

# The Path of Holding Smokeless Large-scale Sports Events under the Background of Public Health Emergency of International Concern

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**Objectives:** As the Coronavirus disease 2019 (COVID-19) continues to spread and smokeless sports influences sports, large-scale sporting events fascinate international and national host-country athletes and millions of travelers, which has a profound impact on large-scale sports events. Based on the methods of literature, case analysis and induction, this paper analyzes the experience of holding smokeless large-scale sports events in the context of PHEIC through the epidemic background, the measures taken by countries and the results of holding large-scale sports events. The result shows that countries took measures to strengthen surveillance of infectious diseases and be fully prepared for any incident during PHEIC. Though it may need added resources and support, these endeavors were beneficial and formed part of the experience of major events. The successful experience of holding smokeless large-scale sports events in the context of PHEIC should not dissipate with the epidemic abating, but should actively upgrade the concept of crisis management and explore the development path of smoke-free sports events. The path includes the following: International cooperation is the key to the success of large-scale sports events and potential intervention is an effective means to prevent the spread of epidemics. Risk communication provides effective guidance for the evolution of control and prevention of epidemics. The use of digital technology to monitor the outbreak of diseases in sports activities brings new opportunities for the public health prevention and treatment system, aiming to provide support for today's sports events, and then promote the construction of emergency prevention and control systems for large-scale sports events under the trend of globalization and normalization of the epidemic situation.

**Key words:** major sports events; COVID-19; smokeless sports; development path

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Sports and medical care are like two sides of the same coin, corresponding to human health and

disease respectively, and sometimes one side grows and the other declines. Since the 1980s, the World Health Organization, the International Olympic Committee and individual sports organizations have devoted themselves to the smoke-free environment movement in order to promote the development of world smoke-free sports and further improve social awareness and education of smoke-free environment.<sup>1</sup> The Tokyo Organizing Committee issued that the Tokyo Olympic Games was postponed to 2021. The Tokyo Olympics became the first postponement in modern Olympic history, and the reason for the postponement is known to be related to the global outbreak of COVID-19. When a virus threatens the health of all mankind, it does not discriminate between culture, race, wealth, or nationality. If human beings want to overcome it, they need to mobilize the rules and wisdom of the whole society and improve themselves unremittingly – physical exercise is recognized by human society to keep healthy behavior. While the Olympic Games is the most influential sports event in the world, its most direct meaning is to encourage people to keep playing sports.

Due to a large number of participants in large-scale sports events and little warning of a virus outbreaks, participants and spectators from all over the world are at risk of infection or transmission of the virus.<sup>2</sup> Respiratory infection and gastrointestinal diseases have always been the main concern of international sports events. These outbreaks, such as influenza in Yancheng Winter Olympic Games, measles in Vancouver Winter Olympic Games, and norovirus gastroenteritis in FIFA World Cup. Recently, an outbreak of the Norwalk virus was confirmed at the 2018 Pyeongchang Winter Olympics.<sup>3</sup> The 2016 Olympic Games were had in Rio de Janeiro during the Outbreak of Zika virus, thus gathering worldwide attention. With athletes and tourists at risk of potentially accelerating infection in the context of the global spread of Zika virus, there has been a lot of international discussion about whether to postpone or cancel the Olympic Games.<sup>4</sup>

According to the current plan, 2021 is going to be a big year for sports, with the Tokyo Olympics, the Copa America, the European Football Championship, the World University Games, and other domestic and international competitions scheduled to be held in 2021. China will also host the 2022 Winter Olympics, the 2022 Asian Games in Hangzhou, the 2023 Asian Cup, and the postponed Club World Cup. The epidemic situation of new coronavirus pneumonia has been characterized by globalization and long-term, and its prevention and control have become normalized. How to timely adjust the event preparation, improve the diagnostic ability of the virus, and take effective preventive measures to reduce the potential health risks in large-scale sports events have turn into the focus of attention of many organizers, and also a major test for the host country. Therefore, this study analyzes the practice and experience of holding large-scale sports events under the background of public health emergencies of international concern, and discusses how to take effective preventive measures to reduce the potential health risks of sports events in the current epidemic situation, for sake of offering reference for promoting the health emergency pre-control system and sports event management of smokeless large-scale sports events under the trend of globalization and normalization of the epidemic situation.

## **PUBLIC HEALTH EMERGENCY OF INTERNATIONAL CONCERN**

On January 30, 2020, the World Health Organization (WHO) announced that the outbreak of Coronavirus Disease (COVID-19) in China in 2019 will be listed as Public Health Emergency of International Concern (PHEIC).<sup>5</sup> In International Health Regulations (2005), PHEIC is defined as unusual events that constitute public health risks to other countries through the international transmission of diseases and may need coordinated global responses. The birth of PHEIC is directly related to China. During 2002 – 2003, severe acute respiratory syndrome (SARS) broke out in China. Subsequently, the WHO established the Emergency Committee. When an epidemic similar to SARS will occur in the future, such measures will help strengthen the resilience of international public health

emergencies. But in the past 17 years, there have been few diseases truly classified as PHEIC, including the new coronavirus-infected pneumonia epidemic, with a total of six cases: Hemagglutinin Neuraminidase (H1N1) in 2009, Wild poliovirus in 2014, Ebola Virus Disease (EVD) in West Africa in 2014, Zika Virus (ZIKV) in Brazil in 2016, and Ebola Virus in Congo in 2018-2019.

## **LARGE-SCALE SPORTS EVENTS AND PUBLIC HEALTH SAFETY**

### **Public health safety**

Mass gatherings are considered to be a latent risk of the spread of contagions and may damage the health systems of their host countries.<sup>6</sup> Evidence of increasing transmission of contagions is unclear at international sporting events that draw numerous tourists around the world, but major sporting events pose special challenges to public health. Abnormal population growth, limited space, and facilities, international travelers may be elements contributing to raised risk of contagions and hence increased demand for local public health services. In recent years, global public health safety is a comparatively new notion, which stimulates the response of public health to various threats that may endanger the world. With three pathogens (the Ebola virus, the influenza pandemic, and the outbreak of respiratory syndrome corona viruses) drawing attention, the World Health Organization has developed the global health security agenda to curb these threats. There is little evidence of public health monitoring, epidemiological survey, and impact on such events as the Olympics. However, infections are recognized risks and community health plans are an important part of the general plan of sporting games.<sup>6</sup> It is well known that all participants (including the audience and athletes) are faced with possible health risks in these major events, and through the experience of public health management, people have realized the importance of taking effective measures to reduce the public health risks caused by large-scale mass gatherings to improve the ability to cope with sudden major public health events in these

major events.

### **Current situation of major sports events under the background of PHEIC**

At present, we are experiencing a comprehensive outbreak of COVID-19, which is caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection. The new type of coronary pneumonia was first reported in Wuhan. As of August 22, 2021, there were more than 200 million confirmed cases worldwide, and the number of deaths was over 4.43 million.<sup>7</sup> COVID-19 is a destructive force for global sports. In terms of global sports events, 5584 events were planned for the first quarter of 2020. Starting with the suspension of domestic events such as China's Professional Basketball Association (CBA) on 23 January 2020, 3,714 events have been canceled, with a cancellation rate of 67 percent. None of the four major professional leagues in North America and the five major football leagues in Europe survived.<sup>8</sup> Faced with the continuing spread of COVID-19, IOC announced that the 2020 Tokyo Olympics would be held in 2021, protecting the health of athletes and all participants. On May 16, after more than two months of suspension, Germany became the first top event to recover from the new coronation crisis, which had an important impact on most sports leagues and sports fans in the world that needed to be restored.<sup>9</sup>

## **SUCCESSFUL EXPERIENCE OF HOLDING MAJOR SPORTS EVENTS UNDER THE BACKGROUND OF PHEIC**

### **H1N1 pandemic and the World University Student Games**

**Background:** Under the background of the pandemic of H1N1 influenza virus, Serbia held the 25th World University Games from July 1 to 12 in 2009. The Games are an international sports competition for international college athletes, involving 53 venues in 9 regions, 8,600 athletes, 10,000 volunteers, 5,000 employees, and about 500,000 audiences from 143 countries /regions.<sup>10</sup> The sporting event included indoor and outdoor venues, as well as accommodation and reception facilities for all delegations.

**Measures:** Firstly, send information to the delegation one month in advance, suggesting that participants should reconsider their travel to Serbia if they have symptoms similar to influenza. Secondly, with the rapid development of the epidemic situation,

the standard for canceling the Universiade was also formulated, that is, the number of people diagnosed with H1N1 influenza, acute respiratory distress, or confirmed cases accounted for 1% of the participants. Next, according to the pandemic plan, the National Reference Laboratory (Torlak) reported confirmed cases daily and strengthened the national surveillance of H1N1 influenza. Then, the European Centre for Disease Prevention and Control (ECDC) and the Serbian IPH jointly developed a special warning notice, which was distributed daily to IPH, the Academy of Military Medical Sciences, and the Ministry of Health in all regions. Finally, develop a detailed case detection and case management strategies, including posting preventive measures in French, English, and Serbian on the scene of the Games and how to seek medical help posters.<sup>11</sup>

Results: The Games were conducted as planned. Six days before the opening of the Games, the first imported H1N1 influenza patient was found among a traveler returning from Argentina until the formal opening of the Games. Ten travel-related patients and two-family patients (travel-related patients) were found nationwide. Until July 24, six athletes and one volunteer had been diagnosed with H1N1 flu, while 22 suspected cases were negative at the General Games clinic. Based on the latent period and contact history, three athletes were deemed to be associated with travel, while three athletes and a volunteer were doubted to be infected in Serbia. Patients aged between 20 to 25 years old, with mild symptoms. No cases have been identified or reported among the audience at the Games.<sup>12</sup>

### **Ebola and the African Youth Games**

Background: The 2014 Outbreak of Ebola Virus Disease (EVD) in West Africa caused 28,637 cases and 11,315 deaths.<sup>13</sup> During the Outbreak of the Ebola Virus, the African Youth Games were held in many venues in Gaborone, Botswana's capital, from 22 to 31 May, attracting about 2,000 athletes aged 15-20. The sports events they participated in mainly include football, swimming, and so on. Convocators were from 51 African countries, with audiences mainly from Botswana and other African countries.

Measures: Firstly, the Ministry of Health of Botswana has been highly alert, and WHO is required to offer rapid technical backing according to the framework of the 2005 International Health Regulations under the background of the expanding Ebola epidemic. Secondly, although there are no travel restrictions on athletes in countries (regions) affected by EVD, the identified EVD case contacts are not allowed to leave their countries. Next, at Gaborone International Airport, port health personnel conducted fever screening for incoming passengers and established a small medical institution at the airport to isolate patients. Then, a national surveillance system supported by the regional outbreak response team and a specific daily surveillance system related to events was established to publish case information daily and try to predict trends. Finally, isolation facilities were established in the existing health centers except for hospitals, sufficient personal protective equipment was purchased, and videos and demonstration training of personal protective equipment use, infection control practice, and simulation exercises were conducted for employees.

Results: People with early or hasty EVD were less impossible to participate in sports events, so the risk of introducing EVD cases was small. However, due to the high visibility of sports events, even a suspicious or confirmed case had a significant negative impact on the game. Therefore, after the announcement of EVD as PHEIC, the output screening was introduced. In addition to the necessary preparations, more common infectious diseases were monitored and managed. The results showed that there were no major public health incidents in this major sporting event, and each country had strengthened its infectious disease surveillance and reporting system.<sup>14</sup>

### **Zika virus and the 2016 Olympics**

Background: Participating in large-scale international sports events will make international athletes, audiences and local residents have risk of infectious diseases. The mosquito-borne Zika virus (ZIKV) has spread rapidly since it was first detected in Brazil in May 2015. It has spread to 68 countries around the world, particularly in South America, and has infected 4 million people, including 1.5 million in Brazil, causing global concern. The explosive transmission of ZIKV in Brazil puts forward a challenge to the public health security of the

Olympic and Paralympic Games scheduled to be held in Rio de Janeiro in 2016.<sup>15</sup>

Measures: Firstly, there was no specific treatment or vaccine at that time, and the best form of prevention was to prevent mosquito bites. For hosting the Olympic Games, the Brazilian government, in cooperation with WHO, adopted coordinated international countermeasures to improve monitoring, detect infection, and accelerate the development of diagnostic tests and vaccines. Secondly, the Brazilian government formulated a strict vector control plan before the Olympic Games, equipped with 3000 health workers in Rio, spraying pesticides to eliminate the breeding grounds of *Aedes albopictus*, to prevent the risk of ZIKV and other infectious diseases among participants and residents in the upcoming Rio Games. Next, educate people to prevent and reduce the risk of ZIKV, so that people pay attention to the concept. Then, all participants in the Olympics ought to consult travel health advice in advance from medical offers, and refer to the National Tourism Health Network and Center, the Latin American Travel Medical Association, and the latest national information on pre-travel vaccination requirements. Finally, Zika virus is a blood-borne disease, infection control precautions include strict hand hygiene and exposure precautions.<sup>16</sup>

Results: ZIKV transmission in the Americas poses a potential threat to participants in the 2016 Rio Olympics. Without the ZIKV vaccine, the control work depends totally on mosquito vector control at the neighborhood and family levels and individual mosquito prevention. During the Olympic Games, a can of orange mosquito-repellent spray and anti-mosquito bracelets will be placed in the event bag of each Olympic registered journalist. Brazil's health minister is more assured that the risk of Zika virus infection among tourists in a period of the Olympics is minimal, as confirmed in subsequent reports.<sup>17</sup> Specific development and rapid diagnostic testing of ZIKV availability will help to strengthen surveillance and assess the risk level of the epidemic. ZIKV emerged shortly after the Ebola outbreak, which reminds us of the urgent need for global coordination efforts to have sufficient resources for rapid responses

to teams to actively monitor emergencies and carry out priority research.<sup>18</sup>

## **PATH ANALYSIS OF HOLDING LARGE-SCALE SPORTS EVENTS UNDER THE NORMALIZATION TREND OF EPIDEMIC GLOBALIZATION**

In 2002, the International Olympic Committee launched the Olympic Knowledge Service Project to pass on the experience of previous Olympic Games as a legacy to the hosting and hosting cities of the next Olympic Games, which greatly reduced the failure rate. In recent years, China has turned into one of the countries with the largest number of large-scale sports events in the world.<sup>8</sup> Combined with the continuous spread of the current international epidemic and the reality that China has entered the stage of normalized pre-control of the epidemic, the successful experience of holding large-scale sports events in the context of PHEIC should not dissipate with the extinction of the epidemic, but should actively upgrade the concept of crisis management and explore the development path of sports events. In the post-epidemic era, it will provide an opportunity for the governance of sports events in China.

### **International cooperation is key to the success of major sporting events**

When a health emergency strikes, there is little or no warning at all. To save lives and prevent the spread of diseases in sports activities, means that relief resources must be quickly put in place, and the most important is skilled and experienced personnel. However, it may be difficult to personnel and negotiate contracts during emergencies. For countries (regions) that organize events, one way to make up for the skill gap in an emergency is to learn from the lessons learned during the H1N1 epidemic through international cooperation. The partnership plan established in 2013 links WHO with a group of quasi-government organizations involved in emergency and relief work.<sup>19</sup> These organizations have their professional rosters, which are experienced and trained, ready to work in emergencies, including in challenging locations. Taking backup partners as an example, since the implementation, 11 deployments have been carried out in 2013, the first year of planning. By 2016, backup partners planned to provide field expert support in 18 countries valued at more than \$4.2 million. In 2017, nine experts from different

professional fields were deployed to 16 countries, providing free support worth \$ 3.35 million, which can be seen that their backup partners play an important role in emergency response.<sup>20</sup>

At present, the new coronavirus pneumonia outbreak and spread rapidly in many foreign countries. While striving to win the war against epidemics in China, China actively participates in international cooperation against epidemics and assists relevant countries and international organizations. This is not only China's international responsibility but also conducive to consolidating the early anti-epidemic results. In the shadow of the new corona pneumonia epidemic, the fire handover ceremony of the Tokyo Olympic Games was held in Athens, Greece, on March 19, with only more than ten guests attending, and the performance was canceled. However, in contrast to this coldness, the IOC has been communicating with stakeholders such as the International Federation of Single Sports, athletes representatives, and the National (Regional) Olympic Committee to actively respond to challenges. The International Table Tennis Federation is actively seeking alternative solutions for the cancellation of the Olympic Qualifications, including increasing the Intercontinental Olympic Qualifications in the World Singles or before the Olympic Games or determining the eligibility for promotion according to the current world rankings. The international federations of individual sports issued a revised version of the rules for the promotion of all 33 items of the Tokyo Olympic Games in early April, fully cooperating with the IOC in its preparations for the 2021 Tokyo Olympic Games.

### **Potential interventions are effective means of preventing the spread of epidemics in events**

In addition to the participation of athletes, organizers, volunteers, journalists, and audiences from various countries and regions also participate in large-scale sports activities. After the first case of new coronary pneumonia occurred in Wuhan City, China, the outbreak of the disease is predictable at home and abroad. Recent data analysis shows that transport is significantly associated with the amount of regional

lly imported cases and that passengers play an important part in taking new patients to other areas, confirming the continued inter-person transmission and asymptomatic individual transmission,<sup>21</sup> indicating the demand for devices to raise the consciousness of latent travel-related risks among event participants and to minimize them. First of all, travelers can be informed of their vaccination state and proposal vaccination plans through event portals and electronic records by which let individuals check their vaccination history. These tools will help prevent personal infections and break out when they return. Secondly, the risk associated with travel and the cost of vaccination status will be included in routine health care, which will help to expand the scope of vaccination in the population most vulnerable to travel-related diseases.

General practitioners can ask whether there is a recent trip or to provide health advice for people who are about to travel shortly soon, such as whether the destination is the outbreak of hepatitis A, hepatitis B virus, and other travel-related diseases, and provide corresponding preventive measures to decrease the infection probability within a certain travel period, and reduce the spread of disease when returning. Take German travelers for example, they returned from Kenya and Senegal who utilized the correct malaria vaccine preventive measures had accepted medical experts' advice. Participants should therefore have awareness of the significance of questing pre-travel medical suggestions. In airport surveys like Europe and South Africa, the demand for improving vaccination awareness and complying with travel health recommendations was also recorded. The research results confirmed that higher international travel frequency and epidemic prevalence in destinations were related to higher vaccination rates. However, many people have not been vaccinated, and about half of the vaccinators are unable to determine the recommended vaccination schedule or their past vaccination history. This fact once again shows that tools are needed to improve the awareness of sports event participants on dangerous destinations.

### **Risk communication provides effective guidance to prevent epidemic development**

Countries (regions) hosting sports activities can also cooperate with other departments to provide more suggestions in addition to providing travel traffic advice for participating in sports events, such as providing travel health advice and special

telephone consultation line for medical service providers. At present, the UK National Travel Health Network and Center (NaTHNaC) not only has touring health data for visiting China but also produces information reports to assist travelers to know the continuous development of the epidemic. When the epidemic happens during the Spring Festival holiday, a large number of British passengers will plan to travel to China. Epidemic information is updated every day, therefore, case information can also be tracked in other countries. These resources attract a large number of the public, and the page views of the TravelHealthPro website set a new record of 80,000 within a day, while the page views of the recommended pages for China increased by more than 400%. Advisory hotlines on epidemics have also enhanced, and this situation may go on as COVID-19 cases increase globally. These early signs of citizens' concern can assist the event preparatory staff to prepare for semblable negotiations that may increase.

In cooperation with technical experts, the learning team of WHO's health emergency planning in 2020 provided more than 60 courses in 21 languages on the WHO emergency open learning platform OpenWHO.org four days before the announcement of the outbreak of COVID-19 as an international public health emergency. The courses can be accessed by users in each country in the world. Since the beginning of the training, about 3,000 new users have registered for the training every day, indicating that health professionals and the public are very interested in the virus. In addition, more than 200,000 people have watched introductory videos of the course on YouTube. As of February 7, more than 25,000 people worldwide have obtained real-time knowledge about how to detect, prevent, respond to and control COVID-19 from WHO experts.<sup>22</sup> There is growing recognition of the significance of promptly, precise risk-sharing in public health emergencies, particularly as the way people use the media changes rapidly. WHO draws on previous PHEIC experiences and provides useful guidance on risk exchange in this context. Therefore, good risk communication in the early stage of the event can make people know in real-time the risks

they may confront from reliable resources and any safety method that can be taken to minimize this risk.

### **Digital technology is a new opportunity to monitor disease outbreaks in sports**

The prevention of infectious diseases includes developing new drugs, vaccination programs, improving health conditions, and promoting behavioral changes. Although the above methods can lower the danger of epidemical diseases, they are not able to eliminate this risk. At present, national and international infectious disease surveillance networks have been built. The aim of the mass health monitoring network is to offer ongoing data collection, analysis, explanation, and spread of health-related events for mass health actions to decrease incidence and mortality and increase health. The most reliable source of information for mass health monitoring networks is accurate disease diagnosis. Unfortunately, due to various delays, confirmation of diagnosis may cost several days. Since mass gatherings in sports activities pose a challenge to health care due to the risk of spreading infectious diseases, participants will disperse soon after gathering and may spread diseases in their communities. This fact makes the situation worse, and the disintegration of participants also endangers traditional surveillance systems. Delay in determining the prevalence of infectious diseases can lead to the delayed response, which may greatly aggravate the social influence of the epidemic. Symptom monitoring, as a method to reduce delay, emphasizes the utilization of real constant-time information and automation instruments to test and represent abnormal activities for coming mass health surveys. A wide scope of pre-diagnostic information can be available, consisting of clinical data like nurse consultation hotline activities, prescription drug sales, and e-healthcare records, and non-clinical information like non-prescription (OTC), health-related net searches, and other information in internet-based networking services (Table 1).<sup>23</sup>

The realization of digital technology to monitor outbreaks in sports requires improvements in communication facilities, consisting of web access, to achieve electronic communications and improve the timeliness of reporting. In addition, increased training investment in epidemiology, spot surveys, and information technology are essential for the coming success of broader monitoring activities. With increased access to the Internet, reduced costs, and improved user-friendly

performance of information technology in developing countries, new applications for symptom surveillance are strengthening past surveillance and are expected to continue to enhance surveillance of global outbreaks to achieve the goal of International Health Regulations. In the future, this monitoring can demonstrate the validity and feasibility of low-technology symptom monitoring in resource-poor areas and can serve as a starting point for

coming developing principles on how to guide symptom monitoring in developing nations.

**CONCLUSION**

In the past decade, the demand for holding large-scale sports events has been unprecedentedly high because of the profound influence of large-scale sports events on the economic, social, and political development of countries (regions). Non-tobacco sports is a kind of sustainable development direction

**Table 1  
Digital Technology Tools**

Digital technology and hierarchies	Description
<b>Baidu</b>	Internet search engine ( <a href="http://www.baidu.com">http://www.baidu.com</a> )
<b>Biodefense</b>	Integrated surveillance system for monitoring bioterrorism and infectious disease threats
<b>Electronic surveillance and early warning system based on community epidemic</b>	Symptom surveillance systems based on electronic emergency department information for early detection of public health events
<b>EpiNorth</b>	A project to improve surveillance of infectious diseases in Europe ( <a href="http://www.epinorth.org">http://www.epinorth.org</a> )
<b>GeoSentinel surveillance network</b>	Clinic network for monitoring travel-related diseases ( <a href="http://www.istm.org/geosentinel">http://www.istm.org/geosentinel</a> )
<b>Global Public Health Information Network ( GPHIN )</b>	Internet-based systems to monitor public health threats utilizing information from news reports and websites
<b>Mobile disease monitoring system ( Hajj-MDSS )</b>	Mobile-based systems were implemented in 2009 to monitor disease threats
<b>Medical Electronic Monitoring Network</b>	Network-based systems developed for infectious disease surveillance, disease outbreaks, and public health resource management
<b>Health map</b>	Internet-based epidemic surveillance sites which based on information extracted from various sources ( <a href="http://www.healthmap.org">http://www.healthmap.org</a> )
<b>Application for Health Cup</b>	Android and iPhone applications for disease surveillance and prevention during FIFA World Cup 2014
<b>MediSys</b>	A system for collecting information on potential public health threats from the Internet
<b>Radio frequency identification ( RFID ) technology</b>	A radio system consisting of labels and readers that give off airwaves and receive signals from labels
<b>Real-time outbreak and disease surveillance ( RODS )</b>	Open-source software for collecting and analyzing disease surveillance information( <a href="http://openrods.sourceforge.net">http://openrods.sourceforge.net</a> )
<b>Symptom Tracking and Reporting System ( STARS )</b>	Integrated monitoring system for tracking bioterrorism and infectious disease threats utilizing hospital emergency department information
<b>Twitter</b>	Social contact media microblog website ( <a href="http://www.twitter.com">http://www.twitter.com</a> )
<b>Wireless and Human Sensor Networks</b>	Wearable system with wireless transmission

of both sports and health. Although they have great attraction and long holding history, the risks may occur at any time due to the particularity of sports events, especially in the context

of public health emergencies of international concern.<sup>24</sup>Through the review of the experience of hosting large-scale sports events under the background of PHEIC, it is known that there is a risk of viral infection and transmission whether there are

large-scale sports events or not. During PHEIC, countries take measures to strengthen the surveillance of infectious diseases and make full preparations for any event. Though it may need added resources and support, these endeavors are worthy and constitute part of the experience of large-scale sports events. At present, although the Tokyo Olympic Games are going smoothly, it still faces potential risks. The number of major sports events to be held in China in the next seven years is only second to that of the United States.<sup>8</sup> In addition, studies have shown that even if the vaccine is developed, the new coronavirus may accompany human beings until 2025.<sup>25</sup> Therefore, absorbing and summarizing the experience of major sports events held during the PHEIC period, exploring the development path of sports events and enhancing the ability to respond to crises against risks will greatly reduce the failure rate of competition, promote the construction of emergency prevention and control system of major sports events under the trend of globalization and normalization, and provide an opportunity for China to restore sports events and sports events scientifically and orderly.<sup>26</sup> In the face of public health emergencies of international concern, human beings are a community of destiny. Smokeless sports are the embodiment of the Olympic spirit and the need for the sustainable development of the Olympic movement.<sup>27</sup> Only by solidarity and cooperation can we cope with global risk challenges and make sports a better contribution to the world.

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The authors declare no conflict of interest in the authorship or publication of this work. This research is not funded by any organization related to tobacco production.

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