation of mandatory vaccination has been adopted in the United States of America and Australia in order to improve and endure vaccination coverage rates (5,6). Among European countries there is wide-ranging heterogeneity on mandatory vaccination policies. Eleven European countries (Belgium, Bulgaria, Croatia, Czech Republic, France, Greece, Hungary, Italy, Latvia, Poland and Slovakia) have already applied legislation policy on mandatory vaccination (7). However, the diversity of measures utilized among European countries indicates that there is no proven strategy to be applied.

A recent systematic review analysis of 21 studies concluded that immunization mandates was an effective measure to increase vaccine uptake among the group on which the mandates have been implemented (8).

In France, the implementation of the law on mandatory vaccines resulted in a significant increase in vaccination coverage rates for hepatitis B and meningococcal vaccines (9).

Furthermore, variations on mandates have been implemented with success in Australia based on the approach “No Jab—No Pay” (a no vaccination, no family tax benefits program) (6).

The big challenge and the principle goal

There is no doubt that the major challenge, and the principle goal, have to do with adopting and implementing efficient approaches in order to improve immunization coverage rates.

The goal of the Global Vaccine Action Plan was to reach 90 % coverage on a national level, for all vaccines included in national vaccination schedules in 194 countries by 2015 (10). Yet, only 66% of the countries accomplished this goal by the year 2014 (11).

Mandatory vaccination may be an effective measure in order to achieve this goal, however mandatory vaccination has also spawned vigorous arguments and conflict including legal issues (12). Many questions and issues are arising concerning the policy on mandatory vaccination, such as under what conditions is it justifiable and what is the risk of harm and the impact of removing choice from personal decision-making? In addition, the selective or partial vaccine mandates might be harmful for a comprehensive vaccination

program (13). What are the limits of parents’ decision-making over their children’s healthcare? Traditionally these kinds of decisions are considered to fall within the zone of parental discretion. Does this also apply to vaccination? In our humble opinion this is not the case with vaccination, because the healthcare benefits are not only for the individual child but also for the entire population. Moreover, the benefit also applies to those children and adults who, for medical reasons, cannot be vaccinated and their protection against vaccine-preventable diseases relies solely on herd immunity.

Health care organizations should aim at a high level of immunization coverage and must make all possible efforts to achieve this goal for the protection of children and the community, in general, against vaccine-preventable diseases. When data such as those described by Vaz *et al.* (3) are available, then the public health authorities can adjust their policies on vaccines to achieve their goals.

Methods for improving vaccination coverage rates should firstly be based on: (I) improving the infrastructure used for delivering vaccines, (II) training health care providers involved, (III) raising awareness about the significance of vaccines amongst parents and (IV) addressing vaccine hesitancy (14,15). Vaccine hesitancy is a global phenomenon. It contributes to the low vaccination rates and many countries have developed a lot of strategies to decrease this attitude among parents. However, in a recent large study by the European Academy of Paediatrics, a significant vaccine hesitancy rate was found in many European countries (16).

Health care providers, especially those who work in primary care, play a significant role in increasing vaccination rates. Therefore, greater publicly available, scientifically supported information on vaccinations is of the utmost importance (17). Some essential practices from health care providers in order to contribute to the effort of increasing vaccination rates are the following: (I) usage of combination vaccines (18), (II) reminder of recall methods such as text messaging (19), (III) electronic record alerts, (IV) providing informative and educational material in the waiting area (20), (V) the implementation of standing orders for immunization to minimize missed chances for immunization (21). In addition, vaccine strategies must be built on evidence, and not motivated by political reflections (13). A recent example is the suspension of the support of the Human papillomavirus vaccination due to perceived safety issues, which led to a dramatic reduction in vaccination coverage (22).

In countries where vaccination coverage rates are not at

satisfactory levels and/or outbreaks of vaccine-preventable diseases tend to rise, the application of mandatory vaccination could be an effective intervention in protecting children from these diseases (23).

Mandatory vaccination should always be implemented with caution and with regard to the setting, when an effective level of population protection is not achieved by voluntary immunization.

Forceful vaccine safety assurance and vaccine infrastructure and educational programs are the most important components for increasing the vaccination coverage rates of vaccine-preventable diseases. The effective immunization programs necessitate the use of compound tools, including education, novel enthusiastic incentives, responsibility and a robust commitment by all associated stakeholders. The ideal scenario is to achieve high vaccination coverage rates via the inducement of both parents and physicians without implementing mandates for vaccination. However, in many instances mandatory vaccination might be a necessity and will most probably save children's lives.

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/tp-20-128>). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Cite this article as: Hadjipanayis A, Efstathiou E. Editorial Commentary on the paper “Mandatory vaccination in Europe”. *Transl Pediatr* 2020;9(3):206-209. doi:10.21037/tp-20-128