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The Ethical Duty of Physicians to Strengthen Their Own Immunization and Childhood Vaccination

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Abstract

Vaccines are one of the most significant discoveries of humanity and are responsible for saving millions of lives around the world. However, their unquestionable successes are criticized and lead to the refusal of parents to vaccinate their children, which causes severe public health problems. There is an ethical duty to adopt various protective measures for the child population, and doctors are considered as decisive actors to help overcome this war. The vaccination rates among doctors and children are very meager, generating a lot of discussion about the implementation of compulsory vaccination for both groups. Thus, medical ethics and bioethics point out some ways for medical professionals to recognize the imperative need for self-vaccination and their patients' sensitization to vaccination, supporting the persuasion of their colleagues and patients. Moreover, the ethical/bioethical principles of the physician's highest duty to protect the society are anchored in beneficence, not maleficence and justice, and they surpass the autonomy right to vaccine refusal. Also, it is expected that the development and dissemination of altruistic ethical values by the physicians can give significant support in the conquest of the "common good."

Keywords: medical ethics, bioethics, vaccination, public health, responsibility, moral duty, altruism

1. Introduction

Vaccination is the medical sacrament corresponding to baptism (Samuel Butler, 1835–1902).

Never in the history of human civilization each person's well-being has been so intrinsically linked to others since plagues and pandemics do not respect national boundaries in a globalized

world, and also, the unprecedented scope and speed of these universal challenges require articulated responses from everyone [1]. Nowadays, we live in a global village and to live “well” we are going to depend on our ethical response to the idea of a single world for us all [2]. Globally, vaccines are considered one of the most significant discoveries of medicine due to the enormous reduction in mortality and morbidity of various infectious diseases, including the eradication of smallpox [3], and also considered the most efficient and cheapest medical intervention. The World Health Organization (WHO) goal is that mass campaigns promote, at least, the protection of 95% of the target population of a given community because only then those who could not be vaccinated are going to receive the benefits of the so-called herd immunity. Bill Gates, who is the patron of numerous vaccine research, said: “*It is a matter of the most basic human justice that we do all we can to extend these live-saving drugs throughout the globe*” [4]. It is true that the vaccine is not free from adverse events and it is not always effective although vaccine denials use arguments without any reason to generate a war of lies, expressed as follows: *a lie will go round the world while truth is pulling its boots on* [5]. As a result of these controversies, the scientific literature is rich in issues related to vaccination such as the incomprehensible low vaccination rates of physicians and other health professionals. Also, the discussion on compulsory vaccination of these professionals and children, ethical analyzes on physicians behavior that do not self-vaccinate, do not guide their patients and refuse to attend them. In fact, medical institutions and public health officials around the world are at war with these movements that are considered as significant perpetrators of new outbreaks in many countries. Thus, in the counter-offensive of public officials, laws, in several countries, are making child vaccination compulsory [6] and health institutions are beginning to require influenza vaccination from their health professionals. The success of global vaccination will depend on maintaining the population’s trust in immunization programs, public policy makers and health professionals engagement [7], especially, physicians. In this call for war, it is affirmed: *There’s a war going on out there—a quiet, deadly war* [8], and therefore, the war is literally on fire. On the one hand, there are parents bombarded by misleading propaganda about vaccine damage by irresponsible movements. On the other side, there are doctors tired of parents who do not wish to vaccinate their children, and then, they are refusing to care for these families. In the midst of this not-so-silent war, there are defenseless children because their parents are more afraid of vaccines than diseases. Moreover, new groups of parents are concerned about their vulnerable children who cannot be vaccinated for medical reasons [8]. Thus, in the middle of the crossroads, one can ask the doctors of the world: in which side of the trench are they? It is in this war zone that one hopes to contribute to the reflection on some ethical, bioethical and legal aspects related to medical autovaccination and child vaccination promotion, with the aim of sensitizing physicians to stand on the moral side of the trench and externalize their ethical values through effective and altruistic actions. We all have to aspire to excellence in what we do, and the current pursuit of excellence as in Aristotle’s time is the first ethics objective and this is the moral obligation of every human being and, especially, of the professionals [9]. Epidemics are lurking because flu virus are unpredictable, continually changing and both H5N1 and H7N9 are the possible origins of a new pandemic [10].

Therefore, if there is a declared war, it will be urgent to identify characters and weapons so that the ethical side of combat will be victorious. Besides favorable public policies, the central characters are health professionals, especially physicians, who are expected to be ethically aware of the need for their immunization against epidemic and pandemic infectious agents,

in preparation for war. Then, they should use as powerful weapons the strength of their altruistic examples and ethical and bioethics arguments, in daily battles, to convince the forces against children's vaccination. The present chapter aims at discussing applicable ethical and bioethical arguments so that the global community will be the victorious side in the war for vaccination and the common good.

2. Public health ethics—implications for health professionals

Para que la convivencia social sea ordenada y fructífera toda persona debe comportarse de acuerdo con ciertos principios éticos y sociales (Francesco Torralba, 2016).

There is a health understanding regarding the context influences in which one lives. Thus, health does not mean the same thing for all people because it is guided by cultural, political, religious and scientific values. Actions and care to prevent illnesses prescribed by public health physicians follow health policy guidelines adopted by the government. Thus, such instructions may also be conflicting with the community values and, therefore, they are not entirely supported by the people. Individual health care is characterized by doctor-patient relationship and occurs in the clinical practice since public health focuses on the collective, and its actions emphasize the population health conditions in the prevention of diseases, as well as social, economic and demographic factors that influence health and disease process [11]. The public health goal regards diseases prevention and health promotion to prolong life through the society organized efforts, and then, it operates in four different fields. (1) Health promotion and disease prevention. (2) Risk reduction. (3) Research and (4) Socioeconomic disparities with actions to minimize consequences on health [12]. The public health started more than 100 years ago as an organized field and suffered the influence of several professions [11]. Professions diversity is a real challenge and becomes even more prominent when it aims to turn multiprofessional work into an interdisciplinary practice by taking into account the knowledge of professions involved, and also, by considering the cultural values and population knowledge they serve. Therefore, public health professionals should influence the patients' choices regarding support for therapeutic behaviors or conducts before a specific situation. It is also challenging because may generate ethical conflicts. The professionals' values and population they attend could be different, and professionals need to emphasize the importance of collective actions contained in public policies recommended by governmental institutions rather than actions that prioritize the individual [13]. Often, professionals face, in their daily practice, with ethical dilemmas and their conflicts may be due to the programs they need to develop and are mostly imposed on people without previously discussing their guidelines. Thus, it is up to the public health professionals to convince the community that the programs are beneficial and will achieve the objective of promoting the population's health without causing any individual damages [11]. A clear example is a lack of support to vaccination by the population because they believe that vaccines have more harmful effects than beneficial religious precepts, among others. Many times, the public health professionals need to recommend actions that interfere with people's lives, and therefore, they use the epidemiology knowledge, clinical practice, and guidelines contained in the programs. Undoubtedly, such actions aim to reduce

morbidity and mortality; however, they raise ethical questions regarding the means by which results are achieved. Again, it can generate ethical conflicts arising from knowledge scientific dichotomy and community values in which they operate, and thus, ethical precepts must mediate their decisions. Nevertheless, what moral rules are appropriate to public health decisions? Thus, public health, in addition to ensuring communities' health, also recognizes that individuals' health is linked to their lives in the community, and then, their non-appreciation would lead to the failure of all. That makes decisions regarding health protection and maintenance, which obey individuals' rights and duties, communities and populations, a central and profoundly complex task for professionals that justify the use of proper ethical principles for public health [13]. It is necessary to observe the ethical principles contained in the Ethics Code for Public Health and recommended by the Public Health Leadership Society, in 2002, to assist conflicts solution [13]. Therefore, the code has clear guidelines to standardize ethics issues about research and public health. However, it does not guarantee the professionals' skills acquisition. Then, ethical issues in public health must be discussed and studied continuously with the clarity that there will always be something new to add since such a field presents emerging and persistent ethical aspects.

The Editorial of *Lancet Infectious Disease* (January, 2018) warns that this month marks the 500th anniversary of the first attempts to control the plague infectious disease in England. However, the recent outbreak in Madagascar reminds us that it is not only confined to the past and many cases continue to be reported in Africa, the Americas, and Asia [14]. Why? Because public health measures have long been underestimated even though they are the most effective interventions regarding public health protection! Without proactive steps, the response will inevitably be reactive and, hence, some delays will result in some degrees of morbidity and mortality that could have been prevented. Many wealthy nations feel complacent about the distant nature of many of these outbreaks. Thus, it is worth remembering that 2018 will mark another infectious disease milestone: the terrible 1918 Spanish flu pandemic [14, 15]. Obviously, vaccines as a means of controlling harmful effects of epidemics are essential tools for humanity. Therefore, all of us, governments, population, health professionals, and others have the ethical responsibility to adopt these effective actions.

3. Vaccination: Between autonomy respect and collective common good

True solidarity begins where nothing is expected in return (Antoine de Saint-Exupéry).

The classical and ethical problem of public health—the balance between the individual autonomy respect and need for measures aimed at the common good of collective life—is quickly glimpsed in vaccination policies, especially, in mandatory vaccination policies. The ethical dimension is present in all decision-making and public policy-making processes. In the case of vaccination programs, it will be necessary to identify individual and collective risks involved to assess whether the prevalence or severity of such risks outweighs potential benefits to the mass to suspend personal freedoms [16, 17]. Indeed, the consideration of respect for autonomy, individual freedoms and the ethical perspective of utilitarianism vis-à-vis the collective common good is an essential reflection for decision-making in the face of mass vaccination. Respect for freedom protects the person's possibility to take control of his own life and live values that are significant to him. Respect for

autonomy relates to freedom respect insofar as freedom protects the personal autonomy expression. Autonomy, which can be characterized by different notions and theoretical approaches, generally symbolizes the “self-government.” In other words, according to Beauchamp & Childress, this is the ability to make consistent choices with the values and goals of each person [18].

Some people characterize compulsory vaccination as a freedom violation and, therefore, an autonomy respect violation. Thus, for those who uphold the primacy of respect for individual freedom at all costs and situations, the laws that require acts such as compulsory vaccination would be incompatible with personal liberties. Autonomy and freedom cannot be dissociated from individual responsibility regarding issues that affect our neighbor or community since studies are pointing out that individuals who abstain from vaccination are at higher risk of contracting infections and endangering their communities. The State must respect the substantial autonomy of the citizen, especially, in measures that restrict freedom of choice. Therefore, there are cases in which they may be ethically justifiable to be limited to the vaccines for infectious diseases by using utilitarian and consequentialist considerations. Utilitarianism, in the promotion of public health, provides with ethical justification to support compulsory vaccination campaigns even though such a task violates the freedom and respect for individual autonomy. Utilitarianism bases on the idea that actions are right if they produce the best consequences for the highest number of people. John Stuart Mill points to the utility as a criterion that should guide choices of moral actions and aim to the happiness of as many individuals as possible [19]. The utilitarianism, actually, has a wield significant influence on bioethics and health policy, namely to improve human health as much as possible for as long as possible [20]. Other current trends in Bioethics that have emerged in Latin America such as the Bioethics of Intervention defend as morally justifiable the priority of public policies that result in the best collective consequences. However, to justify the restriction of individual freedoms in the name of collective good, the State must include, in the discussion, the magnitude of personal and community risks, the individual’s conviction regarding his beliefs, the possible long-term consequences of decision-making, the best available scientific evidence and transparency in the decision-making process [21].

Any arbitrary decision-making by the State jeopardizes the very sustainability of vaccination policy. In summary, although most analysts believe that mandatory vaccination requirements can be ethically justified, restrictions should only be put into practice after complying with certain conditions to publicly assert the defense of that action [21]. The relevance of ethical considerations in vaccination policies has been increasingly recognized, and the attention to such issues will be essential to the continued success of global vaccination programs in the public good advance and health promotion [17].

4. The physician’s ethical duty to autoimmunity

You may choose to look the other way, but you can never say again that you did not know (William Wilberforce).

Initially, it is significant to highlight the references to the *Classic Hippocratic Oath*—*I will keep them from harm and injustice*, the *Modern Hippocratic Oath*—*I will prevent disease whenever I can, for prevention is preferable to cure*, as well as the *Corpus hippocraticum where medical art is present*,

love for humanity is also present. The Oath ends with a hope and a threat to the physicians: if he respected this ethical norm, he will maintain a good reputation among all human beings for an eternal time, but if, however, a doctor transgress such oath, it will happen the opposite. All quotations seem to imply the ethical duty that currently applies to the requirements for physicians' vaccination.

On the other hand, Thomas Percival's first Code of Medical Ethics (1803) emphasizes the physicians' duties and warns of the responsibility to society and value of their actions in the community. Such responsibility obliges the physician, necessarily, to give up the traditional individual good, "the good of patient," to the "public good," a reality of which Percival was a spokesperson [22]. Also, reinforcing the above view, it should be noted that the Code contains an article that covers the physician's duties with the public, as summarized: *As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, ... and in regard to measures for the prevention of epidemic and contagious diseases ...* Then, the original AMA Code updates also include that physicians have an ethical responsibility to take appropriate measures to prevent the spread of infectious diseases in healthcare facilities [1]. It also emphasizes that *in such situations, physicians have a further responsibility to protect their own health to ensure that they remain able to provide care.* The AMA used to accept religious and philosophical questions in the vaccine negative; however, in 2015, these reasons were withdrawn and remained only as valid the exceptions of medical order [23]. The current US code, approved in 2016, renewed its principles and reaffirmed the ethical commitment regarding public health with an expressive phrase: *A physician shall recognize a responsibility to participate in activities contributing to the improvement of the community and the betterment of public health.*

The most well-known and most influential international code of current medical practice has been the Geneva Declaration, which is adopted by the World Medical Association (WMA) [24]. In the latest modification, in 2017, in addition to the traditional oath to dedicate his life to the service of humanity, for the first time, it addresses the promotion of the physician's self-care with his health: *I will attend to my own health, well-being ...* ethical conduct pertinent to the topic of autovaccines. Therefore, there is no doubt it is an ethical imperative for the physician to be immunized against causal agents of outbreaks, epidemics and pandemics. In modern times, the practice of medicine is inconceivable without the moral responsibility that integrates the medical science itself, present not only in the professional acts performed but also in its omissions [25]. This type of responsibility moral omission is clearly present in situations in which physicians know the benefits of autoimmunization; however, by unjustified failure, they evade their ethical responsibility and do not accept being vaccinated. Thus, vaccination is a gesture of social responsibility of the utmost importance. In the context of social commitments of the physician, it is possible to say that the doctor serves, medicine is a profession and the person who does not serve is not fit to be a physician.

Therefore, the society expects physicians to make commitments to it both as social agents and technicians at the service of humanity, in the form of active solidarity. In this context, not only doctors but every health professional has a moral duty to avoid transmitting diseases preventable by vaccination to their colleagues, family members, and patients. In addition to such ethical duties that corroborate the mandatory vaccination, the most significant justification lies in the exemplary positive attitude physicians convey to their patients and colleagues,

functioning as a motivational force for others to adopt similar attitudes. How is the physician supposed to convince his patients if he does not protect himself against preventable infections? When physicians' obligatory vaccination is analyzed in light of the classic bioethical principles some findings support that attitude. Then, Beauchamps and Childress state that there are some moral rules regarding positive beneficence [18]: (a) to protect and defend other people's rights; (b) to prevent others from being harmed; (c) to eliminate conditions that will cause harm to others; (d) to help unsuitable people and (e) to rescue people who are in danger. All these moral rules are against the ethical justification that prevents medical refusal. The utilitarian benefit of mandatory vaccination is to reach the threshold percentage of vaccinated individuals required to achieve the herd immunity, according to Field and Caplan [26].

Regarding the physician's autonomy defense, it would be ethically acceptable if his attitude did not cause harm to himself or others, but the exercise of his autonomy in the present situation diminishes to the extent that the refusal may allow his illness or facilitate the infection spread to others [26]. The Supreme Court of the United States recognized for over 100 years that individuals could be subject to multiple restrictions such as submitting to a mandatory vaccine for the benefit of the "common good. At the same time, it is pointed out that defending autonomy does not only mean having freedom of action and rights but also assume responsibility for the consequences of his acts and omissions [27]. Regarding the principle of justice, the reasoning would be similar to that of autonomy because if the severity of a disease increases the public's interest in getting a universal access to a vaccine, it will also grow against it. Therefore, it raises the justice principle importance as the ethical basis for obligatoriness [26]. The ethical consideration of non-maleficence that addresses the risk of adverse drug-use events [28], should not even be discussed since vaccines benefits are so much higher than damages risks [18]. In summary, it is verified that when the seriousness of the disease is severe, contagiousness is high and the vaccine safety is unquestionable, also, there is a prevalence of interests in beneficence, utilitarianism, justice, and non-maleficence that surpass the respect for individual choice (autonomy) [26]. It allows concluding that for the public health is not significant to know what value must be respected but how they should be weighed against each other and for the community's benefit.

4.1. Compulsory vaccination of health care works

Knowing is not enough; we must apply. Willing is not enough; we must do (Goethe)

Health professionals (HCWs) are at increased risk of acquiring vaccine-preventable diseases, and then, the purpose is to protect them from occupational exposure and prevent the spread of infections to susceptible patients. According to several medical institutions, the HCWs should be vaccinated, at least, against influenza (annual), measles, mumps, diphtheria, varicella and pertussis, and also, those potentially at risk of contact with blood and secretions should receive the vaccine against Hepatitis B [29]. Despite these recommendations, studies continue to demonstrate that the goals are far from being achieved and many of them refuse vaccination. In the United States, the vaccination rates of these professionals varied from 13 to 83% [30]. They were less than 50% between 2003 and 2008 [31] and only 61.9% in the 2009–2010 pandemic [32]. Currently, as a result of the adoption of US public policies, more than 200 Health Institutions have turned vaccination into mandatory, and state law-

makers are beginning to enact laws requiring the HCWs vaccination. They are backed by the Supreme Court that gave the states the power to impose obligatoriness. Some studies in several European countries have revealed absurdly low rates of vaccination of health professionals of 6.4, 15, 25 and 26.3% [33] and even after nine consecutive years, the highest rate was 56% [34]. Compulsory vaccination in Europe is adopted by a few countries, and even then, for very limited indications. After three decades of official recommendations against influenza, the vaccination rates remained below 30% in Europe (**Table 1**).

Therefore, it is time to consider the mandatory vaccination policies for these professionals [35, 36]. This recommendation was approved by 63% [37] and by more than 98% of them [36] and the physicians accepted it better than nurses and other professionals [37]. Similarly, reduced numbers of vaccination of such professionals were reported in China and Australia, with less than 5% [38] and 22% [39] of influenza vaccinated professionals, respectively. There are several reasons explaining why these professionals avoid vaccination: (a) do not want vaccination; (b) the vaccine is unnecessary; (c) the vaccine is not effective; (d) it may cause adverse events; (e) it may cause influenza; (f) the risk of contracting the disease is low; (g) inadequate time and place of vaccination and (h) fear or aversion to needles [32]. Then, some motivational factors were identified such as the influence of other employees, managers' performance, incentives for vaccination and vaccine accessibility [33]. Several strategies have been developed in some countries to encourage voluntary influenza vaccination in health professionals (promotional and educational campaigns, reports, immunization follow-up, and recommendations), but none with a significant impact on the overall coverage rate. However, vaccination offer in the workplace has produced a more efficient result than other isolated measures. This comes to the observation that inadequate vaccine time and location were considered as a significant barrier to influenza vaccination, and it was one of the reasons for non-vaccination as reported by up to 59% of health workers [32]. There has been a tendency to recommend and accept more stringent measures such as compulsory vaccination as a result of these alarming numbers for human health [30, 31, 34, 40–44]. It should be added that ethical responsibility does not belong only to health professionals but also to each health institution, so that obligation constitutes a new care standard [45]. Some observational studies concluded that mandatory vaccination against influenza increased the vaccination rates to levels around 94% [43].

At the beginning of the nineteenth century, persuasion was considered to be more significant than mandatory. Today, the severity situation demands more extreme and protective measures. Regarding the physicians' refusal for vaccination, more radical measures such as compulsory vaccination and loss of employment have been implemented in several developed countries with the support of the Legal Power, medical entities, and bioethicists [46]. Caplan [47], an American bioethicist, when defending the mandatory vaccination against influenza from health professionals, contrary to the right of autonomy, asks: Rights? The right to infect your patient and the right to cause harm to the people involved in health care? The right to ignore all safety evidence and vaccine efficacy? Or the right to spread unreasonable fear to the public about better protection for babies, pregnant women, the elderly, and vulnerable people against the flu? These rights? It is time to put the patient's priority interest and recognize the professional duty by making vaccination of health professionals against influenza mandatory [41]. The main argument in favor of compulsory vaccination regards codes of

Author	Study year	HCW/observation	Country	Vaccination rate
Weingarten [80]	1986–1987	Nurses. Housestaff	United States	3.5%
Cui [81]	1996–1998	Staff of 43 nursing homes	Hawaii	38%
Haviari [82]	1990–2014	Doctors, nurses, midwives of primary care, hospitals, tertiary care (>90,000 HCW in 62 studies). Higher in USA and lower in Europe	25 countries	<5% in India to 82% in USA 40 studies with <50% vaccinated
Babcock [49]	1997–2006 2008	25,980 active employees. In 2008, vaccination was a condition of employment for all	United States	1997–2006: ~35–41% 2008: 98.4%
Russel [83]	1998	Staff of 136 nursing homes in Alberta	Canada	29.9%
Murray [84]	2000	269 staff of teaching hospital	Australia	48%
O'Rorke [85]	2001	228 staff of acute-care hospital	Ireland	17.5%
Canning [86]	2003	Acute-care hospitals, Liverpool	United Kingdom	7.6%
Stewart [32]	2004–2010	HCW 2009–2010 (H1N1 pandemic)	United States	2004–2005: 35.5% 2005–2006: 41.8% 2006–2007: 44.4% 2007–2008: 49.0% 2009–2010: 61.9%
Semaille [87]	2006	688 general practitioners	France	67.0%
Quián [88]	2006–2008	Physicians, nurses, and others. 2006: 286 HCW; 2007:? 2008: 300 HCW (after information and promotion actions vaccine)	Uruguay	2006: 24% 2007: 31% 2008: 55.3%
Seale [39]	2007	Hospitals allied health staff and ancillary staff, doctors, nurses	Australia	22%
European Centre [89]	2007–2008 2014–2015	The highest vaccination coverage rates were in UK (except Northern Ireland), Hungary and Romania The vaccination of HCWs is voluntary	Europe (17 countries)	2007–2008: 13.4–89.4% 2014–2015: 5–54.9%
Rehmani [90]	2008–2009	502 hospital health care workers	Saudi Arabia	34.4%
Silveira [91]	2009	64 pediatric residents of tertiary general hospital. Federal University of São Paulo	Brazil	3.1%
Vieira [93]	2009–2011	265 nurses, technical nurses, auxiliary nursing of a university hospital to get vaccinated after adequate operational/educational strategies	Brazil	2009: 49.8% 2010: 92.4% 2011: 95.4%
Giannattasio [92]	2009 (H1N1)–2012	206 Physicians, residents, nurses, paramedics) of three Academic Departments (Infectious Diseases, Pediatrics, Gynecology/Obstetrics) 138 (67%) never been vaccinated	Italy	2009: 33.5% 2010: 15.0% 2011: 15.5% 2012: 7.8%

Author	Study year	HCW/observation	Country	Vaccination rate
Domínguez [94]	2012	1749 primary HCW (family physicians, pediatricians, nurses)	Spain	50.7%
Alicino [34]	2013–2014	Teaching hospital in Genoa, tertiary adult acute-care reference center (1300 bed). Despite almost a decade of efforts, the vaccination coverage rates was very low	Italy	Physicians: 30% Nurses: 11% Other clinical personnel: 9%
Song [38]	2013–2014	All HCWs providing direct patient care at 10 healthcare institutions.	China	5.0%
Jorgensen [95]	2014–2015	All member states, except Denmark, with an influenza immunization policy had national recommendations for vaccination of HCW against influenza in 2014/2015. The survey was by email for the national immunization programme under the Ministries of Health	26 countries (Europe Region)	From 2.6% to 99.5%; median 29.5%. The majority of countries reported rates <40%
Black [96]	2014–2015 2015–2016	Health Care Personnel: 2014–2015: 1.914 2015–2016: 2.258	United States	77.3% 79.0%
Public Health England [97]	2016–17 2017–18	594,700 HCW 641,600 HCW	England	2016–2017: 61.8% 2017–2018: 63.9%

*Adapted from Weber and Rutala [29].

Table 1. Flu vaccine coverage in health care works (HCW) reported in the literature*.

ethics of physicians, nurses, nursing assistants, social workers, pharmacists and other health professionals who declare that patients' interests should prevail over professionals' ojnnes [47]. The first ethical principle is not causing harm to others and, therefore, professionals must be vaccinated compulsorily since maleficence, whether intentional or not, is unacceptable [48]. Secondly, they must protect defenseless and vulnerable patients. In conclusion, mandatory vaccination against influenza should prevail over personal choices and, even more importantly, it is ethically significant that physicians give good examples when vaccinating as they can influence their patients' vaccination [47]. An increasing number of US hospitals require health professionals to vaccinate against influenza and other infectious diseases to protect their patients [49]. Therefore, obligatoriness should be preceded by a comprehensive educational program for current professionals, and new HCW understand that vaccination is an indispensable condition of employment [31, 46]. Vaccination is considered as a privilege and not an obligation, and those who do not wish to have the vaccine should consider the consequences of this act and know how to bear it, remembering that preserving public welfare and reducing diseases are important values [50]. Mandatory influenza vaccination for all healthcare works is ethical, just, and necessary to improve patient's safety and it is a crucial step in efforts to reduce healthcare associated with influenza infections [51]. When a person starts working at a healthcare institution as a professional, he has certain obligations and one of them is to take precautions to protect patients against infections. Only in the United States,

from 3000 to 49,000 deaths are attributed to influenza each year, and influenza vaccination is a significant method for reducing flu deaths [52].

The leading US medical organizations (Immunization Action Coalition) signed a document entitled *First Do No Harm: Mandatory Influenza Vaccination Policies for Healthcare Personnel, Help Protect Patients* [53]. This document was signed by medical leader organizations and additional professions groups claim that mandatory influenza vaccination for all healthcare personnel is imperative! Refer to the position statements of these medical organizations to guide and implementing a mandatory influenza vaccination policy at healthcare institution or medical setting. Then, the following conclusions can be drawn from these data: (1) the arguments in favor of compulsory vaccination against influenza from health workers to patients' safety are ethically, scientifically and financially attractive; (2) the misconceptions and lack of knowledge about influenza vaccines are persistent barriers to a better coverage among health professionals; (3) education alone has not been sufficient and (4) successful programs require the use of multiple strategies including training, incentives, accountability and a strong commitment at all levels [54].

4.2. The pursuit of altruistic attitude of doctors

Advice is judged by results, not by intentions (Cicero).

According to Comte (1798–1857), altruism is the tendency or inclination of an instinctive nature that incites the human being to concern with others, and it is one of the significant reference points for the choice of values in bioethical deliberation. The book *Bioethics* refers that the technical and biological term for people who take care of others, without thinking about themselves, is altruism and there is a moral sense allowing humans to do that. It is a metaphor—it does not necessarily mean the altruism that one refers when speaking of a right person [55]. Altruist people can assess different or changing situations and it is an act performed in the best interest of others and also for them. Therefore, human beings need the capacity to respond to such changes, especially those developed by other persons. The evolutionary theory offers the altruism origin explanation and other moral sentiments. Thus, social animals such as humans require the ability to help each other and, at the same time, reduce conflicts within the group. Then, persons that take their obligations with others seriously are more stable, work together in harmony and such patterns of behavior result from biological evolution [55]. On the other hand, it is understood that morality is an important dimension of ethics and to do what I must to others is part of living well and a characteristic of this century is the increasing recognition of each one's moral obligations to others [56]. According Appiah, honor is one important cause of the moral progress, in guiding us to a better future.

Selfishness is an opposed concept in which the unlimited love that a person feels for himself leads to serve his interests exclusively. It is a conduct characterized as narcissistic ethics [57]. The issue on “how to be good” differs from “how to do it right” since the good nature is the obligation to do all the good we can, considering all things and making the world a better place because being good is essential for ethics. These individual obligations and responsibilities constitute the moral arguments of our human condition to do good [58]. The central point of compulsory vaccination can be supported by people's moral responsibility, in the

understanding that self-vaccination of health professionals and other members of the community will also help in the protection of others. It is possible to make an analogy with organs donation to exemplify the situation since Singer [59] calls such action as an altruistic act that portrays the human moral obligation to others, especially the less fortunate. This act can be considered an insignificant sacrifice to save or protect another human life [59] and, by analogy, the health professionals' self-vaccination can also be understood as an altruistic action. Altruism can be defined in many ways, and a useful distinction for our purposes is between the behavioral and motivational definitions of the term. Motivational conceptions of altruism are identified with the medical attitude to self-vaccination because they are internal psychological states that produce altruistic behaviors and actions carried out by a person who wishes to contribute to the well-being of another person.

Thus, the behavioral definition of altruism, by contrast, focuses exclusively on the costs and benefits of action for the person in question. Many defenders of altruistic action consider altruism as a significant virtue with a combination of reasons in which there is a genuine desire to help others and a desire to improve their quality of life. It is precisely the altruistic sense that one wishes to mobilize and stimulate for the physicians' autovaccination. Yet, by exploring altruism a little more, there is a distinction between restricted and expanded altruism. The first includes only doing good to the closest ones like family and friends, while the second also includes, besides them, strange people. Therefore, self-vaccination medical altruism clearly identifies itself with the expanded form of doing good for others, benefiting physicians, family, and patients. Then, by analogy with the example of organs donation, it is expected that physicians' attitudes towards autovaccination will also expand in these professionals since effective altruism, which has Singer as one of its creators, is a breakthrough in people's ethical behavior. The effective altruism focuses on the attainment of goals, that is, on the vision of consequentialist ethics and as an ethical proposal for the contemporary world [60]. Here, it is reiterated that autovaccination is not an extreme procedure but the attitude is also a good for others, and it is done autonomously for the benefit of strangers. It is also possible to believe that parents who hesitate to vaccinate their children may be motivated by the altruistic action of their doctors and in the exercise of a selfless attitude they will be protecting their families. Effective altruistic actions performed by a large number of people can demonstrate an unimaginable power capable of contributing expressively to the common good ("The Most Good I Can Do"). However, the altruistic motivation is still an open field for investigations as it has not yet been considered in epidemiological studies on vaccination decisions or vaccination projects [61]. Thus, a higher dissemination of information combined with more precise guidelines on altruistic actions (and potentially specific of the vaccine) from health professionals and the general population may leverage towards the objectives of the vaccination policy. Therefore, the same situation regarding organs donation in which attitudes are changing and donations are increasing, altruistic behaviors are identified in large part of the population [59]. When the physician is committed to his work beyond the financial part, he is practicing altruistic attitudes. They are considered ethical virtues that imply a personal commitment and a consistent motivation with the essence of the medical profession, which means they will be at people's service. Of course, wealthy nations will need to decide if they are going to fund healthcare beyond their borders because by now, they will be familiar with the self-interested altruism argument [14]. In conclusion, the best assessment is that the evolutionary biology has

brought many new insights to the thinking about human life, including human moral nature. In the present situation of vaccination, it is worth believing that the act of taking vaccines by the healthcare workers means helping without expecting any rewards.

5. The ethical duty of physicians to vaccinate children

Parents can't do everything, but when you have the power to prevent something from happening, you do it! (Cheryl Lieck, a mother)

Physicians should take advantage of the meetings with patients to educate them on how to minimize health risks and, thereby, fulfill the obligations to promote the patient's well-being and contribute to public health improvement [62]. Ethics is not individual. It is always relational whether in group or collective; therefore, it is possible to affirm that all thinking beings have ethics. Thus, if a person acts for his benefit and causes harm or damage to other people, it can be said that is a wrong attitude, narcissistic ethics or, in other words, an ethics whose value and the principle of solidarity and fraternity are not present [57]. It is the real situation regarding vaccination discussion and the conduct of those who refuse to vaccinate. It is called "Convenience Ethics," which contrasts with the "Ethics of Dignified Collective Life" or "Capital Ethics," which is a life protection ethics of the collectivity and one of the most robust ethical values of our human condition to live in a community [57]. Therefore, aiming at the search for the common good it is possible to justify the need to call the attention to such physicians' ethical commitment, which is anchored in the worldwide concern of reducing the vaccination rates of children. Every single study, on a worldwide scale, highlights that health professionals, especially physicians, are considered by parents as a primary and reliable source of information on childhood vaccination [63–66], and pediatricians and family doctors are more capable of convincing parents to make a decision. It is worth saying that it is the physicians' ethical duty to fulfill such a task by exploring their level of knowledge about vaccines, their underlying values and beliefs about immunization [67], highlighting, above all, the social reach of mass vaccination and possible consequences for other children if all parents refuse to vaccinate them.

In the face of a possible conflict and from the ethical point of view, the physician should deliberate with parents to show individual and community benefits such as herd immunity, so that parents can understand the risk that would arise if all mothers had the same negative behavior [68]. Thus, the Spanish bioethicists point out that after the information in the deliberation process, the next step is persuasion as a clinical and ethical resource that cannot be confused with manipulation or coercion because they are unacceptable. According to the circumstances and in the face of common good and autonomy conflict, it is quite ethical to consider that those responsible are ill-informed and it is not morally admissible or respectable to exercise autonomy based on error and irrationality, especially, when such a conduct entails a risk for other people's lives [68]. In other words, physicians should try to persuade resistant parents and remind them that vaccine is not a medicine that only benefits those who use it but also protects the individual against certain diseases, including his family members and community. After these attempts, if the refusal to vaccinate their children persists, physicians may try the

following alternatives. (a) Accept the rejection and merely conclude the consultation with the phrase “it is your choice;” (b) adopt other measures of social pressure such as the requirement of vaccination by schools and kindergartens, and (c) abandon the patient and refuse to attend that family. Which of these measures would be the most ethically appropriate? The first one, in which the professional considers himself defeated and leaves the decision to the parents knowing they will not vaccinate their children? The second form of referral, even though does not depend on the professional since he must follow the institutions’ requirements and legal norms? And the third option, no longer to attend the family? The latter is going to be treated in a specific topic. It is possible to notice that numerous measures adopted in several countries use different strategies to overcome the declared war against the undecided people.

One of them, considered by some as a stimulating measure for vaccination, is the implementation of compensation programs for damages by vaccines. Such a program has been increasingly used as a component of vaccination programs for more than 50 years. Recently, a restrictive measure was adopted by the American Academy of Pediatrics recommending health institutions to eliminate non-medical exemptions in refusing vaccination because in the past 20 years the number of non-medical exemptions for school students, in the United States, has nearly doubled for philosophical or religious reasons, especially the first one. Then, coercive actions can be taken by the state, which has the responsibility to protect its citizens.

Thus, the adoption of restrictive measures of freedom such as isolation and quarantine can be ethical justifications [69]. Also, the European Convention on Human Rights, among the exceptions provided, allows the legal detention of persons to prevent the spread of infectious diseases. Several European countries have adopted punitive measures penalizing those who refuse to vaccinate their children. Italy is the most recent example. The country’s Supreme Court of Justice has made compulsory the use of vaccines for children and adolescents, allowing the executive power to impose fines on these parents and prevent their children from attending public schools. Recently, 27 French medical entities have launched a public manifesto supporting compulsory vaccination of children with the condition that the phase is transient until population confidence and health professionals are restored, and then, it should be voluntary again [70]. These measures have been implemented with the focus on parental responsibility and anchored in the principle of justice because it is intended that they authorize their children’s vaccination with the perspective of community protection [71]. Finally, confidence-building strategies in health institutions are vital to increasing public acceptance as well as disseminating information on vaccine safety and efficacy.

5.1. The refusal of physicians to attend parents who refuse to vaccinate their children

Hell isn’t merely paved with good intentions, it is walled and roofed with them (Aldous Huxley)

As a result of persistent refusals by parents to vaccinate their children, even after physicians’ recommendations, a new challenge arises among professionals, especially for pediatricians, such as to avoid attending children in these situations. The subject is worrying. In the United States, 25% of pediatricians would refrain, at some point, from attending families under these conditions, while in Europe 9% of pediatricians supported such a decision and 27% of them

would do so if there is a refusal for all vaccines [72]. This practice more than doubled between 2006 and 2013 among the US pediatricians [73], despite recommendations to the contrary from the CDC and AAP. The following arguments are presented to justify that medical attitude. (a) It could configure a professional unethical act; (b) represents an insurmountable difference of values between parents and professionals; (c) families with unvaccinated children constitute a danger to the clinic staff and other patients; (d) their counseling requires a lot of time from the physician and (e) they do not want to be responsible for vaccine-preventable infectious diseases of their little patients [74]. Under such circumstances, how should the physicians get prepared to fight epidemics and how to act on their obligations, responsibilities, rights, and values? [75]. Thus, is the physicians' reaction ethically justifiable? When analyzed in detail, it is worth noting that a renunciation behavior is not consistent with physicians' ethical obligations and none of these reasons are sufficient to support such a decision [72]. The AMA does not recommend this procedure because it is unethical to abandon the patients. The physician has the ethical commitment of beneficence and non-maleficence and this decision does not meet the best interest of the child (charity) since persisting the non-vaccination can make the physician responsible for possible harm (not maleficence) [73]. Remember that the most reliable source of vaccine information for parents is the doctor himself [76, 77].

It is also difficult to consider the physicians' attitude as a conscience objection of parents' immoral act because against that decision arises the principles of public health in which children could be a source of infection for others, in case they acquire a disease preventable by the vaccine [78]. Therefore, it is necessary to strengthen the relationship with parents, especially the families with low educational or socioeconomic levels [79]. As a guideline for the clinician in these pediatric care situations, an alternative could only occur in the following cases. (a) To exhaust all means of education with the family; (b) the family is informed of the physician's decision; (c) the geographic region is not in need of pediatric doctors and (d) he must continue to promote health care until the family finds another physician who agrees to provide care (usually 30 days) [78]. In extreme cases, some families will refuse vaccination regardless the method of communication used. In that case, the physician's reluctance may be an option accepted by the American Academy of Pediatrics since another physician agrees with the conditions and continues with medical care [67].

6. Final considerations

Sin ética no hay futuro posible, ni a nivel local ni a nivel global (Martinet de la Cerdanya)

Currently, it is acceptable to say that without ethics there will be no possible future in the world, and then, everyone must be aware of his duties and responsibilities to himself and the humanity's future. Therefore, it is essential that everyone helps each other since we live in a community, and it is also necessary to have a profound reflection regarding our behavior, attitudes, and acts that may help or cause harm to others. Such scenario of concern for public health fits very well with the physicians' vaccination issue and children of our planet in understanding their social role of protecting as many people as possible against the reemergence of old infections. Thus, it is the physicians' ethical and moral responsibility to act favorably in

gaining parental trust, and then, the best way to do that is to give their example by being vaccinated and explain that to the patients because they influence parents' decisions to authorize children's vaccinations. Moreover, the professionals need to have sufficient knowledge about proposed vaccination regimens, efficacy and possible adverse events that are essential for an adequate and honest orientation to their patients.

Then, abandoning the families whose parents resist authorizing the vaccination of their children is not an ethical conduct. It is worth emphasizing that one way of increasing the physicians' importance is to unleash their altruistic spirit, and then, as a fundamental bioethical reference, they can contribute in a striking way to the objectives' achievement. Therefore, the binomial of physicians' vaccination and childhood vaccines promotion are ethical duties and sisterly attitudes, and they are indispensable to make the ethical side of this war win in the name of human welfare and with decisive physicians' participation.

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