Defusing COVID-19: Lessons Learned from a Century of Pandemics

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Abstract: Amidst the COVID-19 global pandemic of 2020, identifying and applying lessons learned from previous influenza and coronavirus pandemics may offer important insight into its interruption. Herein, we conducted a review of the literature of the influenza pandemics of the 20th century; and of the coronavirus and influenza pandemics of the 21st century. Influenza and coronavirus pandemics are zoonoses that spread rapidly in consistent seasonal patterns during an initial wave of infection and subsequent waves of spread. For all of their differences in the state of available medical technologies, global population changes, and social and geopolitical factors surrounding each pandemic, there are remarkable similarities among them. While vaccination of high-risk groups is advocated as an instrumental mode of interrupting pandemics, non-pharmacological interventions including avoidance of mass gatherings, school closings, case isolation, contact tracing, and the implementation of infection prevention strategies in healthcare settings represent the cornerstone to halting transmission. In conjunction with lessons learned from previous pandemics, the public health response to the COVID-19 pandemic constitutes the basis for delineating best practices to confront future pandemics.

Keywords: pandemic; COVID-19; coronavirus; SARS-CoV-1; SARS-CoV-2; MERS; SARS; influenza