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## EPIDEMIOLOGICAL EFFECTIVENESS COVID-19 VACCINES, UKRAINE, 2021-2022

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**Introduction:** Vaccination is one of the most effective means of preventing the occurrence of cases of the coronavirus disease (COVID-19). Worldwide, as of Dec 27, 2022, 13.15 billion doses of COVID-19 vaccines have been administered. In Ukraine, since the beginning of the vaccination campaign, as of Dec 22, 2022, 15,403,937 people received two doses of the COVID-19 vaccine, 16,222,706 people received one dose, and 194,503 people received a second booster dose.

**The aim:** To study and analyze indicators of the epidemiological effectiveness of the vaccination against COVID-19 in Ukraine from Oct 04, 2021 to Dec 22, 2022.

**Materials and methods:** Epidemiological and statistical research methods were used in the work. The data was obtained from the websites of: State institution "Public Health Center of the Ministry of Health of Ukraine", Vaccination against COVID-19, Ministry of Health of Ukraine, Our World in Data. Calculations were made in the Microsoft Office Excel computer program.

**Results:** COVID-19 vaccines used in Ukraine are AstraZeneca (Covishield and AstraZeneca-SKBio), Pfizer-BioNTech (Comirnaty), Sinovac Biotech (CoronaVac), Spikevax/ Moderna. The mass use of COVID-19 vaccines in the world began only in the second half of 2020, in Ukraine - from June 2021. As of Dec 22, 2022, 5,357,941 cases of COVID-19 were detected, including 509,751 people who were vaccinated with at least the 1st dose of the vaccine against COVID-19. The vaccination efficiency rate of the total population was 70.6%. The weekly incidence rate of COVID-19 among the vaccinated total population ranged from 0.3 per 100,000 population to 124.9 per 100,000 population, and the average value was 19.3 per 100,000 population. The weekly rate of incidence of COVID-19 among the unvaccinated aggregate ranged from 2.4 per 100,000 population to 601.3 per 100,000 population, and the average value was 111.2 per 100,000 population. That is, the morbidity rate among vaccinated cases of COVID-19 was on average 5 times lower than among unvaccinated ones, which generally indicates a moderate effectiveness of vaccinations against the COVID-19 in Ukraine for the period from Oct 04, 2021 to Dec 22, 2022. The decrease in vaccination efficiency rate can most likely be explained by the change of the Delta-variant of the pathogen to the Omicron variant. Accordingly, during this period there was a trend towards a moderate increase in the incidence of both vaccinated and unvaccinated cases of COVID-19.

**Conclusions:** The results of the study of the effectiveness of vaccinations against COVID-19 of the total population in Ukraine indicate that it is generally moderately effective.

**KEY WORDS:** public health, COVID-19 vaccines, mass vaccination, immunization