



RAPID RISK ASSESSMENT

Mass gathering event FIFA World Cup, Russia 2018

28 May 2018

Main conclusions and options for response

Before visiting the 2018 FIFA World Cup in Russia, which will be taking place from 14 June to 15 July, visitors should ensure that all their vaccinations are up-to-date in accordance with the recommended immunisation schedule in their country of residence. This is particularly important for protection against diseases such as diphtheria, hepatitis A, hepatitis B, measles, meningococcal infection, mumps, pertussis, poliomyelitis rubella and tetanus.

As is often the case with mass gathering events, during the 2018 FIFA World Cup in Russia visitors may be most at risk of gastrointestinal illness and vaccine-preventable infections.

The risk of being affected by gastrointestinal illness can be reduced by employing standard hygiene measures including regular hand washing with soap, drinking safe water (bottled, chlorinated or boiled before consumption); eating thoroughly cooked food and carefully washing fruit and vegetables with safe drinking water before consumption.

Visitors to the 2018 FIFA World Cup in Russia are advised to use condoms with new or casual sexual partners in order to decrease the risk of sexually transmitted infections, including HIV.

Travellers who require hospitalisation in the EU after having been hospitalised in Russia should report their previous hospitalisation so as not to delay the possible ascertainment of recent healthcare-associated infections.

Outbreaks and spread of vaccine-preventable diseases are of particular concern during mass gatherings but there are no indications that the risk is higher than usual. Proper vaccination in advance is an effective way of preventing the contracting and further spread of vaccine-preventable infections. Therefore those planning to attend may need to consult the relevant health service provider in their country regarding their vaccination status.

There is a possibility that travellers may import or export communicable diseases. Surveillance for communicable diseases in Russia and EU countries to which travellers and World Cup attendees return should be sensitive enough to detect threats at a stage when interventions are likely to prevent or reduce the impact of outbreaks.

Based on the epidemiological profile for infectious diseases in Russia and the profile of the visiting populations, ECDC will conduct enhanced epidemic intelligence surveillance for communicable diseases from 7 June to 22 July 2018.

Source and date of request

ECDC Internal Decision, 6 February 2018.

Public health issue

The aim of this document is to assess the health risks related to communicable diseases for EU/EEA citizens during their stay in Russia for the 2018 FIFA World Cup, and the public health implications for European countries after travellers return to their countries. This assessment provides the basis for ECDC's monitoring of health threats during the 2018 FIFA World Cup in Russia.

Health risks associated with mass gatherings

International mass gatherings increase the risk of communicable disease transmission and present particular challenges for health security. For host countries, these challenges are associated with the introduction of communicable diseases from outside, the arrival of many susceptible individuals, overcrowding, outbreaks of endemic infectious diseases, opportunistic and uncontrolled sale of food and beverages, increased risk behaviour associated with alcohol and other drugs, language barriers for the dissemination of public information, increased pressure on sanitary facilities, and the heightened security level. The increased sensitivity for identifying potential health threats, coupled with heightened media attention and political pressure, can place considerable pressure on public health functions and decision making.

Documented infectious disease threats associated with mass gatherings which have affected the EU countries include: Legionnaires' disease cases during the Euro Cup in France 1998 [1]; a measles outbreak in Germany originating from a religious gathering in France 2010 [2]; and outside of the EU invasive meningococcal disease (IMD) among scouts who participated in the World Scout Jamboree held in Japan 2015 [3] and a norovirus outbreak during the Winter Olympics in South Korea 2018 [4]. It can be difficult to determine if an outbreak that takes place in temporal association with a mass gathering would not have occurred in the absence of the gathering. It is likely that some events are detected as a result of the increased surveillance around mass-gatherings, and that these events would have occurred even in the absence of the mass-gathering.

There are a number of infectious diseases that are very unlikely to occur during the 2018 FIFA World Cup, but it is still important to monitor for them due to their severity and high case-fatality ratio. These include viral haemorrhagic fevers and diseases that can be intentionally released, such as anthrax, plague or smallpox.

Three aspects of the public health risks associated with mass gathering events are:

- risks associated with the movement of people to the hosting countries: risk to visiting population and local population due to international population movements for the mass gathering event;
- risks associated with being a participant/spectator at the mass gathering event;
- risks associated with the return of participants and spectators from the hosting country (export of communicable diseases).

Factors that determine the level of risk include:

- demographics, epidemiology of infectious disease and behaviour of the population attending the mass gathering (e.g. age, health status, risk behaviour before and during the event, movement and interaction between host and visiting populations, etc.);
- demographics, epidemiology of infectious disease and behaviour of the host population;
- environment, climate, time of year, seasonality of endemic diseases at the location;
- capacity for risk assessments, planning, preparation, surveillance and preventive public health interventions: pre-travel advice, on-site information at the mass gathering venue (e.g. information campaigns, food inspection, etc.).

Consulted experts

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External experts: World Health Organization experts contributed to this risk assessment. Although experts from WHO reviewed the risk assessment, the views expressed in this document do not necessarily represent the views of WHO.

Event background information

1.1 FIFA World Cup 2018

The FIFA World Cup 2018 will take place from 14 June to 15 July 2018 in Russia [5]. Over three million people will attend football matches that will be played by 32 international teams in 12 stadiums and arenas located in 11 cities, mainly in the European part of Russia (Ekaterinburg, Kaliningrad, Kazan, Moscow, Nizhny Novgorod, Rostov-on-Don, Saint Petersburg, Samara, Saransk, Sochi and Volgograd – see Table 1). According to FIFA, average attendance for one match is usually around 50 000 spectators [6]. Most of the stadiums have a capacity of around 45 000 people, the largest ones are located in Moscow and Saint Petersburg, and the smallest in Kaliningrad and Ekaterinburg (Table 1).

Over 1 698 000 tickets are being sold to the fans and spectators [7]. Most of the tickets have been allocated to Russian fans (796 875), followed by fans from USA (80 161), Brazil (65 863), Colombia (60 199), Germany (55 136), Mexico (51 736), Argentina (44 882), Peru (38 544), China (36 841), Australia (34 628), UK (England) (30 711) and other countries.

Table 1. Location and capacity* of the FIFA 2018 venues in Russia

Host city (population in millions)	Stadium	Capacity
Ekaterinburg (1.3)	Ekaterinburg Arena	35 000
Kaliningrad (0.9)	Kaliningrad stadium	35 000
Kazan (1.1)	Kazan Arena	45 000
Moscow (12)	Luzhniki Stadium	80 000
Moscow	Spartak Stadium	45 000
Nizhny Novgorod (1.9)	Nizhny Novgorod Stadium	45 000
Rostov-on-Don (1.1)	Rostov Arena	45 000
Saint Petersburg (4.8)	Saint Petersburg Stadium	67 000
Samara (1.16)	Samara Arena	45 000
Saransk (0.3)	Mordovia Arena	45 000
Sochi (0.1)	Fisht Stadium	48 000
Volgograd (1.0)	Volgograd Arena	45 000

* The number indicates the anticipated full capacity of the stadium in its finished state. However, in each case the official capacity of the stadium for the 2018 FIFA World Cup will be lower due to FIFA World Cup specific requirements.

Figure 1. Location of the 2018 FIFA World Cup venues, Russia, 2018



ECDC. Map produced on: 15 May 2018

1.2 Participating countries

Teams from 32 countries will attend the 2018 FIFA World Cup in Russia: Argentina, Australia, Belgium, Brazil, Colombia, Costa Rica, Croatia, Denmark, Egypt, England, France, Germany, Iceland, Iran, Japan, Mexico, Morocco, Nigeria, Panama, Peru, Poland, Portugal, Russia, Saudi Arabia, Senegal, Serbia, South Korea, Spain, Sweden, Switzerland, Tunisia and Uruguay.

1.3 Travel

All of the 2018 FIFA World Cup host cities in Russia are accessible by air, road, and rail. In addition, Kaliningrad, Saint Petersburg and Sochi are accessible by sea.

According to IATA, under normal circumstances, most EU/EEA citizens travelling to Russia by air come from Germany, Italy, Spain, Greece, France and the United Kingdom, with the main destinations being the largest cities of Moscow and Saint Petersburg. During the 2018 FIFA World Cup, more visitors are expected from other European countries and also from countries across the world such as Argentina, Australia, Brazil, China, Colombia, Mexico, Peru, and USA.

Communicable disease epidemiology in Russia

Communicable disease epidemiology reports are collected by the Russian Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing (Rospotrebnadzor). Data reported in the section below is mainly from Rospotrebnadzor [8] and figures are for Russia as a whole, unless otherwise stated.

Antimicrobial resistance and healthcare-associated infections in Russia

In 2016, according to WHO's Regional Office for Europe, the Russian Federation reported antibiotic susceptibility testing results for 454 isolates from blood and cerebrospinal fluid samples [9]. Data were provided from 26 laboratories, mostly from urban tertiary care hospitals across the Russian Federation. Carbapenem resistance was 12% in *K. pneumoniae*, 49% in *P. aeruginosa* and 74% in *Acinetobacter* spp. Ninety-one percent of *K. pneumoniae* isolates were resistant to third-generation cephalosporins. Twenty-three per cent of *S. aureus* isolates were MRSA. No data were available on *S. pneumoniae*. In *E. faecalis* as well as *E. faecium*, vancomycin resistance was not observed. The reported resistance percentages are considered to mainly reflect healthcare-associated infections. Furthermore, due to the small sample, the reported results should be interpreted with caution. There is a paucity of data on the incidence of healthcare-associated infections in the Russian Federation.

Emerging and vector-borne diseases in Russia

- **Malaria:** in 2016 WHO declared that malaria had been eliminated from the European Region [10]. Outbreaks of malaria occurred in Azerbaijan and Tajikistan in the 1990s followed by an outbreak of autochthonous cases reported in Moscow in 2000–2005 [11]. According to Rospotrebnadzor, all malaria cases reported in recent years have been imported, except for one autochthonous case, infected through an imported case in 2014 [12]. In 2017, Rospotrebnadzor reported 92 cases of malaria and in 2016, 101 cases. The majority of these were imported from African countries and India. Most malaria cases were reported in Moscow. In 2017, deaths due to malaria resulting from late diagnosis occurred in the regions of Vladimir, Samara, Sverdlovsk, and Ulyanovsk [12].
- **Plague:** Limited outbreaks of plague were reported in 2013 in Dagestan which is approximately 2 000 km from Moscow [13].
- **Q-fever:** An increase in the number of Q-fever cases in Russia was reported in 2017, with 148 cases compared to the 96 cases reported in 2016 and 49 cases reported in 2015 [8].
- **Tick-borne encephalitis (TBE):** Over the past five years Russia has reported around 2 000 TBE cases annually. In 2017, TBE was endemic in the majority of oblasts [regions], including the territories of host cities for the 2018 FIFA World Cup [14]. In Russia, three sub-types of tick-borne encephalitis virus (TBEV) are present, the European (TBEV-Eu), the Siberian (TBEV-Sib), and the Far Eastern (TBEV-FE). These are carried by different tick species and the disease severity varies among the three sub-types of virus. The most prevalent tick in the Caucasus is the same as in Europe - *Ixodes ricinus*.
- **West Nile fever (WNF):** In 2017, 13 cases were reported, the lowest number since 2008, and national morbidity rates for West Nile fever were below the national average for the past five years [15]. Of the 12 cases reported in 2017 for which data was available, five (41%) were imported from Thailand and Vietnam, and seven were autochthonous cases. Monitoring results indicated the circulation of WNF virus markers in the carriers of the pathogen in six regions of Russia (Table A1), and the presence of IgG antibodies in the healthy population in 24 geographical entities. Molecular-genetic typing of WNF virus samples from the mosquito *Culex modestus* in the Volgograd region established that it was WNF virus genotype II. According to the report, the possibility of local increase in WNF incidence in certain regions of Russia during 2018 cannot be ruled out.
- **Borreliosis (Lyme disease):** During the past five years Russia has reported between 6 000 and 7 000 borreliosis cases annually.

Viral haemorrhagic fevers (VHF):

- **Crimean-Congo Haemorrhagic Fever (CCHF):** In 2017, 79 CCHF cases were reported, compared to 162 cases in 2016. From 2013 to 2017, between 80 and 162 cases were reported annually. According to the previous reports, these CCHF cases occurred within proximity of Sochi.
- **Haemorrhagic fever with renal syndrome (HFRS):** In 2017, 8 298 cases of haemorrhagic fever with renal syndrome were reported in Russia, which is an increase on the 6 021 cases reported in 2016. Haemorrhagic fever with renal syndrome is caused by species of hantaviruses from the family *Hantaviridae*, in the order *Bunyavirales*.

A recent study has demonstrated the occurrence of human infections by a novel Sochi virus, which is carried by the Black Sea field mouse (*A. ponticus*). The mouse occurs naturally in the Transcaucasian region between the Black and Caspian Seas, including a part of southern European Russia. Among the viruses related to the Dobrava-Belgrade virus (DOBV) species, Sochi virus, which is similar to Dobrava virus (carried by *A. flavicollis* mice), seems to be the most virulent, with a CFR of up to 10–12% [16].

Food- and waterborne diseases and zoonotic infections in Russia

- **Anthrax:** This disease is commonly detected in cattle in Russia. Only sporadic cases or outbreaks are reported among people, mostly among those working with cattle. According to Rospotrebnadzor, in 2016 there were 36 human cases of anthrax reported in Russia, with an outbreak reported in Yamal-Nenets autonomous district, 3 600 km north-east of Moscow [17]. The disease is endemic in countries bordering on Russia. In 2016, an outbreak of anthrax was reported in neighbouring Kazakhstan [18].
- **Botulism:** In Russia, nine cases were reported in 2017 and 12 in 2016. The majority of cases acquired the infection after consumption of home-made fish products (dried, salted and smoked fish) and preserved mushrooms, tomatoes and cucumbers [19].
- **Brucellosis:** Between 2013 and 2017, on average 330 cases of brucellosis were reported annually in Russia.
- **Campylobacter:** There are no reports on campylobacteriosis in Russia.
- **Cholera:** There are no reports on cholera in Russia.
- **Legionnaires' disease:** There are no reports on Legionnaires' disease in Russia.
- **Salmonellosis:** The number of reported salmonellosis cases ranged from 48 000 cases reported in 2013 to 32 308 cases reported in 2017.
- **Shigatoxin/verocytotoxin-producing *Escherichia coli* (STEC):** There are no reports on STEC in Russia.
- **Shigellosis:** In 2017, 6 651 cases of shigellosis were reported, and in 2016 there were 9 655 cases. In the preceding three years there were around 11 000 cases reported annually.
- **Tularemia:** The number of trichinosis cases varied in the past five years from around 30 cases reported in 2013 and 2015 to 139 cases reported in 2016 and 63 cases reported in 2017.
- **Typhoid and paratyphoid fever:** There were 24 cases of typhoid fever reported in 2017, 13 cases in 2016 and 29 cases in 2015.
- **Toxoplasmosis:** Around 800 cases of toxoplasmosis are reported annually in Russia, though in 2015 there were 539 cases and in 2014 there were 680 cases [20].
- **Yersiniosis:** Cases of yersiniosis are reported throughout the year in Russia, with a peak in spring (March–May). In 2010, 2 572 cases were reported in Russia [21].
- **Tularaemia:** In 2017, 168 cases of tularaemia were reported in Russia. Prior to that 123 cases of tularaemia were reported in 2016, 67 cases in 2015 and 96 cases in 2014. According to GIDEON, an outbreak of tularaemia involving 1 063 cases was reported in 2013 in Khanty-Mansiysk autonomous okrug [county], 2 600 km north of Moscow.
- **Leptospirosis:** In 2017, 175 cases were reported, compared to 166 cases in 2016. Around 255 cases were reported in both 2014 and 2013.
- **Rabies:** In 2017, two rabies cases in humans were reported in Russia. Between 2013 and 2016 there were three to six human cases reported. In animals, an increasing number of rabies cases has been observed in an increasing number of regions [22]. Most rabies cases in wild animals are reported in foxes (80%) and among domestic animals the majority are among dogs.

Vaccine-preventable diseases in Russia

Vaccine coverage for the recommended routine immunisation schedule for children in Russia is reported to be high. Vaccines recommended in the entire country include: BCG, diphtheria, haemophilus influenza type B, hepatitis B, measles, mumps, pertussis, pneumococcal, poliomyelitis, rubella, and tetanus.

- **Diphtheria:** One or two cases of diphtheria were reported annually in Russia between 2013 and 2016. No cases were reported in 2017.
- **Haemophilus influenza type B:** There are no reports on *Haemophilus influenza type B* infections in Russia.
- **Measles:** In January–March 2018, Rospotrebnadzor reported 843 cases of measles in Russia. In 2017 there were 725 cases of measles reported. Outbreaks of measles continue to be reported in the Moscow region in 2018 [26]. Almost 4 700 cases of measles were reported in Russia during 2014.
- **Meningococcal infection:** In 2017, 859 cases of meningococcal infection were reported, in 2016 there were 742 cases. Around 1 000 cases were reported in 2015 and 2014, while almost 1 300 cases were reported in 2013.
- **Mumps (parotitis epidemica):** There have been reports of a steady increase in parotitis epidemica in Russia, with 4 443 cases in 2017, compared to 1 108 cases reported in 2016 and 193 cases in 2015.
- **Pertussis:** Over 5 400 cases of pertussis were reported in Russia in 2017 and 8 229 cases in 2016. In 2015 there were 6 447 cases and in 2014, over 4 600 cases were reported.
- **Polio:** Due to the high immunisation rate with the third dose of polio-containing vaccines (98%) [27], poliomyelitis, caused by wild polio virus, has not been detected in recent years in Russia. However, Rospotrebnadzor reports sporadic cases of acute paralytic poliomyelitis, caused by vaccine virus. In 2017, six cases were reported. One case of poliomyelitis was reported in 2016 and there were two cases of acute paralytic poliomyelitis caused by vaccine poliovirus reported in 2013. The current immunisation schedule includes two doses of IPV administered at 3 months and 4.5 months of age, followed by OPV offered at 6, 18, and 20 months of age and again at 14 years. This is expected to reduce the number of vaccine-induced poliomyelitis cases. In 2010, poliomyelitis caused by wild polio virus was detected in 14 cases. All of these cases were related to the large polio outbreak in Tajikistan that was going on at the time, the largest outbreak in the European Region (WHO) [28].
- **Rubella:** Six rubella cases were reported in 2017 and 44 in 2016. In past years, the number of cases varied from 172 in 2013 to 20 in 2015.

Influenza in Russia

- **Seasonal influenza:** Respiratory influenza-like illnesses, seasonal influenza virus detections and hospitalisations associated with influenza infection are returning to the low levels expected during summer months. Russia is one of the reporting countries to FluNewsEurope, the Joint ECDC–WHO/Europe weekly influenza bulletin [23].
- **Highly pathogenic avian influenza:** Highly pathogenic avian influenza A(H5N2) and A(H5N8) were detected in birds in Russia in 2017 [24]. No transmission to humans has been observed in relation to these viruses.

Tuberculosis

- In 2017, Russia reported 66 568 new cases of active tuberculosis. In 2016 there were 72 639 cases, in 2015 there were 77 650 cases, and in 2014 there were 78 125 cases. Bacillus-Calmette-Guérin (BCG) vaccination is offered to all (infants at three days old and children aged seven years.) Russia reported 92 407 new and relapse tuberculosis cases to ECDC/WHO Regional Office for Europe in 2016. Of 57 910 tuberculosis cases with drug susceptibility testing results reported for at least isoniazid and rifampicin, 25 971 (44.8%) were diagnosed with multidrug-resistant tuberculosis [25].

Sexually transmitted and blood-borne infections in Russia

- **Chlamydia:** In studies published between 2006 and 2017, CT prevalence ranged from 2.9% to 33% in different populations and settings from Russia, with the highest proportions observed among symptomatic men attending STI clinics in Moscow and Moscow region [29].
- **Gonococcal infection:** Since 2013, a decreasing number of cases has been reported annually in Russia, falling from 42 282 gonorrhoea cases in 2013 to 15 969 in 2017 [8]. However, the underreporting of gonorrhoea is probably due to heterogeneity in healthcare settings and suboptimal diagnostics and case reporting [30].
- **Syphilis:** decreasing numbers of newly diagnosed syphilis infections have been reported in Russia, with 40 532 cases reported in 2013 and 27 439 in 2017 [8].
- **HIV:** Russia has the highest notification rate for HIV in the European Region, with more than 103 000 new diagnoses made in 2016 (72.1 per 100 000 population). There has been a steady increase in the number of HIV diagnoses over the past decade (45 300 cases, 31.6 per 100 000 were diagnosed in 2007) [31]. Injecting drug use and sex between women and men are the predominant modes of HIV transmission (49% of the new diagnoses, respectively) followed by sex between men (1.5%) and mother-to-child transmission (0.8%) [32].
- **Hepatitis B:** In 2017, there were 1 271 cases of acute hepatitis B reported, compared to 1 380 cases in 2016. Chronic hepatitis B was diagnosed in 14 073 cases in 2017, and 14 807 cases were reported in 2016.
- **Hepatitis C:** In 2017, 1 785 cases of acute hepatitis C were reported in Russia, and 1 807 cases in 2016. Among young adults, risk factors for transmission include sexual contact (32.6%), intravenous drug use (21.7%) and cosmetic procedures, including tattooing and piercing (7.6%) [33].

ECDC threat assessment for the EU

Sixteen EU national teams will participate in the 2018 FIFA World Cup, and a large number of EU travellers will visit the country during the event. The tournament will be taking place in the northern hemisphere summer, and climate/weather conditions will be mild at the Russian venues. The health threats and associated risks are assessed as the following:

- an infection imported to Russia by EU travellers;
- an infection imported to Russia from an ongoing event of international concern;
- a disease affecting an EU traveller during their stay in Russia;
- an infection imported to the EU after a traveller's return.

Risks of infection imported into Russia from the EU by travellers to the 2018 FIFA World Cup in Russia

The overall risk of a food- or waterborne disease being imported from EU into Russia is very low. There is a low risk of vaccine-preventable diseases being imported through infectious EU travellers from countries where transmission is ongoing, however there is a moderate risk of importation of measles from the countries with ongoing measles outbreaks. Finally, there is a very low risk of antimicrobial-resistant strains being imported to Russia through infected EU travellers. The risk of importation increases slightly if travellers are hospitalised.

Risk of infection imported into Russia from events of international concern

Recently, there have been five infectious disease-related events raising wide concern at the international level: the Ebola virus disease outbreak in Democratic Republic of the Congo (DRC); the MERS-CoV outbreak in the Middle East; the international spread of wild poliovirus; the yellow fever outbreak in Brazil and the global measles outbreaks.

An outbreak of Ebola virus has been affecting DRC since May 2018 [34]. As DRC will not be participating in the 2018 FIFA World Cup, and no other countries have reported cases associated with this outbreak, the risk of the Ebola virus disease being exported to Russia is considered low.

Since 2012, Saudi Arabia, has reported the majority of MERS-CoV cases [35]. Despite the recent cases reported by Saudi Arabia, there is a very low risk of MERS-CoV being imported into Russia.

Since the beginning of 2018, two countries have recorded cases of wild polio virus type 1 (WPV1): Afghanistan (seven cases) and Pakistan (one case). Furthermore, four vaccine-derived polio viruses type 2 (cVDPV2) cases have been reported from the Democratic Republic of Congo [36]. The risk of a visitor to Russia from one of these two polio-affected countries introducing wild polio virus to Russia is considered very low due to the high vaccine coverage and the lack of wild polio virus circulation.

Brazil has been experiencing a major outbreak of yellow fever since 2016. An upsurge of confirmed cases has been reported since December 2017. Between July 2017 and week 17 of 2018, the Ministry of Health in Brazil reported 1 257 confirmed human cases of yellow fever, including 394 deaths [37]. Although reappearance of competent *Aedes* mosquito vectors in the south of Russia has been documented [38], there is a low risk of yellow fever being introduced into Russia through infected travellers with subsequent autochthonous transmission.

There are currently several ongoing outbreaks of measles in Europe, the Americas and Asia. Due to their large geographical spread, there is a moderate to high risk of measles being transmitted during the FIFA World Cup.

Health risks for EU travellers during their stay in Russia

The high incidence of gastrointestinal infections in Russia suggests that further foodborne outbreaks may occur during the 2018 FIFA World Cup. EU travellers to Russia in 2018 may encounter locally endemic infections and specific instances related to mass gatherings (e.g. norovirus, salmonellosis, STEC infections, campylobacteriosis, giardiasis, and viral gastrointestinal illness). Limited foodborne outbreaks due to bacterial and viral infections are expected, especially in the warmest part of the country where high temperatures increase the risk.

The risk of being affected by gastrointestinal illness can be reduced by employing standard hygiene measures: drinking bottled drinks and mineral water, using factory-produced ice cubes or avoiding ice cubes, consuming only thoroughly cooked meat and fish, and washing all fruit and vegetables before consumption. Travellers should consider the general hygienic conditions before consuming local products.

During the 2018 FIFA World Cup, the risk of vector-borne disease infection for EU travellers is likely to be very low.

The risk of being infected with rabies is very low for EU travellers, but can be moderate for unvaccinated travellers visiting rural areas or deprived urban areas where canine vaccination is low. Travellers should avoid contact with stray dogs and cats. If travellers are considering taking domestic animals with them to Russia, they are advised to consult a veterinary practitioner prior to travel.

The risk of tuberculosis depends on TB patients mixing with football fans and spectators, the circumstances of contact (e.g. open air or closed environment) and the infectiousness of the patient. Overall the risk of TB transmission for EU travellers is very low, unless they stay in overcrowded indoor spaces in deprived communities for prolonged periods of time. Given that multi-drug resistant TB is prevalent in Russia, clinicians should be vigilant for any signs or symptoms compatible with TB in travellers returning from the FIFA 2018 World Cup.

The risk of transmission of HIV, hepatitis and other sexually transmitted infections for EU travellers to FIFA 2018 will be determined by the risk behaviour of travellers (e.g. unprotected sex).

There is also a low risk of blood-borne HIV, HBV or HCV transmission, mostly limited to travellers who engage in unprotected sex or injecting drug use.

There is a very low risk of meningococcal disease and other vaccine-preventable diseases for vaccinated EU travellers to Russia.

The risk of influenza transmission is considered low, given the low levels of virus circulation currently observed in the northern hemisphere, including Russia. However, importation of influenza viruses from other continents is possible.

There is a risk of Legionnaires' disease, especially during summer mass-gatherings.

EU travellers requiring hospitalisation for medical care in Russia run the risk of acquiring healthcare-associated infections, including infections caused by antimicrobial-resistant strains. The magnitude of the risk depends on the duration of hospitalisation, the type of care and the reason for hospitalisation.

Visiting or staying in deprived urban areas may increase the risk of communicable disease transmission.

Risk of infection imported from Russia into the EU after return of travellers

The risk of vector-borne diseases being introduced into Europe is very low. There is a low risk of antimicrobial-resistant strains being imported. This risk is higher for EU travellers hospitalised in Russia. The risk of tuberculosis depends on TB patients mixing with football fans and spectators, the circumstances of contact (e.g. open air or closed environments) and the infectiousness of the patient. Given that multidrug-resistant tuberculosis is prevalent in Russia, clinicians should be vigilant for any signs or symptoms compatible with tuberculosis in persons who have visited the 2018 FIFA World Cup, since they may have contracted a resistant form of the disease. There is also a significant risk of measles being imported upon returning home as a result of having contracted the disease from infectious EU travellers visiting Russia from countries where measles transmission is ongoing. The risk of importation for other vaccine-preventable diseases is considered to be very low.

ECDC's mass gathering surveillance support

The overall approach to surveillance during the FIFA 2018 will be 'enhanced business as usual', as was the case during the monitoring of previous mass gathering events. We will adapt ECDC's routine epidemic intelligence process for a defined period of time starting on 7 June (one week before the beginning) and ending on 22 July (one week after the closing ceremony). Routine epidemic intelligence activities will be enhanced by expanding the information sources, using a targeted and systematic screening approach, tailoring tools (i.e. MediSys), determining validation sources, establishing a daily analysis and communication process with regular and specific public health partners, and developing topical reports. ECDC will also issue daily reports of information gathered by scanning a wide range of sources. ECDC will share these reports with the European Commission, WHO headquarters and WHO's Regional Office for Europe. The following criteria will be used to evaluate information regarding public health relevance for the tournament:

- Suspected or confirmed cases of communicable diseases of public health relevance in Russia (risk to EU visitors/participants, risk of importation to the EU)
- Incidents in Russia related to international security, such as the possible intentional release of biological agents or nuclear and chemical events
- Suspected or confirmed cases of communicable diseases of public health relevance for the World Cup in countries with national teams participating in the World Cup and in countries bordering Russia (risk of export to Russia and local spread)
- Incidents in Russia which attract media attention in the EU, such as outbreaks in tourist areas, crowd injuries and the spread of communicable diseases among visitors or participants.

Disclaimer

ECDC issued this risk assessment document on the basis of an internal decision in accordance with Article 10 of Decision No 1082/13/EC and Article 7(1) of Regulation (EC) No 853/2004 establishing a European Centre for Disease Prevention and Control. In the framework of ECDC's mandate, the specific purpose of an ECDC risk assessment is to present different options on a certain matter with their respective advantages and disadvantages. The responsibility on the choice of which option to pursue and which actions to take, including the adoption of mandatory rules or guidelines, lies exclusively with the EU/EEA Member States. In its activities, ECDC strives to ensure its independence, high scientific quality, transparency and efficiency. This report was written under the coordination of an Internal Response Team at ECDC. All data published in this risk assessment are correct to the best of our knowledge on 16 May 2018. Maps and figures published do not represent a statement on the part of ECDC or its partners on the legal or border status of the countries and territories shown.

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Annex

Table A1. Distribution of human West Nile Virus cases reported in Russia by region in 2016 and 2017

Region	Number of cases in 2016	Number of cases in 2017	Five-year average of number of WNV cases
Saint Petersburg**	0	3, all imported	0.8
Voronezh Oblast	8	2 (of these, 1 case imported)	4.6
Lipetsk Oblast	3	1	1.6
Astrakhan Oblast	24 (incl. 1 death)	1	21
Rostov Oblast**	2	1	3.8
Volgograd Oblast**	6	0	12
Krasnodar Krai**	2	0	NA
Saratov Oblast	87	0	26
Samara Oblast**	3	3	5.6
Khanty-Mansi Autonomous Okrug	0	1 (imported)	0.2
Total	135	12	79.6

Adapted from Putintseva EV. et al. [15]

*** region hosting 2018 FIFA World Cup*