

The impact of anti-epidemic measures against coronavirus disease 2019 (COVID-19) on the seasonal influenza epidemic

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To the Editor: A new type of coronavirus—severe acute respiratory syndrome coronavirus 2 causing coronavirus disease 2019 (COVID-19) emerged in 2019.^[1] On March 11, 2020, World Health Organization (WHO) Director-General declared that the outbreak can be characterized as a pandemic.^[2] According to the WHO,^[3] on March 18, 2020, the number of laboratory-confirmed cases of COVID-19 was over 200 thousands worldwide. In some countries, unprecedented anti-epidemic measures have been carried out to stop the spread of infection.

Both influenza viruses and coronaviruses are respiratory pathogens with similar routes of infection and related pathogenesis.^[4] As the emergence of COVID-19 coincides in time with epidemics of seasonal influenza in the Northern hemisphere, it is possible to assess efforts of health services for controlling coronavirus using the dynamics of influenza epidemics in certain countries.

The WHO weekly updates data on the confirmed influenza cases in each country (FluNet-CHARTS). This study demonstrates data analysis of several regions of the Northern hemisphere.

Specifically, in China, the highest rate of the influenza epidemic was registered in the second week of 2020 (more than 7000 cases per week). On January 25, that is, the fourth week of 2020, anti-epidemic measures were tightened because of COVID-19. Up to the seventh week in China with a population of 1.4 billion people, influenza rate decreased as low as indices typical of the inter-epidemic period (less than 400 per week) and to the eighth week lower than the background level (less than 20 events per week).^[5] Thus, China has coped with the COVID-19 pandemic simultaneously with the seasonal influenza epidemic.

In South-West Europe, the influenza epidemic peak was observed in the fifth week of 2020 with 8500 detected cases

per week. To the eleventh week, only 20 confirmed cases were registered, that is, 0.2% as compared to the value at epidemic peak.^[5]

In North America, the influenza epidemic peak was in the fifth week of 2020 with 30,000 detected events. To the eleventh week, 2500 confirmed influenza cases were registered, that is, 8.3% of the values at epidemic peak.^[5]

WHO data^[5] demonstrate the impact of anti-epidemic measures on the influenza epidemic of 2020. However, those measures differently affected COVID-19 in the three aforementioned regions. The epidemiological response in China stopped the COVID-19 epidemic spreading, while in Italy and the USA the result is unsatisfactory. This could be explained by belated containment measures in South-West Europe and North America.

It is believed that in future new viruses pathogenic for humans will emerge due to the presence of an unlimited natural reservoir of animal viruses. One of the most dangerous among them includes highly pathogenic influenza viruses. There is a likelihood that pandemic similar to the 1918 pandemic influenza^[6] will emerge, which determines medical services in different countries to improve their working procedures. As WHO charts with dynamics of seasonal influenza epidemic show, in the countries affected by COVID-19, anti-epidemic measures can stop the seasonal influenza epidemic and possibly even pandemic caused by highly pathogenic influenza viruses provided that those measures are timely efforts of all or at least of the majority of countries worldwide.

From the authors' perspective, a concerted strategy should be elaborated for performing public health measures at the emergence of new respiratory viruses pathogenic for humans. Readiness programs for influenza pandemics developed in many countries can be used as the basis. Furthermore, since 1952 the Global Influenza Surveillance

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and Response System has been successfully functioning. It combines more than 150 centers worldwide, whose laboratories have enough capacities to control emerging respiratory viruses.

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Conflicts of interest

None.

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