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Commentary

Vaccination of healthcare personnel in the COVID-19 era: A call for actions

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From the beginning of the coronavirus disease 2019 (COVID-19) pandemic, healthcare personnel (HCP) have been disproportionately affected. According to the statement of the Director General of the World Health Organization on May 24, 2021, the death toll among HCP hits at least 115,000 cases [1]. That said, HCP have been a high-priority group for COVID-19 vaccination. Aside from their protection, their prioritization for vaccination is justified to protect patients, but also healthcare services from outbreaks, HCP absenteeism, and presenteeism [2]. Yet, suboptimal vaccination rates were recorded among HCP globally and vaccine hesitancy emerged as a key public health issue the past months [3]. In response to this, some European countries (e.g., Italy, France, and Greece) showed fast reflexes and moved to mandatory vaccination policies for HCP. In brief, HCP who decline COVID-19 vaccination are transferred to duties that do not risk spreading the virus or are under work suspension and salary refusal [4,5]. It is almost certain that several countries will follow in the near future. The recent approval of the first COVID-19 vaccine for individuals 16 years of age and older by the United States Food and Drug Administration is expected to add additional confidence on the vaccine and to lift regulatory barriers for vaccine mandates for HCP in the United States and elsewhere [6]. Herein, the necessity to strengthen vaccinations for HCP in a holistic approach is discussed, which is even more imperative as vaccination rates drop globally in light of the efforts countries pay to control the ongoing COVID-19 pandemic [7].

HCP are at increased risk for exposure to and acquisition of several vaccine-preventable diseases (VPDs) [2]. At the same time, HCP are often traced as sources of transmission of VPDs to patients, including patients that are not eligible for vaccination and patients that do not elicit sufficient immune responses after vaccination [2,8]. Such patients often rely on the indirect protection built through vaccinating persons around them [2,8]. Therefore, both host immunity and herd immunity apply for HCP vaccinations. Nonetheless, herd immunity relies on high and sustainable vaccine uptake rates.

Europe and many countries globally faced devastating measles epidemics the past years. In this context, many healthcare-associated measles outbreaks occurred and thousands of unvaccinated or incompletely vaccinated HCP were affected [9]. The drop of global vaccination coverage the past year, from 86% to 83%, which is the lower since 2009, due to disruption of vaccination services is of concern [7]. It is likely that epidemics of VPDs will occur in the near future.

In Europe mandatory vaccination policies for HCP are in place for very specific VPDs and healthcare settings and are generally flexible, while most vaccinations are administered to HCP on a voluntary basis [10]. Voluntary vaccinations have largely failed to achieve high and sustainable vaccination rates [2,11]. For example, following the implementation of a multi-faced approach over nine influenza seasons in Ireland, influenza vaccination rates of hospital-based HCP rose from 18.1% in 2011–2012 to 58.9% in 2019–2020 [12]. Similarly, progress has been made in Greece following the implementation of a nation-wide action plan which addressed cognitive, organizational, and logistic issues and promoted influenza vaccination campaigns at each healthcare facility [13]. Influenza vaccination rates increased from 10.9% to 44.6% in hospitals and from 24.3% to 67.6% in primary healthcare the past six years (Fig. 1) [13]. Even with combination strategies, influenza vaccination rates very rarely exceed 60% [2]. Explicitly, voluntary vaccination policies are demanding in terms of human and financial resources to communicate and convince each employee to get vaccinated every year. In addition, HCP often experience external pressure to get vaccinated from their managers and colleagues, rendering “a mandatory vaccination program better than a voluntary program with wide-spread coercion” [14]. Similarly, significant immunity gaps among HCP are recorded for several VPDs: up to 17% for measles, 25% for mumps, 18.6% for rubella, 16.7% for varicella, 68.8% for pertussis, 35% for hepatitis B, and 64.3% for tetanus and diphtheria [2].

Evidence shows no single intervention other than mandatory vaccination policies can succeed consistently high (>90%) influenza vaccination rates among HCP in short term [15,16]. Beyond influenza vaccination, the expansion of mandatory vaccination policies against measles-mumps-rubella (MMR), varicella, and hepatitis B

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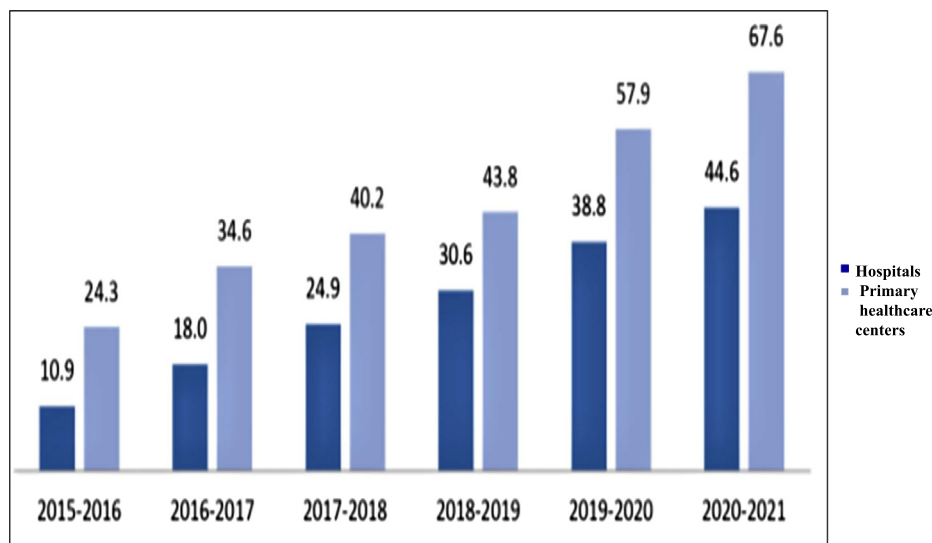


Fig. 1. Influenza vaccination rates (%) among HCP in Greece, 2015–2021.

in a large medical center over three years was associated with significant increase of vaccination rates up to 99% [17].

The magnitude and the overall impact of VPDs within healthcare facilities vary by disease, season, vaccination coverage of employees, and type of patients. Nonetheless, the principle of protection of patients over the principle of autonomy of HCP to decline vaccinations should constitute the basis of modern healthcare systems, since many VPDs can prove detrimental for specific patients (e.g. pertussis in young infants, influenza in pregnant women, and chickenpox in immunocompromised patients). Furthermore, there is no evidence to support the differentiation and fragmentation of vaccination policies for HCP between countries and healthcare facilities, regarding indications and implementation frame (voluntary or mandatory vaccinations). In contrast, the ongoing COVID-19 pandemic should be considered as an opportunity to strengthen vaccinations of HCP and to adopt sound vaccination policies for VPDs that cause significant morbidity and mortality. In my opinion, mandatory policies should be implemented against COVID-19, influenza, MMR, varicella, and hepatitis B. Move to mandatory vaccination policies will require political commitment, support by scientific societies, and in several countries the adoption of appropriate regulatory frame. In several countries there are no national vaccination registries while in others HCP have to pay for vaccinations [10]. Vaccines should be administered on-site and free-of-charge, and registries are needed to guide interventions. Finally, comprehensive vaccination programs for HCP should also be regarded as integral part of preparedness and response plans for epidemics in the near future. Healthcare facilities cannot afford any more healthcare-associated outbreaks and fatalities from diseases, for which safe and effective vaccines exist.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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