Healthy GateWays

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EU HEALTHY GATEWAYS JOINT ACTION
GRANT AGREEMENT NUMBER: 801493

PREPAREDNESS AND ACTION AT POINTS OF ENTRY
(PORTS, AIRPORTS, GROUND CROSSINGS)

CROSS BORDER HEALTH THREATS: STATE OF THE ART REPORT FOR GROUND CROSSINGS

Deliverable 5.1

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Work Package 5: GROUND CROSSINGS

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Content

LIST OF ANNEXES

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

This is Deliverable 5.1 titled "CROSS BORDER HEALTH THREATS: STATE OF THE ART REPORT FOR GROUND CROSSINGS" of *Work Package 5: Ground Crossings* of the HEALTHY GATEWAYS Joint Action. The HEALTHY GATEWAYS Joint Action (Grant Agreement Nr. 801493) has received funding from the European Union (EU) in the framework of the Third Health Programme (2014-2020). A total of 38 authorities from 28 European countries, and the Taiwan CDC participate in the HEALTHY GATEWAYS Joint Action consortium.

The HEALTHY GATEWAYS Joint Action aims to support cooperation and coordinated action of Member States (MS) to improve their preparedness and response capacities at points of entry (PoE). This includes ports, airports and ground crossings, in preventing and combating cross-border health threats from the transport sector.

The Joint Action will produce guidelines, catalogues of best practices and validated action plans to be implemented by Member State health authorities at the operational level in the field of transport, covering all types of health threats, risk communication, advice for public health event management and contingency planning. The action will also support the rapid exchange of information in the event of cross-border health risks, using electronic means via established communication networks for PoE. Online and face-to-face training on contingency planning and management of events (due to infections, vectors, chemical, environmental, and other agents) at PoE will be provided at the European, national and local level.

In the event of a public health emergency of international concern (PHEIC), the Joint Action will move from its inter-epidemic mode to an emergency mode, in order to support the coherent response of MS according to Decision No 1082/2013/EU and implementation of temporary recommendations issued by the World Health Organization (WHO) according to International Health Regulations (IHR).

The Joint Action is expected to improve coordinated cross-sectoral actions to control infectious disease transmission and possible vectors for pathogens on ground transportation, on ships, and in aircrafts, in case of a serious cross-border threat to health affecting or inherently coming from the transport sector.

1.1 PORTS, AIRPORTS AND GROUND CROSSINGS - A GENERAL COMPARISON

In the context of points of entry, ground crossings differ from ports and airports. A great amount of work has been done by the SHIPSAN and AIRSAN consortiums to better understand and improve the capacities of ports and airports, respectively. This work can be considered a stepping stone that provides not only a framework, but also directly applicable information that can be translated to improve capacities at ground crossings. However, there are also notable differences between the contexts and special elements unique only to the ground crossings setting, which would have to be explored and characterised in-depth. Through the International Health Regulations (IHR), it becomes clear that ground crossings are indeed treated differently: in the IHR, States Parties are requested to designate airports, ports and where justified for public health reasons, may also designate ground crossings (Art. 21). It can be interpreted from this that the decision to designate ground crossings is not requested expressly, and the effort to improve capacities at ground crossings in order to be able to designate them, is conditional on obtaining a more local understanding of passenger/cargo flow, risks, and possibilities to mitigate risks through designating a specific ground crossing.

There is no readily available data source allowing us to characterise and compare the total passenger/cargo flow through ports, airports and ground crossings in the European Union. However, several characteristics of the three types of PoE can be summarized. All three PoE types allow for the crossing of passengers, baggage, cargo, containers, conveyances, goods, and postal parcels. Furthermore, for all three types of PoE, a mixture exists in terms of the origin of what is passing through, where the origin may be a neighbouring country (short-distance travel and transport) or a non-neighbouring country (medium and long-distance travel and transport). It is likely that ground crossings are specific in terms of a higher proportion of short-distance travel and transport involved, and therefore the epidemiological situation in a country adjacent to a ground crossing point of entry is of higher relevance. Moreover, a number of ground crossings may also be places of very frequent crossing by residents of the border areas, for economic or other reasons. In addition, while the main transport vehicles (ships and airplanes) only go as far as a certain port/airport, vehicles crossing a ground crossing may move into a country and the task of mitigating possible risks associated with these vehicles necessitates activities not only at the ground crossing. For example, vector control related to lorries may not necessarily be best done at a ground crossing – it may be more efficient to establish vector control measures at facilities where large numbers of lorries park, load and offload cargo. Yet another element that makes ground crossings

different is the diminished possibility to plan ahead – knowledge of the source of an arriving vehicle is central to prioritization of measures. At ground crossings, source information only becomes available as a vehicle approaches, and is not available beforehand.

1.2 SCOPE OF WORK PACKAGE 5: GROUND CROSSINGS

The HEALTHY GATEWAYS Joint Action is the first attempt to characterise European Union (EU)/European Economic Area (EEA) outside ground crossings in terms of the risk of public health threats like infectious disease/vector spread and chemical events, as well as in terms of the operational possibilities to mitigate this risk.

1.3 WHO AND WHAT TRAVELS THROUGH GROUND CROSSINGS?

Publicly available data on vehicle/person flow through ground crossings is relatively sparse. There is no centralized EU source of information for this. Country-specific data from certain ground crossings can include information on total vehicle/person flow for some time periods. This data is published to provide an overall impression of the work burden for employees at the crossings, and is not sufficiently informative in terms of the origin of people passing, or type and origin of passing cargo. The lack of a public EU-wide data source on ground crossings and their respective importance in terms of cargo/vehicle/person flow means that mapping all ground crossings and obtaining information on them may require extensive review of national/subnational sources in different languages, and possibly may have to involve specifically obtaining additional information for some of the crossings.

At this point, generally, we can assume that ground crossings are the route through which numerous lorries and trains with international cargo pass. Additionally, it can be assumed that ground crossings are an important route for tourists from neighbouring countries during tourist seasons. People, especially those residing in border regions, may pass back and forth through ground crossings regularly for economic and personal reasons. Ground crossings can also be used by people travelling for work and by asylum-seekers. While most populations travelling through ground crossings are not well characterised, the massive displacements of people related to conflict and insecurity in recent years have gained serious international attention, and brought about several studies to characterise asylum-seeker/refugee populations. Additionally, work was carried out to enhance the surveillance of infectious and other diseases in this at-risk group.

While asylum-seekers/migrants are likely a very minor proportion of the total flow through ground crossings, the lessons learned from working in the migrant context may also be informative for ground crossings. It must be noted that a lot of the work with asylum-seekers/migrants has to do less with the crossings themselves, and more with providing healthcare to the migrants at the points where they reside in the countries they arrive in. Nevertheless, this Work Package envisions an overview of lessons learned about migrants and asylum seekers, in order to identify experiences and knowledge which may be applicable to the ground crossing context.

1.4 VECTORS AND GROUND CROSSINGS

The geographic distribution of vectors which can carry infectious disease is a serious issue, as it increases the risk of local transmission of a number of vector-borne infections. This is the main reason for serious vector control measures, currently implemented at airports and ports. Effective vector surveillance control at/near ground crossings and in bordering regions can be central to limiting the spread of dangerous vectors, and is therefore of high relevance to this Work Package. For this reason, the Work Package envisions a dedicated review of current vector control practices and possible solutions in this context.

1.5 LEGAL BASIS FOR INFECTIOUS DISEASE CONTROL AND INTERNATIONAL DATA SHARING

Infectious disease prevention and control within and outside EU/EEA ground crossings is regulated through a patchwork of country-specific legislative documents, and any lessons learned through this Work Package can only turn to practical solutions if we take into account the legal regulations in the respective countries in the context of EU legislation. It is widely agreed that events of international infectious disease transmission can be tackled more effectively if it is possible to quickly exchange information among affected states. This is relevant to any event of international infectious disease transmission, including events of disease spread through people/cargo/vehicles passing ground crossings. International data exchange is a complex legal/ethical issue and needs to be well characterised and understood legally by all involved stakeholders. This is why this Work Package envisions a dedicated review of relevant legal documents.

2 BACKGROUND STATISTICS

The number of people travelling constantly increases worldwide. According to Airports Council International (ACI), in 2018 air passenger traffic worldwide reached the level of 8.8 billion. In the same year, world cargo transport increased by 3.2 percent compared to 2017. In Europe in 2018, the number reached 2.3 billion passengers (***Source:*** *https://www.aci-europe.org).*

In 2018, all Polish airports handled a total of 45.7 million passengers, representing a 14% increase compared to 2017 (Polish Civil Aviation Authority data). Despite the continuous increase in air passenger traffic in both the world and Europe, passenger traffic on the Polish land border with Russia, Belarus and Ukraine - which is a part of the EU's eastern border - still remains at a high level, which is up to 75% of air passenger traffic in Poland. However, the number of passengers crossing the Polish part of the eastern EU border decreased slightly in the last few years, despite the abolition of the visa requirement for Ukrainian citizens travelling to the EU from 11 June 2017. The number of passengers and means of road transport crossing the Polish eastern border are presented in **Table 1** and **Table 2** below

(***Source:*** *https://www.strazgraniczna.pl/pl/granica/statystyki-sg/2206,Statystyki-SG.html).*

Table 1: Number of Passengers - border traffic

	2015	**2016**	**2017**	**2018**	**First half of 2018**	**First half of 2019**
Russia	6 098 860	4 265 117 (-30%)	3 905 325 (-8%)	3 534 899 (-9%)	1 761 909	1 662 916 (-6%)
Belarus	7 817 371	7 925 167 (+1%)	9 262 851 (+17%)	8 955 437 (-3%)	4 273 163	4 143 096 (-3%)
Ukraine	22 634 438	22 634 438 (+7%)	22 853 688 (+1%)	21 586 753 (-6%)	10 035 870	10 018 614 (-0.2%)

Table 2: Number of road transports (passenger cars, buses, trucks and other means of road transport)

Ogółem	**2015**	**2016**	**2017**	**2018**	**First half of 2018**	**First half of 2019**
Russia	3 792 579	2 535 695 (-33%)	2 221 856	2 030 561 (-9%)	1 008 078	952 506 (-6%)
Belarus	3 439 032	3 589 971 (+4%)	4 398 859	4 256 828 (-3%)	2 094 055	1 983 166 (-5%)
Ukraine	7 023 008	7 228 090 (+3%)	6 969 803	6 005 765 (14%)	3 057 245	2 398 296 (-22%)

There are different types of ground crossings, which can be illustrated by the example from Lithuania and Poland. Movement between Poland and Ukraine, Belarus, the Russian Federation and Lithuania and Belarus and the Russian Federation (e.g. across the eastern part of the EU border) takes place through 37 land crossings:

- ☐ There are 12 land crossings between Poland and Ukraine, of which 6 are railway crossings, 8 are road crossings and 1 is a pedestrian crossing. Of all the crossings between Poland and Ukraine, 9 of them are passenger type and 10 are cargo type. Furthermore, 10 border crossings operate 24/7.
- ☐ There are 11 land crossings between Poland and Belarus, of which 5 are railway crossings and 6 are road crossings. Of all the crossings between Poland and Belarus, 7 are of passenger type and 8 are cargo type. Furthermore, 8 border crossings operate 24/7.
- ☐ There are 17 land crossings between Lithuania and Belarus, of which 3 are railway crossings and 14 are road crossings.
- ☐ There are 6 land crossings between Poland and the Russian Federation, of which 3 are railway crossings and 3 are road crossings. Of all the crossings between Poland and the Russian Federation, 4 of them are passenger type and 6 are cargo type. Furthermore, 6 border crossings operate 24/7.
- ☐ There are 6 land crossings between Lithuania and the Russian Federation, of which 1 is a railway crossing, 4 are road crossings and 1 is a road/railway crossing.
- ☐ Of the 12 land crossings operating between Poland and Ukraine, 6 of them may introduce foodstuffs and materials or products intended to come into contact with food, and as such are subject to border sanitary control on the territory of the European Community.
- ☐ Of 11 land crossings operating between Poland and Belarus, 4 of them may introduce foodstuffs and materials or products intended to come into contact with food, and as such are subject to border sanitary control on the territory of the European Community.
- ☐ Of the 6 land crossings operating between Poland and the Russian Federation, 4 of them may introduce foodstuffs and materials or products intended to come into contact with food, and as such are subject to border sanitary control on the territory of the European Community.

These types of crossings are specified by the Regulation of the Minister of Health on the list of border crossing points appropriate for conducting border sanitary control (***Source:*** *Rozporządzenie Ministra Zdrowia w sprawie wykazu przejść granicznych właściwych dla przeprowadzania granicznej kontroli sanitarnej*).

The main document describing all border crossings in the European Union is a list of border crossing points referred to in Article 2(8) of Regulation (EC) No 562/2006 of the European Parliament and of the Council of 15 March 2006 establishing a Community Code on the rules governing the movement of persons across borders (Schengen Borders Code) (2006/C 247/04) (***Source:*** *https://eur-lex.europa.eu/legal-content/PL/TXT/PDF/?uri=CELEX:52007XC0706(08)&from=PL).*

Based on the list of external eastern European Union points of entry from the European Border and Coast Guard Agency (Frontex) in 14 countries (Bulgaria, Croatia, Estonia, Finland, Greece, Hungary, Latvia, Lithuania, Norway, Poland, Romania, Slovakia, Slovenia), there are 479 operating ground crossings including: Road 323; Railway 100; Pedestrian 1; Highway 3; Not specified 12; Port 16; River 7; River port 8; River-Ferry 4; Road and Railway 1; Road and Railway and Ferry 1.

The list of external eastern European Union points of entry developed based on the list of all land Border Crossing Points of the European Union from Frontex can be found in **Annex A.**

3 IDENTIFICATION OF GOOD PRACTICES AND EVENTS

In an attempt to identify good practices and existing capacities specifically for ground crossings alongside the external border of the EU, a literature search has been performed. However, information about the topics described above is scarce within existing literature, as quite often the public health event linked to a ground crossing can be of limited recognition. For this purpose, HEALTHY GATEWAYS developed a survey to help identify and evaluate the existing risk in this field.

3.1 SURVEY

3.1.1 Survey methodology

The *National Institute of Public Health (NIPH-NIH)*, Poland and the *National Public Health Centre under the Ministry of Health (NVSC)*, Lithuania (co-leaders of HEALTHY GATEWAYS Work Package 5: ground crossings) prepared a questionnaire aimed at identifying best practices implemented at designated points of entry (ground crossings) in Europe. This survey is part of the HEALTHY GATEWAYS Joint Action, which aims to improve preparedness and response regarding cross border health threats, and enhanced implementation of the IHR core capacities for designated PoE in Europe.

The questionnaire includes 28 single, multiple choice and open questions related to preparedness and response to biological and chemical threats at ground crossings; communication; core capacities implementation; detection, surveillance and management of public health events; and vector surveillance. The questionnaire can be found in **Annex B.**

The above-mentioned questionnaire was developed in the EU Survey system. EU Survey is an online system for generating and publishing forms intended for example, to conduct user satisfaction surveys or public consultations; it is available free of charge for general use (EU Survey is fully open-source and is published under the EUPL license).

Before disseminating the questionnaire to recipients, NVSC (Lithuanian co-leader of HEALTHY GATEWAYS ground crossings Work Package) conducted a pilot test in the Panemune crossing point (Lithuania-Russia) and the Debeli Brijeg crossing point (Montenegro–Croatia).

The questionnaire was also pilot tested with Frontex. Following this, Frontex officially distributed the survey (accompanied by an official letter from the Frontex

Director of Capacity Building Division) to Frontex' national border guarding partner authorities of all related EU Member States of the Eastern European land border. The questionnaire was sent to (National Frontex Points of Contact - NFPoC): Bulgaria, Estonia, Finland, Greece, Hungary, Lithuania, Latvia, Norway, Romania, Slovakia and Poland.

The questionnaire was further sent by NIPH-NIH (Polish co-leader of HEALTHY GATEWAYS ground crossings Work Package) to six "Border Sanitary - Epidemiological Stations" in Poland: Dorohusku, Koroszczynie, Przemyślu, Elblągu, Suwałkach and Hrebennem.

The questionnaire was launched on 10 September 2019 and closed on 31 September 2019, with responses continuing to be received approximately one month after the requested deadline for feedback. As of 1 December 2019 a total of 60 responses were recorded from Bulgaria, Estonia, Germany, Greece, Latvia, Lithuania, Norway, Poland, Romania, Serbia and Slovakia.

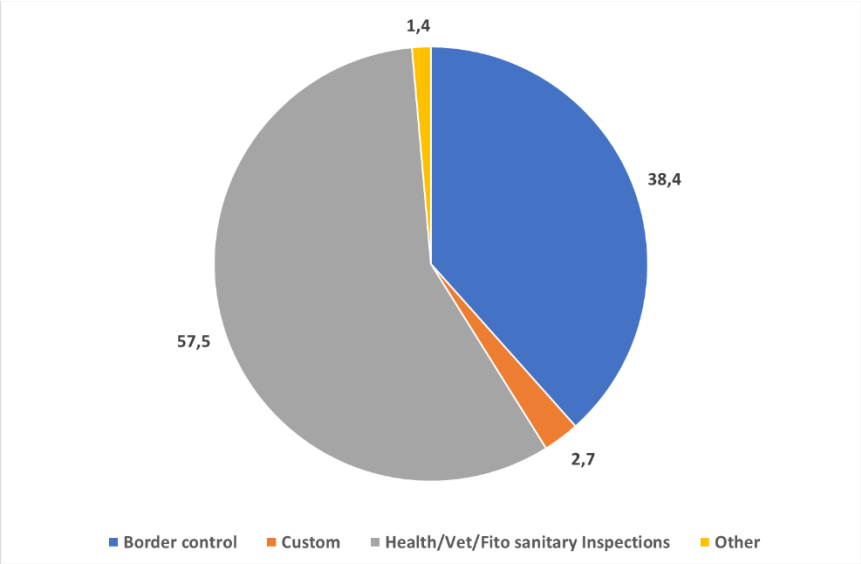
3.1.2 Survey results

A total of 10 countries (Norway, Estonia, Latvia, Lithuania, Poland, Slovakia, Romania, Bulgaria, Serbia, and Greece) completed the questionnaire, which was answered by different stakeholders related to 71 ground crossings (**Figure 1**). It is notable that one stakeholder could provide responses for more than one ground crossing.

Figure 1: Distribution of the filled questionnaires from ground crossings by countries

Most of the questionnaire respondents were from Health, Veterinary or Fito sanitary inspections (**Figure 2**). It is also noteworthy that representatives from the border control sector also actively participated in the survey.

Figure 2: Distribution of the stakeholders by sector, in percent



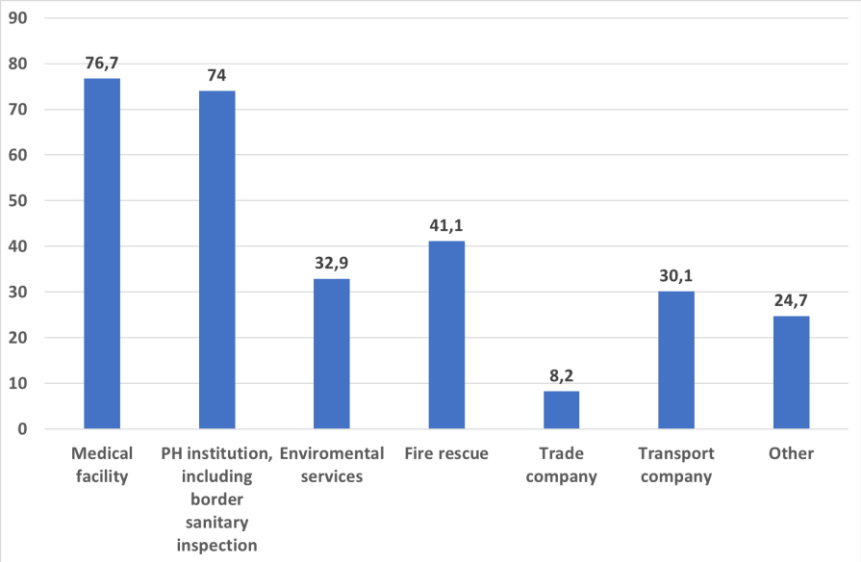
Most of the respondents pointed out that there were no public health threats during the last 5 years at the ground crossing related to communicable diseases or chemical events. Based on responses received in the questionnaire, during the previous 5 years only 7 public health threats related to communicable diseases were detected (4 measles, 1 tuberculosis, 1 unknown etiology and 1 case of *Salmonella spp*. detection in imported egg products). All cases of communicable diseases were identified as single cases. Three measles cases were detected by staff of a national authority, while 1 measles case, tuberculosis and communicable disease with unknown etiology were detected by border control staff. The case of *Salmonella spp.* in imported eggs was detected by staff of a Food and Veterinary service. Questionnaire respondents also answered that during the last 5 years, 1 public health threat at the ground crossings related to chemicals was detected (detected by staff of Border Control and Customs).

According to the questionnaire responses, there were 3 times when neighbouring countries' institutions associated with ground crossings informed the respondent (1 Bulgaria and 2 Poland) about suspected public health threats related to communicable diseases, during the last 5 years at the ground crossings. Furthermore, there were 2 instances when persons crossing the border reported to the respondent (1 Bulgaria and 1 Lithuania) about public health threats related to communicable diseases.

In case of public health threats, most of the ground crossings would contact medical facilities, public health institutions including border sanitary inspection, fire

rescue and environmental service (**Figure 3**). A quarter of ground crossings mentioned that in case of public health threats, they would contact other institutions (e.g. municipalities).

Figure 3: The institutions in which ground crossings would contact in case of public health threats, in percent



A total of 63% of the ground crossings pointed out that they have a plan/procedure - Standard Operating Procedures (SOPs) - for dealing with public health threats related to communicable diseases at the ground crossings, while 37% reported they have a plan/procedure (SOPs) for dealing with public health threats related to chemicals at the ground crossings. According to the plan/procedure (SOPs), 56.2% of ground crossings have to report and 53.4% have to record the event related to communicable diseases, while 34.2% of ground crossings have to report and 31.5% have to record the event related to chemicals.

According to the plan/procedure (SOPs), 54.8% of ground crossings would contact anyone to support them in case of communicable diseases, while 28.8% would contact anyone to support them in case of an event related to chemicals.

Approximately half (52.5%) of the ground crossings responded that according to their plan/procedure (SOPs), they would obtain information about the possible public health threats from the neighbouring countries, and 89.3% responded they would obtain information from other institutions from their countries.

It is noteworthy that less than one-third of ground crossings test their plan/procedures and test them in collaboration with other institutions (32.9% in case of communicable diseases and 20.5% in case of chemical events). An even smaller portion of ground crossings indicated that they test their plan/procedures in collaboration with

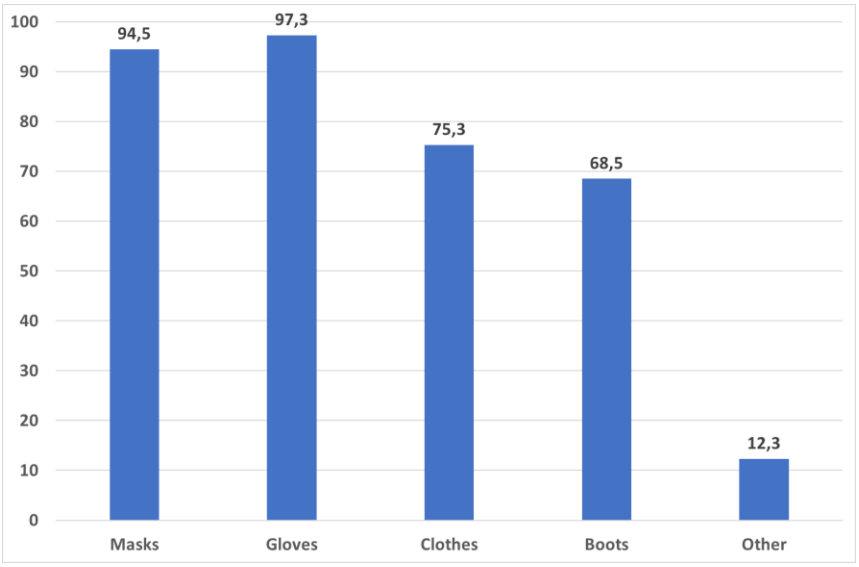
neighbouring countries (8.2% in case of communicable diseases and 5.5% in case of chemical events).

It should also be noted that there are not enough training sessions organized for staff responding to public health threats at ground crossings: only 39.7% of ground crossings noted that trainings were provided to staff in case of communicable diseases and 17.8% reported that trainings were provided to staff in case of chemical events. Around half of the ground crossings noted that they believe these kinds of trainings would be useful for staff: 54.8% in case of communicable diseases and 45.2% in case of chemical events.

More than half (57.5%) of ground crossings do not have any agreement with neighbouring points of entry for exchange of information related to public health threats. Only 13.8% of ground crossings responded that they have a signed agreement (e.g. Memorandum of Understanding) and 28.8% responded that they have an informal agreement. This shows that there is need to strengthen cooperation and collaboration between stakeholders at ground crossings.

Almost all (more than 95%) of ground crossings noted that they have masks and gloves available at the working place **Figure 4**. Clothes are available at 75.3% of ground crossings, boots at 68.8% of ground crossings and other equipment (glasses, disinfectants etc.) at 12.3% of ground crossings.

Figure 4: Personal protective equipment (PPE) available at working place, in percent



A total of 60.3% of ground crossings are trained in how to use personal protective equipment (PPE) in case of communicable diseases while 34.2% are trained in the use of PPE in case of chemical events. More than one-third (69.9%) of ground crossings noted

that they are not in a general position to provide a sufficient amount of PPE, possibly also to neighbouring but equally exposed services.

Furthermore, 60.3% of ground crossings have a possibility within their institution to collect data if needed for contact tracing in case of communicable disease exposure, while 21.9% of ground crossings do not know.

Seven ground crossings (9.8%) provide vector control (e.g. mosquito surveillance) around the point of entry: 3 Bulgaria, 2 Estonia, 1 Latvia and 1 Slovakia. In relation to vector control at the ground crossings, 26.6% of ground crossings do not have any information.

Based on the questionnaire, 23 countries (32.4% of ground crossings) noted that they have a designated area to isolate, assess and care for suspected or ill persons crossing the border, specifically: 13 Poland, 1 Bulgaria, 3 Estonia, 3 Lithuania, 2 Romania and 1 Slovakia.

Furthermore, 4.1% of ground crossings have practice/experience at the point of entry related to management and protection against public health threats which was considered effective (e.g. isolation of SARS suspected case, trainings by Health Authority etc.).

3.2 LITERATURE REVIEW

Scoping literature review on public health events related to ground crossings

EU HEALTHY GATEWAYS JOINT ACTION PREPAREDNESS AND ACTION AT POINTS OF ENTRY (PORTS, AIRPORTS, GROUND CROSSINGS)

WORK PACKAGE 5: GROUND CROSSINGS

3.2.1 Background

In the last decade there has been a lot of work done with regard to improving preparedness and response capacities at airports and ports, while the work on ground crossings is still in its infancy. Of note in this area is the work done under the collaborative European project REACT (Response to Emerging infectious diseases: Assessment and development of core capacities and tools) within the Health Programme 2008-2013 of the European Commission, where a work package specifically focused on exploring contact tracing in ground transport. Under this package, risk assessment tools were developed to aid in deciding whether the resource-intensive process of contact tracing of passengers on public ground transport is justified in case of signals related to measles, meningococcal disease and tuberculosis. To develop the tools, the limited available evidence from scientific literature was combined with expert knowledge. An overall conclusion was that few circumstances would justify contact tracing in ground transport, considering the logistical burden and likely limited effectiveness of such activities[2,3]. Public ground transport is one of the important components related to international ground crossings, and the work already done in this area is very relevant to the topic. At the same time, apart from the work done on public ground transport, other aspects of possible disease spread and its control at ground crossings have not been explored in-depth so far.

Work Package 5 of the HEALTHY GATEWAYS Joint Action relates to ground crossings, also referred to as land/ground points of entry (PoE) and the challenges and opportunities for tackling threats to public health through actions around ground crossings. It includes broad exploratory tasks that will facilitate the collection of a wide range of relevant

[2] Mohr O, Askar M, Ermes J, Schink S, Eckmanns T, Poggensee G, Krause G. Contact tracing risk assessment profile (CT-RAP) for public ground transport, Robert Koch Institute, Available at: https://www.rki.de/EN/Content/Institute/DepartmentsUnits/InfDiseaseEpidem/Div32/React/Work/wp7/WP_7_tool1.pdf?__blob=publicationFile, obtained on: 11/12/2019

[3] Mohr O, Askar M, Schink S, Eckmanns T, Krause G, Poggensee G. Evidence for airborne infectious disease transmission in public ground transport – a literature review, Euro Surveill, 2012, 17(35). Pii: 20255

evidence and documents to improve knowledge on the current issues faced at ground crossings, as well as solutions that have been developed by different countries to tackle threats related to ground crossings. The literature review described here is part of this exploratory element of Work Package 5.

The aim of this literature review is to identify and characterise public health events related to the spread of infectious diseases or other health threats through ground crossings, and describe the issues faced in tackling such events and the solutions identified as effective by the involved stakeholders. The literature review will explore the information in published literature related to such events not only in Europe, but also across the world. The identified issues, solutions, as well as opportunities for improvement, will be taken into account.

3.2.2 Definitions

Ground crossing / Ground/Land point of entry (PoE)	A ground passage for international entry or exit of travellers, baggage, cargo, containers, conveyances, goods and postal parcels, as well as agencies and areas providing services to them on entry or exit
Ground transport	Ground transport for the purposes of this literature review refers to intercity transport that can also cross borders and transports people and cargo. It includes busses, cars, trains, and lorries
Infectious disease	This literature review focuses on infectious diseases in humans, including zoonoses
Public health event related to ground crossing	A public health event related to ground crossings, for the purposes of this literature review, is defined as an event of transmission/suspected transmission of an infectious disease/infectious disease vector caused by/suspected to be caused by movement of people/animals/items/ground transport through a ground border crossing
Public health event related to ground transport	A public health event related to ground transport, for the purposes of this literature review, is defined as an event of transmission/suspected transmission of an infectious disease/infectious disease vector in ground transport. Such an event may be a public health event related to a ground crossing or may not be clearly related to a ground crossing
Event description	A peer-reviewed publication detailing a public health event related to ground crossings or ground transport from the epidemiological/public health perspective, or another perspective
Guideline	A publication providing guidelines applicable to tackling public health events related to ground crossings or ground transport
Standard operating procedure	A standard operating procedure related to work that can help tackle public health events related to ground crossings or ground transport
Report	An epidemiological report, detailing information that can help tackle public health events related to ground crossings or ground transport
Stakeholders	For the purposes of this review stakeholder is defined as international agencies which have long-standing experience with tackling international disease threats and field work with mobile populations (WHO, ECDC, US CDC, MSF, Red Cross, UNHCR, UNESCO), and national public health agencies from the member states of the European Union/European Economic Area

3.2.3 Objectives

The main objective is to conduct a scoping review of published literature related to public health events related to ground crossings and ground transport, in order to describe the events in terms of time/place/person and to list the issues and possible solutions, as reported in the published studies.

A second objective is to conduct an additional manual review to identify guidelines/SOPs/reports, published by stakeholders.

3.2.4 Research questions

1. What is the number of public health events related to ground crossings and/or ground transport described in literature?
    a. In which countries did these events occur?
    b. When did these events occur?
    c. Which disease/toxin was causing the event?
    d. What were the characteristics of the affected population?
2. What are the problems identified in published literature related to tackling public health events at ground crossings?
3. What are some prerequisites/solutions identified in published literature and suggested in guidelines/SOPs for tackling public health events at ground crossings?

Note: while the primary objective is the exploration of public health events related to ground crossings, knowing which events have been described on ground transport (e.g. busses, trains) can give us the insight, what could be a focus at ground crossings

3.2.5 Evidence retrieval and assessment

Information sources and overall search strategy approach

Peer-reviewed publications were identified through selecting among available original research records from the Scopus database (including automated Cochrane database search through Scopus). The search strategy combined the overall concepts of "ground crossings/ground transport" and "infectious disease" in Scopus-defined subject areas relevant to the epidemiological/public health perspective. The term search was applied to titles, abstracts and keywords describing the publications. The results were limited to records published between 2014 and 2018. The complete search strategy is presented in **Annex C**.

High-quality review/summary articles that were identified were to obtain additional original data (via references).

Data management

The search results were managed in Microsoft Excel. As the search was through one database, removal of duplicates was not necessary. A list of all records at every stage (retrieved, excluded at first selection step, excluded at second selection step) was kept.

Selection process

First selection step - title screen

Titles were excluded if there was clear evidence that the exclusion criteria were met. The title screen was carried out by three reviewers, and 200 randomly selected articles from the search results were screened by all three reviewers, who then compared their decisions in order to synchronize decision making and make sure the inclusion/exclusion criteria were applied correctly. After this, each reviewer went further with the selection from an individual set of titles from the search results. Reviewers met several times to discuss their selection decisions, and decide how to approach articles where there were doubts.

Second selection step – abstract screen

Abstracts were only excluded if there was clear evidence that the exclusion criteria were met. If an abstract was not available for a publication, included during the title screen, the publication was automatically included for full-text screen. The abstract screen was carried out by two reviewers, and 10% (26) randomly selected articles from those which passed the first selection step were first screened concurrently by the two reviewers, who compared their decisions in order to synchronize decision making and make sure the inclusion/exclusion criteria were applied correctly. After this, each reviewer went further with the selection of an individual set of abstracts from the search results. Reviewers met to discuss their selection decisions and decide how to approach articles where there were doubts.

Third selection step – full text screen

The full text screen was carried out by two reviewers who discussed their decisions. For each full text which was excluded, the reasons for exclusion were to be described in written form (Data not shown).

Inclusion/exclusion criteria

Inclusion criteria:

The publication/guideline/SOP must:

- Describe a public health event related to ground crossing or ground transport OR include epidemiological information and guidelines that may help address public health events related to ground crossings
- Be published between 01/01/2014 and 31/12/2018
- Examples of articles that do not expressly describe public health events related to ground crossings, but may include epidemiological information and guidelines that may help address public health events related to ground crossings are:
    - Studies of disease spread/vector structure and population at ground border areas
    - Guidelines developed through the work (reviews, meetings etc.) related to airports and ports

Exclusion criteria

The publication/guideline/SOP is excluded if:

- Does not clearly describe a public health event related to ground crossing OR include epidemiological information and guidelines that may help address public health events related to ground crossings
- Is not published between 01/01/2014 and 31/12/2018
- Is an article describing a screening for risk factors for infectious disease or infectious disease among a general group of travellers (i.e. migrants, tourists etc.)
- Describes separate events of transmission related to air transport or ports
- Describes specific events of cross-border transmission between countries that have no land border

Publications in languages other than English were excluded.

A note on publications about migrants: A number of publications and projects in recent years have explored the topic of migrant health, specifically focusing on asylum-seekers and refugees. For the purposes of this literature review, we only included publications about migrants if they clearly related to public health events at ground crossings or ground transport.

A note on publications related to animals: Publications related to animals were to be included if the diseases they referred to were zoonoses. Publications on influenza in animals, which is a known zoonotic threat, were included if they related to activities specifically at ground borders/land border areas, related to the surveillance and control of influenza in animals.

3.2.6 Data extraction

Publications describing events of transmission were grouped by event, where an event was defined as the transmission of infectious disease across the same land borders within the same time period (including continuous transmission spanning a number of years). For each event, we extracted information as shared by the authors, on context (type of border, population movement dynamics, operational disease control issues) and on cross-border or border-region effort towards a better understanding of transmission, or towards improving prevention, control and treatment.

Publications not directly linked to specific events, which nevertheless detailed efforts to assess and improve preparedness relevant to ground crossings and ground transport were also summarized.

In the data extraction process, effort was made to select only information relevant to the ground border / ground transport context. The text was extracted as much as possible directly as provided by the authors, to ensure that their perspectives and interpretations are accurately noted. At the same time, for clarity and consistency within the extracted text, as well as brevity, additions and corrections from the authors of this systematic review were added. Sub-referencing appearing in the original publications was removed from the extracted texts.

3.2.7 Results

Publication screening summary

A total of 7824 publications were identified through applying the search strategy in Scopus, of which 30 full texts were selected for data extraction **Figure 5**.

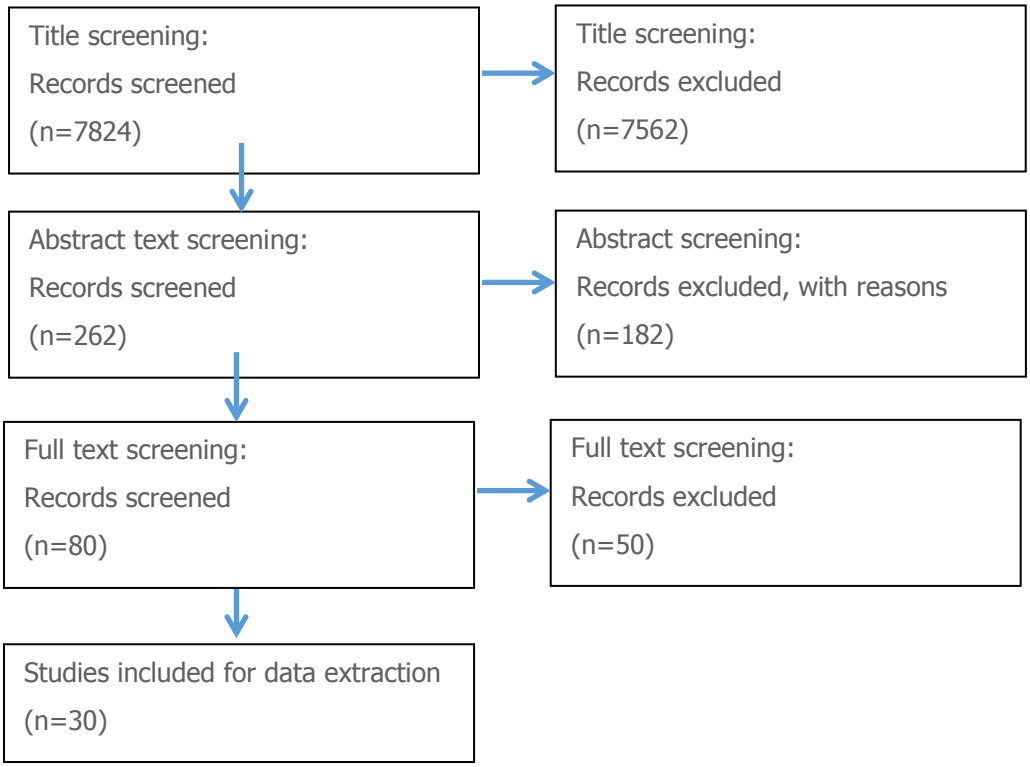


Figure 5: PRISMA chart, summarizing the numbers of included and excluded publications at each selection step

Identified events

Of the 30 publications selected for final data extraction, 23 constituted event descriptions, detailing the transmission of infectious diseases through land borders. Of the identified publications, eight focused on tuberculosis, five on malaria and three each on HIV and Ebola, with single publications focusing on other diseases. The 23 event descriptions detailed 17 events, where an event was defined as the transmission of the same infectious disease across the same land borders within the same time-period (including continuous transmission spanning a number of years). For some events, there was more than one publication, providing different perspectives.

For each event, the specific disease, involved bordering countries, border context and cross-border measures towards better prevention, control and treatment, as described by the authors of the publications, are summarized on the following pages. The descriptions are provided as extracted from the publications (see data extraction section 3.2.6 for details).

In the identified publications, five events (No. 1-5) involved malaria, four events (No. 6-9) involved tuberculosis, two events (No. 10-11) involved HIV, two events (No. 12-13) involved cholera, and one each involved: Ebola (No. 14), Highly pathogenic avian influenza (No. 15), Rocky Mountain spotted fever (No.16), and Listeria monocytogenes and Staphylococcus aureus (No. 17). No events related specifically to ground transport were identified.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
1	malaria	Angola, Namibia	2014-2016	18_697
Context				

The study focuses on the border regions adjacent to the border between Namibia and Angola, characterised by a high degree of cross-border human mobility. Malaria priorities in neighbouring countries differ. Namibia has almost eliminated malaria, with the last remaining hotspots at the borders with Angola and Zambia. Angola is still endemic in most parts, and the relative burden of malaria at the border with Namibia is lower than in other Angolan regions.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

A cross-border community-based malaria prevention programme was launched at the Angolan–Namibian border in 2012, as part of the Trans-Kunene malaria initiative - an agreement between the governments of Angola and Namibia to develop, among others, an evidence base for cross border malaria control strategies. The malaria prevention programme involved the distribution of long-lasting insecticidal nets and behaviour change programming. In Namibia, the programme reduced the odds of fever by 30% in areas without simultaneous Angolan efforts, and by an additional 62% in areas with simultaneous Angolan programmes. In Angola, the programme was highly effective in areas within 5 km of Namibian programmes, but mostly ineffective in areas closer to inland Angolan areas without concurrent anti-malarial efforts.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
2	malaria	Cambodia, Thailand, Laos, Vietnam	2013-2014	15_273
Context				

The study focuses on people crossing land border PoE between Cambodia and its neighbouring countries Thailand, Laos and Vietnam. There is a high degree of cross-border human mobility between Cambodia and its neighbours.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

Synchronized screening with a rapid diagnostic test (RDT), complemented with RT-PCR, was carried out at selected PoE on each land border. The screening helped to identify the Cambodia-Laos border as one with the highest relative cross-border malaria transmission. Importantly, the RDT screening method also identified asymptomatic malaria cases, which are important for transmission. RDT, which could be carried out at PoE, had lower sensitivity, in comparison to RT-PCR (which was carried out in a laboratory away from the PoE).

Event No.	Infectious disease	Affected bordering countries	Studied period	References
3	malaria	China, Myanmar	2011-2014	16_162
Context				

The study focuses on case statistics from China's Yunnan province at the border with Myanmar. The China Myanmar border is characterised as one of increasing cross-border human mobility Of the total malaria cases in China from 2011 to 2014, 96% (1878 cases) occurred in Yunnan province. Of the 1878, 1357 (72%), were imported. 99% of the imported cases came from neighbouring countries. Of imported cases from neighbouring countries, 95.9% came from Myanmar, and 4.1% from Laos. During the same period, locally-transmitted malaria cases in Yunnan decreased substantially from 315 cases in 2011 to 28 cases in 2014.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

The publication shortly mentions that joint and cross-border prevention and control strategies exist in Yunnan province. Authors recommend cross-border cooperation to achieve elimination goals.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
4	malaria	Ecuador, Peru	1990-2012	16_134
Context				

The study focuses on El Oro (southernmost Ecuador coastal province, bordering Peru) and Tumbes (northernmost Peru coastal province, bordering Ecuador). A surge in transmission was observed from mid-1980s to early 2000s. Malaria was later successfully controlled. At the time of publication, El Oro had been free of local malaria transmission since 2011, with only one imported case in 2014, and In Tumbes, the last case of locally transmitted malaria was reported in 2012.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

The study provides a historical reconstruction, based on information provided by experts working in the border region. In response to the malaria upsurge, local leaders from El Oro and Tumbes joined together in the mid-1990s to forge an unofficial binational collaboration for malaria control. Over the next 20 years, local public health leaders from both countries worked closely, strengthening surveillance and response strategies, sharing resources, conducting operational research to inform policy, and implementing novel interventions to halt transmission. From the perspective of regional experts, close relationships at the local operational level were central to the success of the malaria control programmes.

In the context of insufficient resources at the border areas of Ecuador and Peru, experts reported significant benefits from sharing resources within an evidently cohesive binational team. On one hand, sharing of medication, insecticides, and personnel allowed them to buffer an unpredictable supply chain and resource limitations. On the other, the two sides collaborated in operational research, trying out and evaluating context adapted malaria prevention and control approaches at both sides of the border, and sharing information and findings. The knowledge, gained by experts in the area, was appreciated at the national level in both Peru and Ecuador, and the evidence generated in the border regions impacted national policies in both countries, including the adaptation of policies to emerging resistance to antimalarial drugs. According to local experts' views,

a small team of dedicated, long-term public health practitioners can be flexible and effective when empowered by regional and national networks.

Notably In the case of, the established El Oro - Tumbes collaboration showed particular resilience in 1995 during the Ecuador–Peru Alto Cenepa War. The experts share their experience of these times, when leaders from both El Oro and Tumbes maintained this local cross-border support network, taking great risks to transport materials needed for malaria control. Health workers risked their lives and being detained for treason in order to continue sharing epidemiologic information, vector control resources, and medications across the border. These activities were conducted in secret from the national governments.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
5	malaria	Yemen, Saudi Arabia	2000-2017	18_678
Context				

The study focuses on Aseer and Jazan, two regions of Saudi Arabia adjacent to the border with Yemen. The area is characterised by high degree of cross-border human mobility, remaining through the years even as cross-border movement became progressively restricted by Saudi Arabia. Historically, the border could be crossed by borderland residents through checkpoints without restrictions. After 2000 the long, undefined border, previously open for borderland residents, became fixed. Saudi Arabia began to implement border fortification and a fenced and concrete border project was completed in 2009–2010. Back and forth cross-border movement (to visit relatives, for labour) continued, avoiding the wall through going along the Red Sea, or through eastern mountain passes. Since 2014 the border area began to be patrolled more vigorously. In February 2016, people waiting to cross into Saudi Arabia were allowed to cross in a single humanitarian gesture, resulting in thousands of people entering the Jazan region. Imported cases from Yemen continued to be notified from Aseer and Jazan between 2000 and 2016, with an upsurge to more than 2000 in 2016, but locally acquired malaria cases remained stably below 10 since 2005.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

Coordinated malaria control efforts between Saudi Arabia and Yemen began in 1980 and included co-planned malaria control activities. In 2002, a cross-border joint-program of activities was established, and remained operational through to 2013. From March 2015, all cross-border activities came to an end, with Saudi communities close to the Yemen border being evacuated or remaining inaccessible. All health services, including malaria control operations, collapsed on the Yemen side of the border.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
6	tuberculosis	Mongolia, China, Russia	2006-2012	15_850
Context				

The study reports increasing rate of new MDR-TB notifications from several Mongolian regions. Increased MDR-TB testing in Mongolia coincides with increased notification rates for MDR-TB, with hotspots in three areas adjacent to the Trans-Siberian Railway (two of these areas are also border areas). Cross-border transmission is likely, although the evidence provided in the study on cross-border transmission and contributing factors is weak.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

None mentioned

Event No.	Infectious disease	Affected bordering countries	Studied period	References
7	tuberculosis	Poland, Czech Republic, Slovakia	2007-2011	16_1397
Context				

The study includes 209 patients with tuberculosis diagnosed between 2007 and 2011 in the border regions of Poland, Czech Republic and Slovakia, adjacent to the tripoint border between these countries. The countries are part of the Schengen agreement during the study period, so movement across borders is unrestricted. Patient samples underwent spoligotyping and RT-PCR analysis to identify potential foci of international transmission. Six potential foci of international transmission were identified, including 30 patients: 14 Slovaks, 10 Czechs, and 6 Poles. There was no evidence of certain strictly specified circumstances of contact between the patients; and the authors concluded the transmissions were likely due to accidental encounters.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

The study does not specify the logistics of where testing of samples took place. However, the setup of the study implies a collaborative element between healthcare centers and/or laboratories from the three involved countries, which allowed better characterization of possible transmission clusters.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
8	tuberculosis	Thailand, Myanmar	2013-2014	15_199, 16_522, 17_1193
Context				

The studies focus on Tak Province in Thailand, adjacent to the border with Myanmar. The area is characterised by high degree of cross-border human mobility. People travel from Myanmar to Tak Province with active TB to seek healthcare, walking, or using shared transportation such as cars or buses. The three qualitative studies describing this event summarize the perspectives of healthcare workers and migrants (mobile populations, excluding those with refugee status).

Cross-border/border-region effort towards better understanding/prevention/control/treatment

Various stakeholders in Tak province provide means and facilitate access to treatment specifically for migrants, taking into account and alleviating, where possible, administrative hurdles (examples include a migrant health-insurance scheme; some healthcare centers providing treatment to non-residents; and some healthcare centers providing residential directly observed therapy (DOT) whereas patients, including migrants, can stay in residential TB villages and receive daily DOT.

Various actors, including NGOs are involved, and surveillance is complicated - some cases are not notified, as the surveillance is not standardized and data flows are not structured. Transfer forms in

English have been developed to facilitate transfers between healthcare facilities in Tak province and accross the border, but are not known or used properly. Tak province cross-border populations that come across the border to access healthcare are not included in the general surveillance statistics.

During the study period, a memorandum of understanding was signed between the bordering provinces to tackle the issue.

Sustainability of financing is identified as a chronic issue, as treatment at the border for migrants is provided predominantly by local and international NGOs, relying on funding from international donors, in a context in which Thailand may loose eligibility to certain funding schemes, as it is now considered an upper middle income country.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
9	tuberculosis	USA, Mexico	2007-2013 (15_214), 2014-2015 (16-167), 2014 (18_1361)	15_214, 16_167, 18_1361
Context				

The US/Mexico border region is medically underserved, has higher uninsured rates, inequitable health conditions and some of the fastest-growing metropolitan areas. Border populations are at an increased risk of prolonged infectiousness, inadequate access to TB treatment, and multi-drug-resistant tuberculosis (16_167). The issue is multifaceted and different approaches were developed in the three studies to tackle TB - one study (15_214) focused on the Border Lookout tool; the second study (16_167) offered screening for a high-risk group - migrant farmworkers at one land PoE between Mexico and USA; the third study (18_1361) developed a binational TB case definition to be used in surveillance.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

Border Lookout

The Border Lookout (BL) list: BL is a federal public health travel intervention tool, created in 2007. BL is managed by the Department of Homeland Security (DHS) based on requests from the Centers for Disease Control and Prevention (CDC). When requesting placement on the lists from DHS, CDC consider three criteria: 1) infectiousness or potential infectiousness with a communicable disease that would pose a public health threat if the individual traveled internationally; 2) the person is unaware of his/her diagnosis, fails to adhere to public health recommendations, including treatment, or public health authorities are unable to locate the person; and 3) the person poses a risk to travel internationally or on a commercial flight. Persons can be placed on the lists for any federal quarantinable illness or any disease posing a threat to fellow travellers, but most persons placed on these lists have infectious or potentially infectious TB, for which coordinated follow-up and control measures are needed. People with BL can be detected at or outside a PoE. When a person with a BL enters the United States at a PoE, CDC is notified so that a public health evaluation can be conducted before the person is released. In turn, CDC notify local and state public health authorities that a person on the list has been detected and work with them to implement public health interventions (isolation, coordinated treatment referral, etc.). Removal from the list requires a single criterion: non infectiousness. The study (15_2014) reviewed all case patients who were added to the BL for infectious TB between 2007 and 2013, and who travelled across the United States–Mexico land border (N = 66). The majority of included cases were male (71.2%), with a median age of 39. Country

of citizenship was primarily Mexico (45.5%) and USA (43.9%). Of the included cases, 30.3% were undocumented migrants. Most cases were found, achieved non infectiousness, and were thus removed from the list (63.6%). 25.8% remain lost to follow-up. Most cases in U.S. citizens (82.8%) and legal permanent residents (85.7%) were resolved and removed from the BL, but most cases (70.0%) in undocumented migrants remained lost to follow-up. Persons located at a PoE were on average found and treated to noninfectiousness more quickly than persons found outside of a PoE as a result of BL stimulated binational collaboration (15_214).

Migrant farm workers

Migrant farm workers are among the highest-risk populations for latent tuberculosis infection (LTBI) in the US with an estimated six-fold higher risk of developing active TB compared to the average US worker. In the study screening was offered at a park adjacent to the PoE, to detect LTBI.

Binational TB case definition

Binational status has never been added to the TB funding formula in the US because of a lack of data to describe the increased time and effort associated with care and treatment. A national surveillance definition for binational cases of TB would provide quantitative data for such purposes. The study took steps in developing such a definition that ensured the definition would be useful and acceptable to various stakeholders (TB program staff members, experts from local, state, and federal TB control programs) (18_1361)

Event No.	Infectious disease	Affected bordering countries	Studied period	References
10	HIV	China, Myanmar	2008-2010 (14_223); 2010-2013 (18_1338)	14_223, 18_1338
Context				

A large number of cross-border migrants work, live or travel in Yunnan province in China, adjacent to the border with Myanmar. In the first half of 2016, approximately 14 million border crossings took place through ground PoE in the China-Myanmar border region. To achieve the UNAIDS 90-90-90 goals, a series of harm reduction programs that focused on foreigners were performed by the Yunnan government. From January 2003 to December 2012, the HIV status of over 70,000 foreigners entering Yunnan from Myanmar was detected, and 1961 were found to be HIV-1 seropositive. The studies focus on two groups, considered at higher risk of HIV - IDUs (14_223) and truck drivers (18_338)

Cross-border/border-region effort towards better understanding/prevention/control/treatment

Two studies were carried out to provide information on the cross-border transmission dynamics of HIV-1 among IDUs and among truck-drivers. In the first study, 105 blood specimens were collected from HIV-positive Burmese long-distance truck drivers (LDTDs) entering and exiting Ruili port between 2008 and 2010. Phylogeographic analyses revealed that Burmese LDTDs may have made contribution in HIV-1transmission between the heterosexuals and injection drug users (IDUs) and between China and Myanmar in general. In the second study, the authors recruited 617 Burmese IDUs living in Yunnan through a cross-sectional survey in three counties near the border. The sampling approach was selected to specifically capture this group, which more commonly evades border surveillance and HIV monitoring (the authors report that transnational migrant IDUs more commonly go through convenient byways along the 2,185km border between China and Myanmar, avoiding border surveillance). Phylogeographic analysis revealed three cross-border transmission

patterns, associated with Yunnan-mIDUs in which Yunnan mIDUs served as the crucial nodes, linking the Burmese and Chinese IDUs. In both studies, sequences obtained from study participants were compared to sequences from Chinese and Burmese patients, downloaded from the Los Alamos National Laboratory HIV-1 sequence database - a dedicated platform for the international sharing of HIV sequence data.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
11	HIV	French Guiana, Brazil	recent period before 2018	18_1039
Context				

French Guiana is a French territory located in South America, surrounded by Brazil, Suriname, and the Atlantic Ocean. Despite France's progress regarding HIV and AIDS services, French Guiana remains active with 907 new cases each year for every 10000 inhabitants. Furthermore, while progress has been made in urban areas, incidence rates continue to increase in rural and border regions. Brazil is also a country committed to HIV/AIDS prevention and care. However, its borders remain vulnerable to HIV, particularly the North, which is more rural and where HIV services and infrastructure are less developed. The two countries with different health systems committed to fight HIV have struggled to control HIV at their shared border, characterised by high population movement. Facilities on both sides of the border have very low capacities - one hospital with no infectious disease capacities on the Brazil side, with nearest possible treatment in Brazil 12 hours away; one Primary care center (CDPS) treating HIV patients on the French Guiana side, with nearest other hospital in French Guiana 3 hours away. Personnel scarcity, rapid turnover, language and HIV-recommendation differences have hampered communication but both sides have recognized common goals. In the past decade, this has generated a growing level of interactions between health professionals and NGOs from both countries, ultimately leading to a shared solution.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

As of 2018 a French Guianese NGO, a Brazilian NGO (DPAC Fronteira), and the main French Guianese hospital, were collaborating in a project: Oyapock Cooperation Health (OCS in French and Portuguese). Access to testing is improved through a rigorous screening campaign (by 2018 every person seeking care of any sort at CDPS will be systematically offered a HIV test). Access to care is being improved through stationing an infectious disease physician at border, expanding facilities (planned 10 beds, at future DPAC frontera "centro de apoio" on Brazilian side). Additionally, mediators facilitate communication between institutions of care and HIV positive patients on both sides of the borders and organize workshops for the general population on sexual and reproductive health (SRH) and HIV prevention. In another effort, the project trains key community members (health professionals/teachers) in SRH education, and gives them a set of communication tools. Each trained individual is then supported in creating their own specific project contributing to the education and sexual well being of the community.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
12	cholera	Uganda, Democratic Republic of Congo	2015	16_736

Event No.	Infectious disease	Affected bordering countries	Studied period	References
13	cholera	Malawi, Mozambique	2015	16_736
Context				

Many cholera affected countries in Sub-Saharan Africa have no structured strategy to prevent and control cross-border cholera outbreaks. Often affected countries respond individually to situations requiring joint country efforts. The consequences are protracted epidemics, unnecessary suffering of the populations, economic loss and social disruption. Many cholera affected countries in Africa subscribe to WHO and use Integrated Disease Surveillance and Response (IDSR) strategy to prevent and control cholera outbreaks. While IDSR has been useful in improving the reporting and response to cholera epidemics in many countries, this strategy does not adequately guide them to address cross border cholera outbreaks. The identified study deals specifically with two sets of bordering countries: Uganda/Democratic Republic of Congo, and Malawi/Mozambique.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

This publication aims to characterise cross-border cholera outbreaks through reviewing data from the Ministries of Health epidemiological records of two countries in Sub-Saharan Africa; Uganda and Malawi. The aim is to assess the burden from these outbreaks in the context of perceived need for international collaboration. The countries were selected because they had endemic cholera outbreaks along their international country borders with Democratic Republic of Congo (DRC) and Republic of Mozambique respectively. DRC and Mozambique are among the countries with the highest cholera burden in WHO African region. Malawi and Uganda were both implementing IDSR strategy, thus had similar and comparable data including the use of the same official national language (English) and standard case definition for cholera. For the purpose of this study, a cross-border cholera outbreak was defined as a confirmed cholera epidemic occurring in the community located along or close to the international country boundary with cholera patients originating from both countries sharing the international border. A total of 603 cholera cases with 5 deaths were recorded in Malawi and Uganda during the cross-border cholera outbreaks involving the communities along the common country borders of Malawi-Mozambique and Uganda-DRC in 2015. Malawi recorded 495 cholera cases with 2 deaths, case fatality rate (CFR) of 0.6%. While Uganda recorded 118 cholera cases with 2 deaths and case fatality rate of 1.7%. In both Malawi and Uganda the outbreaks later spread to other parts of the country leading to 60 cases with 3 deaths, CFR of 5% and 102 cases with 0 deaths respectively. The communities along the borders interacted freely with their counterpart on the other side of the international boundary. The reasons for migration across the borders were: visiting relatives, cross-border trade, looking for employment and seeking better medical treatment. Informal border crossing was common, with the two international borders acting as an artificial demarcation to the communities.Besides, the investigation reports indicated that the risk factors for the cholera outbreaks were on the either side of the international borders for both Malawi and Uganda since the residents and migrants acquired cholera on any side of the border

Event No.	Infectious disease	Affected bordering countries	Studied period	References
14	Ebola	Guinea, Liberia, Sierra Leone, Mali, Senegal	2014-2016	16_32, 16_605, 16_607

Context

Ebola initially spread at the land borders of Guinea, Liberia, and Sierra Leone, and frontiers between these countries and their neighbors posed the most difficulties for the border health component of the response. Movement across land borders also resulted in the introduction of Ebola into neighboring Senegal and Mali causing an outbreak in Mali that resulted in eight cases and six deaths; The origin of the epidemic highlighted weaknesses in routine and cross-border disease surveillance. In the border regions of West Africa, tribal and ethnic kinship affiliations rather than geopolitical boundaries define village communities. Official border points of entry (those where travellers are inspected by border officials) are sparse, understaffed, and under resourced; dozens of informal border crossings exist for every official point of entry; and travel volumes are high. For all of these reasons, land borders are porous and applying screening procedures at official land border crossings similar to those used at airports is impractical and probably ineffective (16_605).

Cross-border/border-region effort towards better understanding/prevention/control/treatment

Two of the identified studies summarize activities at land borders during the epidemic (16_605, 16_607). International sharing of information about contacts led to interventions that prevented transmission and contributed to successful containment in Senegal without further spread. CDC, together with ministries of health, WHO, the International Organization for Migration, nongovernment organizations, and other international partners, strengthened disease surveillance in border communities and sharing of information across borders; implemented simple, sustainable measures (e.g., visual screening for illness at designated official border crossings); and developed clearly articulated plans for isolation, communication, assessment, referral, and transportation on the basis of existing and nearby resources. These organizations also coordinated improved mapping of geopositional landmarks, including official and informal border crossings, villages, and markets and other areas of congregation, as well as mapping of population movement patterns. This approach aimed to improve cross-border operations and situational awareness and engage community members in the public health response. A new model was developed that replaced single-point screening at borders with a continuum of measures that started with pretravel information for travellers and ended with monitoring through the end of the potential incubation period. These measures provided an alternative to more stringent options (e.g. travel bans or widespread use of quarantine) and calmed the concerns of political leaders and the public. (16_605, 16_607).

Another identified study (16_32) uses a model to analyse the weekly incidences of probable and confirmed Ebola cases in the patient database up to June 2015, as reported by the WHO, in order to estimate, among other things, possible numbers of cross-border transmissions/travel of sick patients between the three countries. Over the studied period 27 cross-border transmissions are estimated from Guinea, 110 from Sierra Leone and 0.025 from Liberia.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
15	HPAI H7N7	Belgium, Netherlands	2003	14_577

Context

In March 2003, the first outbreak of highly pathogenic avian influenza (HPAI) subtype H7N7 was reported in a dense poultry farm area in the centre of the Netherlands.The epidemic later spread south to the Dutch province of Limburg, near the Belgian border. A total of 255 farms, of which 241 were confirmed by virus isolation and 14 were only detected by serology, were infected in the Netherlands, and 30 million animals were culled during the control efforts. During these activities associated with controlling the epidemic, 89 humans were infected with the HPAI A(H7N7) virus, including one fatal case. In spite of preventive measures taken by the Belgian authorities following the events in the Netherlands, the virus managed to enter Belgian territory, resulting in a total of eight infected farms in two different areas between 15 and 28 April 2003.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

Phylogenetic analysis was performed to help reconstruct transmission events among farms. The results support at least three independent introductions from the Netherlands to Belgium. Most transboundary transmission events documented in this study were associated with close geographical proximity. This indicates that short distance airborne (or other) movements of virus particles may have contributed at least in part to the observed inter-farm transmission. This is in agreement with the prevailing wind direction from the northeast that was documented in the case reports of several of the Limburg outbreaks. However, the use of genetic data in addition to epidemiological data allowed the documentation of two long distance farm-to-farm transmission events. This indicates a potential role for indirect transmission such as mechanical transportation of virus particles.

The results illustrate the importance of the transnational aspects in combatting epizootic animal diseases, as, in spite of enhanced biosecurity, trade restrictions and pre-emptive culling of poultry to create buffer zones, at least three independent introductions from the Netherlands to Belgium occurred, and most probably one introduction from Belgium to the Netherlands. Genetic data can provide an additional layer of information, enhancing the resolution and power of epidemiological tracing studies

Event No.	Infectious disease	Affected bordering countries	Studied period	References
16	Rocky Mountain spotted fever	USA, Mexico	2013-2016	17_264

Context

Rocky Mountain spotted fever (RMSF) is an emerging public health concern near the US–Mexico border, where it has resulted in thousands of cases and hundreds of deaths in the past decade. In the United States, RMSF is characteristically a rare and sporadically distributed disease: most cases are reported from mid-Atlantic states. Recently, however, epidemic levels of RMSF have been described for areas of eastern and southern Arizona and northern Mexico. Transmission in these areas is perpetuated by large numbers of brown dog ticks, which are responsible for the unusually high incidence of disease in this region. The study summarizes four cases of RMSF. Three of the four cases could be classified as "imported" as they acquired infection in Mexico. One case got sick in Mexico and, after seeking care in Mexico, was admitted in a healthcare facility in USA where he died. Another case also likely acquired the disease through a recent trip to Mexico. The third case got sick

and was hospitalized in Mexico, from where she was transferred to the USA for treatment. The fourth patient described in this publication had not reported travel in the month preceding illness onset, but relatives frequently visited family in Mexicali, Mexico, and brought their pet dogs across the border with them. An ecologic assessment of the patient's home revealed an extensive brown dog tick infestation of the dogs and the yard. A total of 37 ticks were collected from the domestic and peridomestic setting and tested by PCR. One of the 37 ticks was positive for DNA of a Rickettsia species. Subsequent testing of this specimen by a genotyping assay led to identification of *R. rickettsii*.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

None mentioned. Recommended.

Event No.	Infectious disease	Affected bordering countries	Studied period	References
17	Listeria monocytogenes, Staphylococcus aureus	Romania, Moldova	2012-2013	16_1156
Context				

Usually little information is available regarding associated risks and prevalence of pathogens in foods brought in the personal luggage of travellers. To fill this gap, one objective of the EU research project ''Protection of consumers by microbial risk mitigation through combating segregation of expertise'' (PROMISE) was to assess five significant food-borne pathogens for being introduced into EU via uncontrolled imports. Thus, the prevalence of *Salmonella spp*., *Campylobacter spp*., *Escherichia coli* O157:H7, *Listeria monocytogenes*, and *Staphylococcus aureus* was investigated by all project partners in raw and ready-to-eat food collected either from ports and airports or from terrestrial EU borders.

Cross-border/border-region effort towards better understanding/prevention/control/treatment

This study investigated for the first time the pathogens' presence in food legally brought into the European Union as personal goods, but illegally sold in Romania, and revealed that contamination occurs at levels similar to those reported by the European Food Safety Authority (2013) for foods produced and sold with official control. *L. monocytogenes* was one of the main detected hazards, while poor hygiene conditions were emphasized by the presence of *S. aureus*. Food distribution to a certain limited number of consumers can most likely lead to sporadic or family-associated cases of disease.

Identified publications, including epidemiological information and guidelines that may help address public health events related to ground crossings

Preparedness exercises and studies, related to ground crossings or ground transport

This section summarizes identified publications, detailing efforts to assess and improve preparedness relevant to land borders. These efforts were carried out within regional networks and partnerships. The networks/partnerships involved, successes and lessons learned are summarized on the following pages. Data is provided directly as extracted from the publications (see data extraction section for details).

Four publications were identified under this category – one related to efforts towards a comprehensive border health strategy in West Africa, one detailing activities of the EpiSouth project, including countries in the Mediterranean Region and Southeast Europe, one summarizing experiences from several regional health cooperation programmes in Southeast Asia, and one providing a qualitative assessment of EU preparedness for serious cross-border health threats, with focus on Middle East Respiratory Syndrome and poliomyelitis.

Efforts towards a comprehensive border health strategy in West Africa (Reference: 17_27)

Description of the involved partnership/network

The US Centers for Disease Control and Prevention (CDC) Division of Global Migration and Quarantine (DGMQ), oversees the achievement and maintenance of IHR 2005 core capacities at US PoEs. Given this domestic experience, DGMQ began responding to requests for technical assistance from Guinea, Liberia, Sierra Leone, and other regional countries in August 2014 to initiate and strengthen border health measures.

Subsequently, as the number of Ebola cases declined, DGMQ evolved its strategy in the region from outbreak response to longer-term border health capacity building. DGMQ created the International Border Team (IBT), which, with funding from the Global Health Security Agenda, established formal partnerships with 10 countries (Benin, Cote d'Ivoire, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Senegal, Sierra Leone, and Togo) to advance a comprehensive border health strategy. The strategy has three components: (1) operational IHR 2005–compliant public health emergency response plans (PHERPs) and supporting standard operating procedures (SOPs) at nationally prioritized PoEs; (2) plans for allocating resources to strengthen detection, notification, and referral procedures for prioritized geographic areas and PoEs at highest risk for importation or exportation of a high-consequence communicable disease owing to population connectivity and international travel patterns; and (3) timely cross-border and regional public health data sharing, coordination, and collaboration to detect and respond to communicable disease.

Summary of successes and lessons learned relevant to land borders

The publication describes a set of border health system strengthening strategies, along with successes and lessons learned from integrating those strategies through partnership with Nigeria, Benin, and Togo. Examples relevant to ground crossings have been selected for the purposes of this literature review:

- In 2016, Togo and Benin, with implementation support from the Abidjan Lagos Corridor Organization (ALCO) and technical guidance from IBT, used IBT field methods to better understand population movement patterns and connectivity. The countries are using the information to improve national and cross-border surveillance plans including. Further, Togo, Benin, and Nigeria are analyzing population mobility and retrospective cholera surveillance data to inform coordinated preparedness and response plans. The countries used this approach to strengthen cross-border coordination during a multinational Lassa fever outbreak in early 2017.
- The Benin and Togo ministries of health used the Border Health Capacity Discussion Guide (BHCDG), developed by the IBT. The BHCDG was applied, in consultation with WHO, ALCO, and IBT, at nationally prioritized ground crossings along the corridor and a binationally prioritized ground crossing on their shared border. The BHCDG findings gathered from local

officials at the PoE revealed details about a consistent lack of plans and procedures for responding to public health events, few or no formal mechanisms for collaboration or communication with the neighboring country during a health crisis, and lack of transport and referral mechanisms in place for ill travellers identified at the border. The ministries of health, with technical support from IBT, at the time of publication, were implementing an action plan to address the identified areas for improvement using the BHCDG results.

- In Nigeria, PHI facilitated BHCDG discussions with personnel at two ground crossings with Benin, the busiest ground crossing in Nigeria. Pro-Health International (PHI), in collaboration with WHO and the Federal Ministry of Health, adapted the BHCDG to focus on border health human resources, the surveillance system, and binational and regional data sharing—areas not covered in depth by the IHR 2005 self-assessment tool.
- IBT and ALCO, with cosponsoring from the US Agency for International Development (USAID) Benin, facilitated 2 multinational meetings among Nigeria, Benin, Togo, Ghana, and Cote d'Ivoire (which participated in the second meeting only), to formalize cross-border and regional public health data sharing and coordination strategies. Products from these successful meetings include a draft memorandum of understanding and 7 supporting SOPs and annexes covering the following topics: priority diseases for real-time cross-border reporting; minimum reporting requirements or a cross-border report of a communicable disease; national activities to support cross-border coordination across public health response activation phases; determination of whether a public health event meets criteria for a cross-border report of a communicable disease; determination of whether a public health event meets criteria for responding to a cross-border report of a communicable disease; communication structure for reporting a cross-border event; communication structure for responding to a cross-border report of a public health event

EpiSouth in the Mediterranean Region and Southeast Europe (Reference: 17_596)

Description of the involved partnership/network

Countries bordering the Mediterranean basin are included in 3 World Health Organization (WHO) regions, and only some are member states of the European Union (EU). There is only 1 common international legislative framework to facilitate collaboration and communication in the Mediterranean region—the WHO International Health Regulations (IHR), while EU member states also operate under the framework of the EU Early Warning and Response System.

From 2007 to 2013, a Mediterranean collaborating framework (the EpiSouth Network) was established to share knowledge and develop joint activities. Under the coordination of the Italian National Public Health Institute (ISS), this network implemented two projects, the first focused on communicable disease surveillance and training and the second on strengthening preparedness for

common health threats and biosecurity risks. After the first three years of activity, the network included public health institutes, ministries of health, and laboratories of 27 countries in southern Europe, the Balkans, North Africa, and the Middle East. The network worked in collaboration with and with the support of the European Commission, the European Centre for Disease Prevention and Control, the World Health Organization, and the Italian Ministry of Health. By the end of July 2013, the national reference laboratories for arboviruses of 24 countries of the EpiSouth Network were represented.

Summary of successes and lessons learned relevant to land borders

Dedicated work within the network was carried out to assist in the improvement of coordination of surveillance between PoE and National Health Systems (NHS), in the framework of IHR 2005. This work was mentioned in the publication, identified through our literature search (17_596). Further details were found in reports, openly accessible at the EpiSouth Plus website. (http://www.episouthnetwork.org), and are summarized below:

Stakeholders from participating countries, through a series of meetings and methodologies, agreed on certain main characteristics and needs for each type of PoE, including ground crossings. For ground crossings the communication needs and flows of information were summarized as follows: For ground crossings, communication is from ground crossings to relevant authorities, between neighbouring countries, from the border public health authority to the local governmental authority (e.g. prefecture), to the local hospital and to the ministry of health. Dedicated EpiSouth Plus National Situation Analysis (ENSA) methodology to assess the actual situation with regards to surveillance coordination between PoE and NHS was developed and applied in site visits to Italy, Malta, Jordan, and Morocco.

Based on the overall findings, EpiSouth defined four strategic lines for improving surveillance coordination at points of entry in the Mediterranean: (1) invest in a legal framework linking IHR national focal points with competent health authorities; (2) ensure the presence of competent health authorities at points of entry; (3) elaborate on or update relevant protocols, processes, and procedures; and (4) ensure, through training, correct and consistent application of protocols, processes, and procedures.

Regional Health Cooperation Programmes in Southeast Asia (Reference: 18_364)

Description of the involved partnership/network

Early developments date back to the 1990s, when the relaxation of international tensions in the region, combined with concerns about endemic and emerging infections which spread across and beyond regional borders, attracted considerable donor investments to support regional initiatives for disease prevention and control. Since then, several networks and programmes have been established, characterised by different configurations, organisational arrangements, timeframes,

and membership. Some initiatives have been horizontal in scope; others have focused on specific diseases including malaria, HIV, and avian influenza.

Summary of successes and lessons learned relevant to land borders

The study explored factors that may affect the transfer, exchange, and use of public health data and expertise across borders, especially in developing contexts. To this end, 60 interviews were conducted with domestic and international stakeholders in Cambodia and Vietnam, selected amongst those who were involved in regional public health programmes. Some main findings are summarized below:

- There has been a great intensification in the circulation of data, information, and expertise across borders in Southeast Asia. At the same time, respondents mentioned various ways in which the movement of data can be challenging due to different standards and practices, language barriers, different national structures and rules that govern the circulation of health information inside and outside countries.
- In addition to data sharing, the establishment of bilateral and multilateral agreements for infectious disease control has promoted an intensification in cross-border and regional meetings, with variable representation, ranging from small gatherings between local health authorities to large inter-sectoral meetings. Meetings were seen to provide an opportunity to initiate or consolidate personal relations between health professionals in different countries, which can be used to promote informal communications in the event of disease outbreaks or other public health needs.
- Many participants pointed out that language was an important variable affecting data sharing and communication. Communication is relatively straightforward between health professionals from Laos and Thailand (as Lao and Thai are mutually understandable) or in bilingual areas along the borders (such as Surin province in Thailand, where residents can often speak both Cambodian and Thai). Central level managers in regional countries usually have good command of English, which is used as lingua franca in the region. In other contexts, however, language was identified a major barrier.
- The financial sustainability of public health programmes emerged as an important issue. Over the past two decades, the development and maintenance of regional public health networks has been financed predominantly by non-regional donors. Donor funding for regional initiatives has decreased recently due to changing donor priorities and expectations that participating countries would sustain cross-border partnerships with their own resources. Respondents shared that more resourced regional partners, particularly Thailand and, to a lesser extent, Vietnam, have provided increasing support to neighbouring countries,

especially in cross-border areas where population movement is seen as a major driver of disease transmission, such as the Thailand-Myanmar border. However, regional financing has tended to prioritise training and capacity building, and has not been able to match the level of funding from non-regional donors.

Qualitative assessment of EU preparedness for serious cross-border health threats (Reference: 18_597)

Description of the involved partnership/network

EU Decision 1082/2013/EU on serious cross-border health threats provides a legal basis for collaboration between EU Member States, and between international and European level institutions on preparedness, prevention, and mitigation in the event of a public health emergency.

Summary of successes and lessons learned relevant to land borders

The publication summarizes the results of a study, which aims to identify good practices and lessons learned in preparedness and response to Middle East Respiratory Syndrome (MERS) (in UK, Greece, and Spain) and poliomyelitis (in Poland and Cyprus). Based on a documentary review, followed by five week-long country visits involving interviews and group discussions with experts from both the health and non-health sectors, this qualitative case study has investigated six issues: national plans and overall preparedness capacity; training and exercises; risk communication; linking policy and implementation; interoperability between the health and non-health sectors; and cross-border collaboration. Findings relevant to land borders are summarized below:

- Countries may experience significant shortages of qualified personnel in some peripheral areas, with the result that the preparedness and response infrastructure in those places could potentially be sub-optimal. However, it was suggested that at the local level there may be areas with better inter-sectoral collaboration and coordination than many major urban centres, simply because people in the different sectors often know each other personally.
- With regard to polio, respondents shared that the relevant sectors in both studied countries included Border Control and the Interior Ministry for the border regions, and, more widely, those responsible for managing migration and refugees. The formal procedures for inter-sectoral collaboration are reportedly not always as clearly delineated as they are for the sector-specific work, in part due to what was described as the vertical modes of communication in the respective sectors. Overall, the success of inter-sectoral collaboration in poliomyelitis preparedness and response relies more on personal contacts between the

key actors than on formal protocols, at least in part because there have been no cases for many years, and therefore familiarity with these protocols is limited.

- Conducting cross-border simulation exercises during 'peace time' was seen as one way of developing the requisite networks and contacts to ensure good levels of preparedness and response for such diseases. The EpiSouth project was cited as an example of such a simulation, which included both EU and non-EU Member States from the entire Mediterranean region. An issue shared was that such exercises can be costly. The authors stipulate that the legal framework in Article 4 of EU Decision 1082 could be used to leverage funds to support them.
- In one country with a non-EU Member State neighbour, two distinct perspectives of cross-border relations emerged in the interviews: the national level perspective, and the local level perspective. At national level, the flow of health information between the two capital cities was reportedly very limited, in spite of friendly relations between the countries, with most information about the other country reaching the national level via WHO and ECDC. At local level, by contrast, there was a very good exchange of information between the respective border control authorities, based on a longstanding bilateral legal agreement. Each border post between the two countries had personnel whose jobs specifically included communicating with their counterparts across the border. Further, border guard commanders in both countries were obliged to immediately notify their counterparts across the border in the event of any sudden and unexpected illness or disease that was identified in the area under their jurisdiction. However, much of this information stayed and was acted upon at the local level, and – because it was operational as opposed to strategic – it was not sent to national level.

Included studies related to ground transport, or studies from other contexts (air transport, maritime transport), which may be considered relevant to ground transport

One review (15_809) was identified which discussed whether there is sufficient evidence to justify contact tracing in ground transport to limit the spread of tuberculosis (TB), concluding that the limited evidence and logistical burden of contact tracing point to the conclusion that contact tracing in public transport should not be a priority in the context of TB. However, under specific circumstances, the authors state that contact tracing in public ground transport might be considered on a case-by-case basis after an evidence-based risk assessment.

Two publications address another element of infectious disease prevention – disinfection. This element is relevant to all three transport contexts – air, maritime and ground transport. Two publications identified in this scoping review address disinfection on airplanes (16_18) and cruise ships (16_49). The first publication shares information on carefully designed standard operating procedures (SOPs) from Lufthansa, regarding disinfectants that can be used to different ends and on different surfaces in planes, without compromising the safety of flights. The SOPs are publicly available (16_18). The second publication describes the results of a modelling study, giving careful consideration to different surfaces on a cruise ship, and, among other things, the effect of frequency of disinfection of high-risk surfaces on norovirus transmission. It is a good example of a study that may provide the basis for adequate disinfection algorithms in cruise ships (16_49).

3.2.8 Discussion

Contexts

The review captured publications from various socioeconomic and cultural contexts across 5 continents (Africa, Asia, Europe, North America, and South America). The settings were varied, from a strictly controlled border with fences and walls between Saudi Arabia and Yemen, through more porous borders with routine human mobility both through crossing points and byways, to completely open borders in the Schengen Area. With regard to mobility through land borders, all border settings characterised in the identified studies share one common characteristic – regardless of the level of control and surveillance of movement across a border, population movement keeps taking place not only through border crossings, but also through different routes. This clearly sets ground crossings apart from the two other PoE types – airports and ports. While airports and ports are PoE where the flow of international passengers converges, cross-border movement through land borders only partially converges at ground PoE. This aspect of land borders means that many of the measures designed to limit infectious disease transmission through airports and ports could be of limited effectiveness when applied at ground PoE.

Some studies additionally refer to land border areas as areas with lower socioeconomic status, which also have weaker healthcare facilities and surveillance capacities, in comparison to other regions of the respective country. This is another central barrier to infectious disease control at land borders.

At the same time, many publications refer to a historical, embedded level of cultural understanding, shared economic activities, and established formal and informal communication and collaboration channels between communities on two sides of a ground border. In some settings, where border controls are more stringent, the resilience of established cross-border relations and interdependencies in land border regions becomes evident. This can be illustrated with the example from the border between Saudi Arabia and Yemen, where back and forth cross-border movement to visit relatives and for labour continued through alternative routes, even after the fenced and concrete border project was completed in 2010. This aspect of land borders naturally supports a more diversified set of measures, with flexible, context adapted sharing of resources between

both sides of the border. Several studies demonstrate how this approach at least partially mitigates the negative effect of resource limitations.

Infectious diseases

The identified publications detailed events of cross-border transmission of infectious diseases with different transmission routes and dynamics, calling for different measures to limit spread. To illustrate this, we can compare three of the infectious diseases, central to cross-border events in publications identified in this review - malaria, tuberculosis, and Ebola. Measures to control malaria include vector control, timely diagnosis and treatment of patients, behavioural measures (such as educating people how to eliminate mosquito breeding grounds from their homes), and the distribution of insecticide-treated bed nets in areas where mosquito populations are not controlled otherwise. The timely identification of cases and their contacts, and ensuring completion of the treatment regimen, are central to tuberculosis control. Enhanced and vigilant surveillance and contact tracing proved crucial in containing the Ebola outbreak between 2014-2016. Each disease poses different challenges and controlling the different diseases requires various capacities and resources. This review has allowed us to capture not only generally applicable solutions, but also solutions tailored to meet disease-specific needs.

It must be acknowledged that the review captured 17 events related to less than ten diseases among numerous diseases that can cross land borders. This outcome may be due to several reasons. First, our search strategy involved the looking up of terms only in the title, abstract and keywords of indexed publications. This ensured that we selectively captured publications for which land border or ground transport transmission was discussed as a central point, rather than a side-note. It was thus not surprising that we captured malaria in five separate events, tuberculosis in four separate events, and the epidemic of Ebola. In the case of malaria, on-going transmission through land borders in ecological zones, where mosquito control is complicated, can hamper elimination efforts. Thus, in the malaria context, the value of coordinated cross-border activities is appreciated. A central element of tuberculosis control is ensuring cases of active TB are diagnosed in a timely manner (or at LTBI stage), and treatment is completed. Access to, and completion of TB treatment can be particularly challenging in lower socioeconomic

status border areas with frequent cross-border movement and consequent loss to follow up. Land border transmission was also undeniably central in the Ebola outbreak in 2014-2016, and brought about massive capacity building efforts targeting land border infectious disease control not only in the countries affected by the outbreak, but also in neighbouring West African countries. Notably, fighting malaria and tuberculosis, along with HIV (appearing in two events in our review), has long been recognized as a global priority by all UN states, who, in 2000 agreed to try and achieve the United Nations Millennium Development Goals (MDG). Substantial effort and resources have been channelled towards achieving MDG targets, and this has contributed to an increase in research, prevention, control and treatment activities. The combined effect of the factors described above (search strategy, appreciated importance of border measures to specific diseases, and resources channelled to tackling specific diseases), becomes most clearly evident when we shift our focus from events (which may combine several publications) to the number of publications describing events. Of the 23 publications allowing us to characterise the events, eight were on tuberculosis, five on malaria, and three each on HIV and Ebola, with single publications referring to the other diseases.

Although we did not capture a large number of diseases, the experience gained from efforts to study, prevent, control and treat identified diseases in various land border contexts can be applied to a range of other diseases. For instance, lessons learned from mosquito control related to malaria are increasingly applicable in times of shifting mosquito habitats, and expanding geographic spread of known and emerging mosquito-borne diseases. Studies on the cross-border dynamics of HIV transmission, facilitated through the availability of HIV testing resources may help inform policies not only on HIV, but also on hepatitis B and C, as the distribution of hepatitis B and C, while not necessarily parallel to the distribution of HIV, is influenced to some extent by similar risk behaviours.

Overall, the review as designed does not allow us to provide an estimate of the burden of infectious diseases attributable to land border transmission – a task not achievable through a systematic review approach. The study, however, provides meaningful and transferrable information regarding the land border context, with relevant, specific

examples that can inform both general and disease-specific infectious disease prevention and control efforts at land borders.

Interventions

The current review may serve as a reference source of information regarding various types of interventions relevant to the surveillance, prevention, control and treatment of infectious diseases in the land-border context. In this part, interventions are grouped by broad type. Disease specific interventions, as well as general interventions are summarized.

Cross-border surveillance, prevention, treatment and control programmes

Malaria

- Effectiveness was measured for a cross-border community based malaria prevention programme in Angola and Namibia (18_697), and concurrent application of measures across the border was found to be more effective than single-sided application from either country. The successes of cross-border collaboration were also demonstrated in the historical overview of malaria prevention and control efforts at the Peru-Ecuador border. The Peru-Ecuador case is an impressive example of local initiative, resulting in binational sharing of resources, knowledge, and operational support, which carried on even during a period when the two countries were at war (16_134).

- In two examples, a country with a stronger healthcare system and infrastructure at one side of the border managed to reduce the incidence of locally transmitted malaria cases, even though imported cases, coming through the land border from the neighbouring country were still notified in relatively high numbers. One such example is a study from the China-Myanmar border, with China managing to reduce incidence of locally acquired cases (16_162). In this study, the authors recommend cross-border cooperation as a way to reduce malaria risk and achieve elimination goals. The other example is from the Saudi Arabia-Yemen border. In this study Saudi Arabia and Yemen collaborated for a long time in cross-border

efforts to limit malaria, but while the incidence of locally acquired malaria dropped on the Saudi Arabian side of the border, importations from Yemen continued, signalling continuing transmission in Yemen. All cross-border efforts halted in 2015, as health services collapsed on the Yemen side of the border due to the Yemeni Civil War (18_678).

Tuberculosis

- The example from Tak Province in Thailand, at the Myanmar-Thailand border, demonstrates various aspects of an effort on the Thailand side to facilitate access to tuberculosis treatment for people, arriving from Myanmar in search of treatment. Various stakeholders on the Thailand side take part in this effort, including local and international NGOs. One identified threat in this context is sustainability, as stakeholders heavily rely on funding from international donors (15_199, 16_522, 17_1193).

HIV

- A collaborative multifaceted project has been established with participation from both sides of the border of French Guiana and Brazil - a French Guianese Non-Governmental Organization (NGO), a Brazilian NGO and the main French Guianese hospital. The objective is to tackle resource limitations through a shared approach, combining context-adapted solutions to improve access to HIV testing and treatment and community awareness (18_1039).

Ebola

- During the Ebola epidemic between 2014 and 2016, international sharing of information about contacts led to interventions that prevented transmission and contributed to successful containment in Senegal without further spread. The US Centers for Disease Control and Prevention (CDC), together with ministries of health, WHO, the International Organization for Migration (IOM), NGOs, and other international partners, strengthened disease surveillance in border communities and sharing of information across borders; implemented simple, sustainable measures (e.g. visual screening for illness at designated official border crossings); and developed clearly articulated plans for isolation, communication, assessment,

referral, and transportation on the basis of existing and nearby resources (16_32, 16_605, 16_607).

General

- *As the number of Ebola cases declined at the end of the Ebola epidemic spanning 2014-2016, the US Centers for Disease Control and Prevention (CDC) Division of Global Migration and Quarantine (DGMQ) evolved its strategy in the region from outbreak response to longer-term border health capacity building. DGMQ created the International Border Team (IBT), which, with funding from the Global Health Security Agenda, established formal partnerships with 10 countries (Benin, Cote d'Ivoire, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Senegal, Sierra Leone, and Togo) to advance a comprehensive border health strategy. Tools were developed to facilitate cross-border information exchange, as shown in the below example:*

  Multinational meetings among Nigeria, Benin, Togo, Ghana and Cote d'Ivoire were held, resulting in the development of SOPs and annexes covering the following topics: priority diseases for real-time cross-border reporting; minimum reporting requirements or a cross-border report of a communicable disease; national activities to support cross-border coordination across public health response activation phases; determination of whether a public health event meets criteria for a cross-border report of a communicable disease; determination of whether a public health event meets criteria for responding to a cross-border report of a communicable disease; communication structure for reporting a cross-border event; communication structure for responding to a cross-border report of a public health event (17_27).

- Within the EpiSouth project, involving Mediterranean region countries, dedicated work was carried out to assist in the improvement of coordination of surveillance between PoE and National Health Systems in the framework of IHR 2005. This work also focused on ground crossings (17_596).

Reconstruction of transmission clusters through molecular methods

Examples were identified in which reconstruction of transmission clusters through molecular methods provided a better understanding of cross-border transmission of a disease.

- One such example is the study on tuberculosis transmission at the tripoint border between Poland, Czech Republic and Slovakia (16_1397).

- In two examples from the China-Myanmar border, molecular methods helped reconstruct cross-border transmission of HIV among two groups, considered at higher risk of HIV – IDUs (14_223) and truck drivers (18_338).

- A phylogenetic study on highly pathogenic avian influenza transmission among farms at the Belgium-Netherlands border area provides information, enhancing epidemiological information collected during the outbreak. The study demonstrates that during the epidemic, even in the context of enhanced biosecurity and pre-emptive culling of poultry to create buffer zones, transmission occurred among farms on both sides at least three independent cross-border transmissions between farms occurred, with airborne movement of virus particles suspected in short-distance transmissions, and mechanical transportation of virus particles suspected in longer-distance transmissions between farms (14_577).

Prioritization efforts

Malaria

- Malaria screening was offered at selected PoE on Cambodian land borders to identify the border area with highest relative cross-border malaria transmission (15_273).

Tuberculosis

- A binational tuberculosis case definition to be used in surveillance in the USA was developed in one study. The objective of such a case definition is to capture tuberculosis cases, whose treatment is complicated through cross-border movement. Capturing and quantifying these cases through surveillance can inform adequate distribution of dedicated resources to support their treatment (18_1361).

General

- *As the number of Ebola cases declined at the end of the Ebola epidemic, spanning 2014-2016, the US Centers for Disease Control and Prevention (CDC) Division of Global Migration and Quarantine (DGMQ) evolved its strategy in the region from outbreak response to longer-term border health capacity building. DGMQ created the International Border Team (IBT), which, with funding from the Global Health Security Agenda, established formal partnerships with 10 countries (Benin, Cote d'Ivoire, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Senegal, Sierra Leone, and Togo) to advance a comprehensive border health strategy. Prioritization exercises were carried out as part of this effort:*
  In 2016, Togo and Benin, with implementation support from the Abidjan Lagos Corridor Organization (ALCO) and technical guidance from IBT, used IBT field methods to better understand population movement patterns and connectivity. The countries are using the information to improve national and cross-border surveillance plans including. Further, Togo, Benin, and Nigeria are analyzing population mobility and retrospective cholera surveillance data to inform coordinated preparedness and response plans. The countries used this approach to strengthen cross-border coordination during a multinational Lassa fever outbreak in early 2017 (17_27).

Focus on risk groups

Three of the identified studies focus specifically on high risk groups.

- In one study, screening for latent tuberculosis infection was offered to migrant farmworkers at a USA land PoE to Mexico, to detect LTBI (16_167).

- The two molecular studies on HIV transmission at the China-Myanmar border also focus on two higher risk groups – IDUs and long-distance truck drivers (14_223, 18_1338).

Administrative tools

Examples of administrative tools to assist in collaboration within the healthcare sector and with other sectors were identified.

- In Tak Province, Thailand, a migrant health insurance scheme was devised to facilitate affordable access to tuberculosis treatment for non-residents. Additionally, a transfer form in English was developed to facilitate transfers between healthcare facilities in Tak province and across the border. However, shared experience demonstrates these forms are not implemented correctly (15_199, 16_522, 17_1193).
- The Border Lookout (BL) tool is a federal public health travel intervention tool, managed by the Department of Homeland Security based on requests from the Centers for Disease Control and Prevention (CDC) in the USA. BL is a list, on which persons, suffering from a communicable disease can be placed based on stringent criteria for any quarantinable illness or any disease posing a threat to fellow travellers. It facilitates the location and treatment of these persons to non-infectiousness at all federal PoE, including land borders. In practice most persons placed on the lists have infectious or potentially infectious TB. BL exists since 2007 and a study on its effectiveness demonstrates that most 63.6% of persons on the list were found, achieved non-infectiousness and were thus subsequently removed from the list, with 25.8% of persons on the list lost to follow up (15_124).

3.2.9 Conclusion

The current review may serve as a reference source of published information regarding various types of interventions, relevant to the surveillance, prevention, control and treatment of infectious diseases in the land-border context. It provides a number of specific examples of land border settings, disease types, and intervention approaches. It also summarises relevant contextual information, shared in the included publications that may orient the reader as to the variety of factors, contributing or hindering successful interventions (specific border context, involved stakeholders, successes and challenges identified through experience).

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4 VECTORS AND VECTOR-BORNE DISEASE THREATS AT THE EAST AND SOUTH-EAST EU BORDER

4.1 INTRODUCTION: CONQUERING NEW TERRITORIES BY ALIEN SPECIES

Conquering new areas is an evolutionary phenomenon of many species. Humans have played an important role in this process. When people changed the place of their residence, together with them and their belongings went all organisms from their bodies, clothing and movables. This process became more dynamic during globalization when more and more people moved for economic, touristic and safety purposes, while the exchange of goods also became more intensive. According to Roques (50), in the pre-industrial era in Europe, 1-2 new species of invertebrates appeared per year; during the period 1900–1950 there appeared approximately 6 new species, and in the years 1975–2000 there appeared 13 new invertebrate species per one year, respectively. In Europe, most alien species are of Asiatic origin (29.3%), and it was stated that almost half of them are pests of medical, veterinary or economic importance. It was found that an increase of Gross Domestic Product (influenced by international trade and exchange of goods) was correlated with richer fauna of spiders (37), plants, birds and mammals which colonize these countries. In the Database of Invasive Species, there are hundreds of species which conquer new areas and nowadays are considered as alien species (12).

An increase of prosperity positively influences the development of transport infrastructure: building national and international roads, railway connections and water channels. These can be gates for invasive species to grasp new territories. In **Table 3**, possible ways of conquering new territories by alien species are shown.

Table 3: Possible ways of colonizing new territories by alien species according to Hulme et al (37), modified

Introduction into the region	**Pathway**	**Description**	**Examples**	**Regulations**
Commodity	Release	Intentional release	Biocontrol agents, game animals, plants for erosion control, herbs	Responsibility: importer, permits required – national regulations
	Escape	Intentional introduction, but unintentional escape	Crops, garden plants, pets	Responsibility: importer, risk analysis according to national (and EU) regulations
	Contamination	Unintentional introduction with a commodity	Parasites, pests, commensals of traded plants and animals	Responsibility: Exporter, quarantine procedures, international regulations
By vector (transportation agent)	Stowaway	Unintentional introduction on/within a transport agent	Hull fouling, ballast water/soil/sediment organisms, arthropods in personal transportation agents, arthropods in luggage, on animals	Responsibility: Carrier, quarantine procedures, international sanitary regulations
Dispersal	Corridor	Unintentional introduction via human infrastructures linking previously unconnected regions	Alien species from Caspian Sea in the Baltic, invasive mosquito species in new European regions	Responsibility: Developer, environmental impact regulations national and international, polluter – financial penalty, international regulations
	Unaided	Dissemination of species	Potentially all species which are	Responsibility: when

		through natural dispersal across political borders	able to extend their territory, many ticks species, mammals, birds	proven and found a polluter, international regulations. Generally – any action of humans.

To make an introduction successfully, with the exception of the ”journey” to the new territory, several environmental conditions must be fulfilled and the organism should possess specific biological characteristics. Therefore, the target environment must be appropriate for the new organism, meaning it will enable survival (and reproduction) of the invasive species. The time and conditions during transportation should be at least bearable for an organism in order to survive. For successful colonization, introduction of a species should be a multiple (not single) event, and conditions during and timing of transportation should enable the growth of a population in the recipient region. These conditions are fulfilled when transportation channels between the source of the organism and target territory were continuous in time (development of regular passenger and/or cargo connections). For humans, invasions into new territories of organisms which can pose threats to health are of particular concern. They can be carriers (vectors) of pathogenic microorganisms.

The chapters and tables 4–12 below describe vectors and diseases which could be a potential threat at ground crossings at the East and South-East EU border.

Most vectors are active vectors, in that they can insert a pathogen into a human organism by direct damage of human skin during biting/stinging, because a pathogenic organism can be present or develop inside the vector. Important features of active vectors include: the possibility of changing the host, anthropo/zoophility and sucking blood several times.

The other group are passive (or mechanical) vectors – they carry pathogens on the surface of their bodies or in their digestive tract. Their appearance in the environment close to people and mobility could pose a threat for human health. Those species appear in mass number close to people, penetrate different environments, have a wide spectrum

of food and can mechanically contaminate food and surfaces through pathogenic microorganisms. There is also a group of external parasites of humans which can carry pathogens and also cause several health problems parasitizing on human bodies. Synantropic rodents are animals of concern as hosts of parasites such as fleas and other parasitic organisms.

4.2 ARTHROPODS – ACTIVE (BLOOD SUCKING) VECTORS OF DISEASES

4.2.1 Mosquitoes

Among 3500 mosquito species known in the world, only about 30 of them are able to colonize new territories, crossing their range of geographical distribution. They are characterised by many adaptations which enable their expansion. For example, their eggs are more resistant for dry conditions, and their larvae can develop in temporary water bodies often of anthropogenic origin (plastic containers, old tires, flower pots) where water temperature and other abiotic parameters are not stable (19, 57).

Species belonging to two genera - *Aedes* and *Ochlerotatus* - showed special abilities to extend their range of occurrence and to build stable populations in new geographical regions (55). Together with conquering new territories, they can bring dangerous mosquito-borne pathogens. *Aedes (Stegomyia) aegypti, Aedes (Stegomyia) albopictus* and *Ochlerotatus (Finlaya) japonicus* are competent vectors of many arboviruses. *Ae. aegypti* and *Ae. albopictus* are main and secondary vectors of Dengue Hemorrhagic Fever. More than 40% of people living in large cities of tropic and subtropic regions are at risk of this disease (28). Dengue is not endemic in European countries and the majority of cases are travellers infected outside of the EU. However, *Ae. albopictus* is established in 15 European countries to date (34). Infected travellers can arrive in Europe during viraemic periods and be bitten by local *Aedes* mosquitoes. Consequently, these mosquitoes could transmit pathogens to the local population. During the period 2010-2019, about 40 autochthonous cases of dengue were confirmed in Croatia, France and Spain (28). In 2012, a dengue epidemic (2000 cases) erupted in Madeira Island; the vector was *Aedes aegypti* (54).

Ae. albopictus is considered as a main vector of Chikungunya virus and in 2007, was responsible for transmission of this pathogen in Italy (200 cases). In 2010 and 2014, there were autochthonous transmissions reported in France (29).

Och. japonicus in laboratory tests was able to be a vector for many arboviruses with West Nile Fever (WNF) virus as well. For this reason, it is considered as a species posing a threat to public health (19).

Culex spp. mosquitoes which can be vectors of WNF are stable elements of mosquito fauna of East and South-East European countries. In the case of WNF, temperature is an important factor: in Europe the cases of human and equine WNF are reported. As of 4 December 2019, EU Member States (MS) and EU neighbouring countries reported 463 human infections. EU MS reported 410 cases: 223 in Greece, 66 in Romania, 53 in Italy, 36 in Hungary, 16 in Cyprus, 5 in Bulgaria, 4 in Austria, 4 in Germany, 2 in France and 1 in Slovakia. EU neighbouring countries reported 53 human cases: 27 in Serbia, 10 in Israel, 10 in Turkey and 6 in North Macedonia. During the same time period, 50 deaths due to West Nile Virus infections have been reported (27). Germany and Slovakia reported their first autochthonous mosquito-borne West Nile Virus infection. However, it should be stressed that in many countries cases of WNF are not diagnosed and registered, since in 80% of cases there are no symptoms or the disease is similar to flu.

Mosquito species responsible for malaria transmission (belonging to the *Anopheles* genus) are also part of mosquito fauna of East European and South-East European countries. The malaria cases are registered in EU countries mostly among travellers returning to Europe from malaria-occurring countries.

In 2016, 8231 cases were reported in the EU, 8225 (99.9%) of which were confirmed. Among 7485 cases with known importation status, 99.8% were travel-related. Thirteen confirmed cases were reported as locally acquired (eight by Greece, two by France and one each by Germany, Lithuania and Spain) (30). A marked seasonal trend was observed across all countries, with cases increasing during and immediately after the summer holiday months (July–September). Data also indicate that local transmission of *P. vivax* remains possible in the EU. This emphasizes the need for malaria surveillance, preparedness and prevention in the EU (14, 29, 41, 51, 61, 70).

Table 4: Mosquitoes – potential vectors and mosquito-borne diseases which could be a potential threat at ground crossings at the East and South-East EU border (68, modified)

Disease	**Vector(s)**	**Causal Organism**	**Reservoir**	**Risk at PoE**	**Vector's Mode of Entry (Pathway)**
Chikungunya	*Aedes spp.*	*Alphawirus, Togaviridae*	Humans	High	Contamination, Stowaway, Dispersal
Dengue Fever	*Aedes spp.*	*Flavivirus*	Humans	High	Contamination, Stowaway, Dispersal
Zika Virus	*Aedes spp.*	*Flavivirus*	Humans	Moderate	Contamination, Stowaway, Dispersal
West Nile Fever	*Culex spp.*	*Flavivirus*	Birds, Mammals, Humans	Moderate/ Low	Unaided
Japanese Encephalitis Virus	*Aedes spp. Culex spp.*	*Flavivirus*	Birds, Mammals, Humans	High/ Moderate	Unaided
Malaria	*Anopheles spp.*	*Plasmodium spp.*	Humans	High	Contamination, Stowaway

Figure 6: Aedes albopictus

(***Source:*** *https://www.ecdc.europa.eu/en/disease-vectors/facts/mosquito-factsheets/aedes-albopictus*)

(***Source***: *author*)

Figure 7: Water reservoirs in the garden - mosquito development places

4.2.2 Ticks

Ticks are one of the most dangerous bloodsucking arthropods attacking humans and animals. There are about 900 species of ticks in the world of which 44 are continuously present in Europe. Almost half of them are of epidemiological and veterinary importance. Ticks are carriers of more than 60 viruses (of which 20 are etiologic agents of human diseases and diseases of domestic animals), 11 bacterial pathogens including 5 rickettsiae of spotted fever group, 7 species of spirochaetes of *Borrelia burgdorferi* sensu lato, human granulocytic anaplasmosis and human babesiosis (21, 44). Selected pathogens, diseases caused by them and the species of ticks-vectors are presented in **Table 5**.

Most important tick species are: *Ixodes ricinus, Hyalomma marginatum group, and Ripicephalus sanguineus.*

I. ricinus is present in whole Europe (except arctic areas) and also countries at the East and South-East EU border. *H. marginatum* group of 4 species are ticks which live in steppe and forest/steppe conditions in Mediterranean climate (43). They extend their range into North and North-West. Livestock are at particularly high risk of importing

Hyalomma marginatum. It is the main vector of Crimean-Congo Haemorrhagic Fever virus in Europe (31).

R. sanguineus is the parasite of dogs and with them is spread worldwide. Although its range is limited to subtropical and warm areas, because of tourism is more often dragged into the temperate climate zone (35, 43). *Dermacentor reticulatus* plays a minor role as vector of diseases for humans, but there are reports on it as a carrier of *Rickettsia spp.* and *Babesia spp.* pathogens (21).

Table 5: Ticks – potential vectors and tick-borne diseases which could be a potential threat at ground crossings at the East and South-East EU border (21, 65, modified)

Disease	**Vector(s)**	**Causal organism**	**Reservoir**	**Risk at PoE**	**Vector's Mode of Entry (Pathway)**
Tick-Borne-Encephalitis (TBE)	*Ixodes ricinus; I. persulcatus*	TBE-virus (*Flaviviridae)*	Ticks	High	Unaided
Crimean-Congo-Haemorrhagic Fever (CCHF)	*Hyalomma marginatum; other Hyalomma species; Ixodes ricinus; Dermacentor marginatus; Haemaphysalis punctata*	CCHF-virus (*Nairovirus)*	Ticks	High	Unaided
Lyme borreliosis (LB)	*Ixodes ricinus; I. ; secondary vectors: Dermacentor marginatus; Hyalomma punctata; Ripicephalus sanguineus*	*Borrelia burgdorferi complex: B. afzelii; B.burgdorferi s.str; B.garinii; B.lusitaniae; B.valaisiana*	Rodents, Birds	High	Stowaways, Unaided
Tick-borne relapsing fever	Soft ticks (*Argasidae)*: *Ornithodoros spp.* Hard ticks: *Ixodes ricinus*	*Borrelia spp.* Other than *Borrelia burgdorferi* complex.	Birds, Mammals	Low	Unaided

Tick borne spotted fevers	*Ripicephalus sanguineus Dermacentor spp; Dermacentor marginatus*	*Rikettsia conorii* *Rickettsia slovaca*	Ticks?	Low	Stowaways, Unaided
Human granulocytic anaplasmosis (HGA)	*Ixodes ricinus*	*Anaplasma (Erlichia) phagocytophilum*	Wild animals	Low	Unaided
Human babesiosis	*Ixodes spp; Dermacentor spp; Ripicephalus spp.*	*Babesia spp.*	Cattle, wild animals	low	Unaided

Figure 8: Dermacentor reticulatus-hard tick

(***Source**: author)*

(***Source**: author)*

Figure 9: Argas spp. soft tick

4.2.3 Phlebotomine sandflies

Sand flies distribution is limited to areas that have temperatures above 15.6°C for at least three months of the year. Below 10°C, sand flies must enter a diapause state in

order to survive winter. In addition, sufficient moisture in the environment is required because humidity is an important factor for egg survival. However, peaks in rainfall are followed by reductions in sand fly numbers as excess precipitation reduces the amount of suitable diurnal resting sites for adult insects and limits adult flight activity, as well as killing immature stages. Due to possible climate change, temperature in northern Europe is likely to become milder and precipitation will increase. In addition, winter temperatures will increase. These changes could lead to an expansion in the range of Phlebotomine sandflies in Europe, as they will be able to survive in areas that are uninhabitable today, including large areas of north-western and central Europe and at higher altitudes. It is predicted that if climate change results in suitable temperatures, sand fly species could rapidly establish in countries currently on the edge of their range (37). They are vectors of human and canine leishmaniasis, and sand fly fevers caused by phleboviruses (32) (**Table 6**).

Table 6: Phlebotomine sandflies – potential vectors and sandfly-borne diseases which could be a potential threat at ground crossings at the East and South-East EU border

Disease	**Vector (s)**	**Causal organism**	**Reservoir**	**Risk at PoE**	**Vector's Mode of Entry (Pathway)**
Visceral Leishmaniasis Cutaneous Leishmaniasis	*Phlebotomus spp.*	*Leischmania donovani* *Leischmania tropica*	Humans, Mammals	Moderate	Unaided
Sandfly fever	*Ph. papataci*	*Phleboviridae*	Humans	Moderate	Unaided

4.3 HUMAN EXTERNAL PARASITES

4.3.1 Fleas

Fleas are pests of humans and domestic animals all over the world. There are over 2300 flea species, including approximately 70 species in temperate climates. The majority of fleas prefer non-human hosts; many of them can feed on humans when

infestations are heavy or no other hosts are available (23). *Xenopsylla cheopis* – the oriental rat flea is the carrier of causal organisms of plague and murine typhus. Rats are the main hosts for this flea species, but occasionally they bite people. Fleas are carriers of plague, murine typhus and pneumococci infections; they are also hosts of the tapeworms *Hymenolepis fraternal, H. diminuta, Dipylidium caninum* (23, 68)(**Table 7**).

Table 7: Fleas (Siphonaptera) – potential vectors and flea-borne diseases which could be a potential threat at ground crossings at the East and South-East EU border (68, modified)

Disease	**Vector(s)**	**Causal organism**	**Reservoir**	**Risk at PoE**	**Vector's Mode of Entry (Pathway)**
Plague	*Xenopsylla spp.*	*Yersinia pestis*	Rats	High	Unaided, Contamination, Stowaways
Murine Typhus	*Xenopsylla spp.*	*Rikettsia typhi*	Rats, Domestic Animals	Moderate	Unaided, Contamination, Stowaways
Parasitic infections	*X.spp, Ctenocephalides canis, C. felis, Pulex irritants*	*Dipylidium caninum, Hymenolepis diminuta, H. nana*	Dogs, Cats, wild carnivores, Rats, mouse	Low	Unaided, Contamination, Stowaways

(***Source:*** *author)*

Figure 10: Fleas are not only carriers of pathogens, they can bite severely

4.3.2 Lice

All known lice are wingless external parasites of warm-blooded animals. From about 500 species, only three are parasites of humans. Head louse (*Pediculus humanus capitis*) and body louse (*Pediculus humanus corporis*) according to actual knowledge are the complex species with distinct patterns in behaviour.

Body louse remains on the host's body only during blood sucking, spending the remaining time in the host's clothing. Eggs are layed on garment fibres. Body lice can be transferred from person to person by bedding or used clothing. They are vectors of typhus and relapsing fever. Crowding of people in poor sanitary conditions could increase the body louse population, making an outbreak of typhus more dangerous.

All head louse development stages appear on the host (eggs – called nits are attached to human hairs). Head lice can be spread by shared use of personal items including hats, hairbrushes, combs and towels. It is considered that head louse is not a vector of serious infections except secondary dermatitis (20).

The Crab louse (*Phtirus pubis*) spends all its life on the human body, in haired pubic or perianal regions, but can colonize any other haired regions (for example eyebrows or eyelashes). Crab lice are unable to survive more than one day off a host; therefore their transfer between people is possible during close (also intimate) contact (20, 24).

Table 8: Lice (Pediculidae) – potential vectors and louse-borne diseases which could be a potential threat at ground crossings at the East and South-East EU border

Disease	**Vector(s)**	**Causal Organism**	**Reservoir**	**Risk at PoE**	**Vector's Mode of Entry (Pathway)**
Epidemic typhus	*Pediculus humanus*	*Rikettsia prowazeki*	Humans	Moderate	Stowaways
Epidemic relapsing fever	*P.humanus*	*Borrelia recurensis*	Humans	Moderate	Stowaways
Trench fever	*P. humanus*	*Bartonella quintana*	Humans	Moderate	Stowaways
Dermatosis,	*P. humanus*	Different	Humans	Moderate	Stowaways

secondary infections	*capitis*	bacteria			
Dermatosis, Secondary infections	*Pthirus pubis*	Direct: parasitosis, Indirect: different bacteria	Humans	Low	Stowaways

4.3.3 Scabies

Sarcoptes scabiei (scabies) is a parasite of human skin. Larvae of this mite burrow in the skin tunnels which causes itching and inflammatory reactions. Secondary reactions could be bacterial infections and thickening of epidermis. People working in crowded places, school children and elderly people in nursing homes are at risk for scabies. It is estimated that there are about 300 million people/year worldwide suffering from scabies. In the European and Near East countries, the frequency of scabies is approximately 10%; in the other regions of world it is up to 71% locally (20, 24). During wars and natural disasters, increases in the incidence of scabies have been observed.

Table 9: Scabies (Sarcoptes scabiei) – diseases which could be a potential threat at ground crossings at the East and South-East EU border

Disease	**Vector**	**Causal organism**	**Reservoir**	**Risk at PoE**	**Mode of Entry (Pathway) of causal organism**
Scabies, Crusted (Norwegian) Scabies	Humans	*Sarcoptes scabiei*	Humans	High	Stowaways

4.4 PASSIVE (MECHANICAL) VECTORS

4.4.1 Flies and Cockroaches

In the human environment, about 220 fly species exist. Species of great importance belong to the families *Muscidae, Sarcophadidae* and *Calliphoridae*.

The common house fly *Musca domestica* is distributed all over the world. During warm seasons two or more generations may develop in a month. House flies can ingest only liquid food; therefore solid particles are liquefied by regurgitated saliva. This liquefied food is then licked into the digestive tract. This habit makes flies efficient mechanical vectors of diseases. Pathogenic microorganisms are picked up by flies from garbage, sewage, manure, excrements and carried to houses, on human food and food utensils by vomiting, faeces or on the haired body parts. On the body surface of one insect, there can be about 6 million microorganisms, and in its digestive tract about 28 million (58).

The Stable Fly (*Stomoxys calcitrans*) is a blood-sucking fly which bites humans, dogs and other vertebrate hosts in human environments. Their bites may be irritating and painful; when stable flies appear in mass numbers, they can reduce activity of people and animals. They furthermore play a role as a mechanical vector of pathogens like house flies (24, 58).

Myjasis are diseases caused by larvae of flies (*Lucilia sericata, Fannia canicularis, Calliphora vicina*) when they invade the living tissues of humans or animals. Myjasis are caused by larvae which normally develop in meat or other organic media, but in specific conditions they can develop in wounds or natural holes of the body (24).

Cockroaches are present in all continents except cold arctic areas. Many of the 3500 species are common insect pests in houses, public buildings, dwellings, hospitals, schools, ships, sewers etc. around the world (68). At present, subtropical species of cockroaches such as *Periplaneta australasiae* and *Periplaneta americana* are met in colder areas as well (2, 24) They are synantropic insects, living near human settlements and feeding on animal and vegetable waste. As in the case of synantropic flies, cockroaches pick up pathogenic microorganisms from surfaces they move on and carry them mechanically to other places. Generally, they disseminate pathogens present in the

environment within which they live. In spite of this, they are dangerous in medical facilities, where they can play role in disseminating several resistant strains of bacteria (14, 41). Cockroaches are also the source of allergens which are considered as important indoor allergic agents in America and Europe.

Table 10: Diseases carried out by flies and cockroaches (passive vectors) which could be a potential threat at ground crossings at the East and South-East EU border (68, modified)

Disease	**Vector(s)**	**Causal organism**	**Reservoir**	**Risk at PoE**	**Vector's Mode of Entry (Pathway)**
Shigellosis	*M.domestica*& Cockroaches	*Shigella spp.*	Humans	Low	Unaided
Amoebic dysentery	*M.domestica*& Cockroaches	*E.hystolytica*	Humans	High	Unaided
Paratyphoid	*M.domestica*& Cockroaches	*Salmonella typhimurium*	Humans	High	Unaided
Cholera	*M.domestica*& Cockroaches	*Vibrio cholerae*	Humans	High	Unaided
Yaws	*M.domestica*& Cockroaches	*C. trachomatis*	humans	Low	Unaided
Asthma	Cockroaches	Faeces	-	Low	Unaided
Myjasis	*Fannia canicularis, Calliphora vicina*	Larvae of flies	-	Low	Unaided

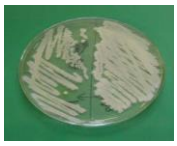
Figure 11: Cockroaches Blattella germanica L (adults and larvae stages)

(***Source:*** *author)*

(***Source:*** *author)*

Figure 12: Cockroaches Blattella germanica L (adults and larvae stages)

Figure 13: Colonies of pathogenic bacteria multiplicated on breeding medium from those isolated from cockroach body surface



Isolated strains belong to species:

Pseudomonas. aeruginosa, P. putida, Klebsiella pneumoniae, K. oxytoca, Enterococcus faecalis, E. faecium, E. casseliflavous, Staphylococcus epidermidis.

(***Source****: author)*

4.4.2 Commensal Rodents

Rats and mice live nearby humans and eat the same food; they are strong competitors to humans in the environment. What they do not eat, they contaminate with their urine, faeces or fur. It is estimated that rats and mice destroy enough food each

year to feed 200 million people. Within buildings, rats damage construction, electronic and electrical infrastructure as a result of their gnawing (24, 26, 68).

Commensal rodents which live in the same environment as people are hosts for arthropods – vectors of diseases (ticks, fleas). In the past, they were responsible for the spread of such diseases as plague or murine typhus. Nowadays due to improved sanitation, effective drugs, and rodent and insect control programs, the disease threat from rodents is not as tremendous. However, due to the habits of these animals including travelling, living in sewers, garbage etc., there are still cases of human and animal diseases connected with the presence of rodents, the arthropod vectors on them and pathogens transmitted by these arthropods or directly by rodents (68).

Table 11: Characteristics of commensal rodents

Characteristic	**Norway Rat**	**Roof Rat**	**House Mouse**
	Rattus norvegicus	***Rattus rattus***	***Mus musculus***
Weight	300g	200g	15g
Body length (head+body)	200-250 mm	150-220 mm	60-90 mm
Tail	150-200mm, shorter than body	180-250mm, longer than body	80-100mm, longer than body
Fur	Dark above, pale beneath, brown with scattered black, venter gray to white	Agouti/gray to black, venter white, gray	Light brown/gray, smooth
Ears	Small, covered by short hairs, do not reach eyes	Large, naked, can be pulled over eyes.	Large, covered by hairs
Eyes	small	large	small
Snout	blunt	pointed	pointed
Droppings	Capsule-shaped, 2cm	Spindle-shaped, 1cm	Rod-shaped, 0.3-0.6cm
Habits	Home range radius: 30 – 50m Readily climbs, Excellent swimmer Usually burrows	Home range radius: 30 – 50m Actively climbs Can swim Sometimes burrows, but nests at walls,	Home range radius: 3 – 10m Good climber Can swim Nests within structures, stored

		attics, trees	food, burrows
Food/Water	Omnivorous, often meat (22-30g/day); Water: 15 – 30ml/day	Omnivorous, especially fruits, nuts, grains, vegetables (15 – 30g/day); Water: 15 – 30ml/day	Omnivorous, prefers cereal grains (3g/day); Water: 3 - 9ml, but can stay long without free water

Table 12: Diseases carried out by commensal rodents which could be a potential threat at ground crossings at the East and South-East EU border (68, modified)

Disease	**Vector(s)**	**Causal organism**	**Reservoir**	**Risk at PoE**	**Vector's Mode of Entry (Pathway)**
Plague	Xenopsylla cheopis	*Yersinia pestis*	*Xenopsylla cheopis*	Low	Unaided
Murine typhus	Xenopsylla spp.	*Rickettsia typhi*	*Xenopsylla spp*	Moderate	Unaided
Salmonellosis	Rats	*Salmonella spp.*	Rats	Low	Unaided
Rickettsial pox	*Allodermanyssus sanguineus*	*Rickettsia acari*	Mice, Rats	High	Unaided
Rat-bite fever	Rats	*Streptobacillis moniliformis*	Rats	Low	Unaided
Leptospirosis	Rats	*Leptospira spp.*	Rats, domestic animals, cattle	Low	Unaided

5 TRANSPORT CONNECTIONS BETWEEN EUROPEAN UNION AND EAST AND SOUTH-EAST ASIA IN ASPECT OF VECTOR INTRODUCTION RISK

5.1 TRANSPORT CORRIDORS

A transport corridor is an area where one or more modes of transport operate and share a common course and specifics of freight transportation. **Figure 14** shows 10 Pan-Europa Transport Corridors entwining Europe. Through this network, European countries have connections with railroads and car roads reaching up to China and by sea – to Japan.

Figure 14: Pan-Europa Transport Corridors

10 Pan-Europa Transport Corridors	
1	*Helsinki – Tallinn – Riga – Vilnius – Warsaw* *Helsinki – Tallinn – Riga – Kaliningrad - Gdansk*
2	*Berlin – Poznan – Warsaw – Minsk – Orsha – Moscow – Nizhny Novgorod*
3	*Dresden – Wroclaw – Katowice – Lviv - Kyiv*
4	*Dresden / Nuremberg – Prague – Brno – Bratislava – Budapest – Arad – Bucharest – Constanca* *Dresden / Nuremberg – Prague – Brno – Bratislava – Budapest – Arad – Sofia – Thessaloniki / Istanbul*
5	*Venice – Ljubljana – Budapest – Uzhhorod – Lviv - Kyiv* *Rijeka – Zagreb - Budapest – Uzhhorod – Lviv - Kyiv* *Ploce – Sarajevo - Budapest – Uzhhorod – Lviv – Kyiv* *Bratislava – Zilina – Uzhhorod – Lviv - Kyiv*
6	*Gdansk – Poznan* *Gdansk – Katowice – Ostrava – Brno* *Gdansk – Katowice – Zilina*
7	*The Danube River: Vienna – Budapest - Belgrade*
8	Durres – Skopje – Sofia – - Dimitrovgrad - Burgas - Varna
9	*Helsinki – St. Petersburg – Moscow – Kiev – Odessa* *Helsinki – St. Petersburg – Moscow – Kiev – Chisinau – Bucharest – Dimitrovgrad – Alexandroupolis* *Helsinki – Pskov – Orsha – Gomel – Kiev – Odessa* *Helsinki – Pskov – Orsha – Gomel – Kiev - Chisinau – Bucharest – Dimitrovgrad – Alexandroupolis* *Klaipeda – Vilnius – Minsk – Gomel – Kiev- Odessa* *Klaipeda – Vilnius – Minsk – Gomel – Kiev - Chisinau – Bucharest – Dimitrovgrad – Alexandroupolis* *Kaliningrad – Vilnius – Minsk – Gomel – Kiev – Odessa* *Kaliningrad – Vilnius – Minsk – Gomel – Kiev - Chisinau – Bucharest – Dimitrovgrad – Alexandroupolis*
10	*Salzburg - Ljubljana / Graz – Zagreb – Belgrade – Nis – Skopje – Igoumenitsa – Thessaloniki* *Salzburg - Ljubljana / Graz – Zagreb – Belgrade – Nis – Sofia* *Budapest – Belgrade - Belgrade – Nis – Skopje – Igoumenitsa – Thessaloniki* *Budapest – Belgrade - Nis – Sofia*

(***Source***: *Wikipedia/org/wiki/Transport_corridor*)

Overland trade between China and Europe dates back more than two millennia. The Silk Road which carried not only silk could be highly profitable. At different times in

history, oases along the routes – for example Khiva, Bukhara and Samarkand – were amongst the largest cities in the world.

The destruction of overland trade was caused when Portuguese sailors discovered the sea routes from Europe to Asia around the Cape of Good Hope around 1500. For the next 500 years, the sea was the dominant mode of transport between Europe and East Asia (46).

In the 20th century, several rail links were constructed in Asia, but none was a significant carrier of China–Europe freight. The most important was the Trans-Siberian railway built by Russia between 1891 and 1905 (46, 52).

During the 20th and 21st century, economic growth in countries of Europe and Asia has been accompanied by an increase in the exchange of goods and in demand for transport services by air, sea, rail and road. Air transport is the most expensive form of transport service, while maritime transport is much less expensive but takes a great period of time to reach a destination. Development of rail and road links from China and other Asiatic countries aims to construct transport through less expensive modes than aircrafts and faster modes than maritime travel (46, 71).

The value of goods transported by rail from China to the European Union increased between 2011 and 2016 (up to 194.6%), while decreasing for maritime and air transport. Since 2011, regular services were established on railway routes between several Chinese and European cities (64).

Between 2011 and 2015, at least nine different routes had been investigated (**Table 13**). Some of these routes used the Trans-Siberian railway, e.g. Harbin–Hamburg or Suzhou–Warsaw, but most used the route across Kazakhstan, as in **Figure 15,**

Figure 16, Figure 17 and **Figure 18.**

Table 13: Railway Routes from China to the European Union, to the end of 2015

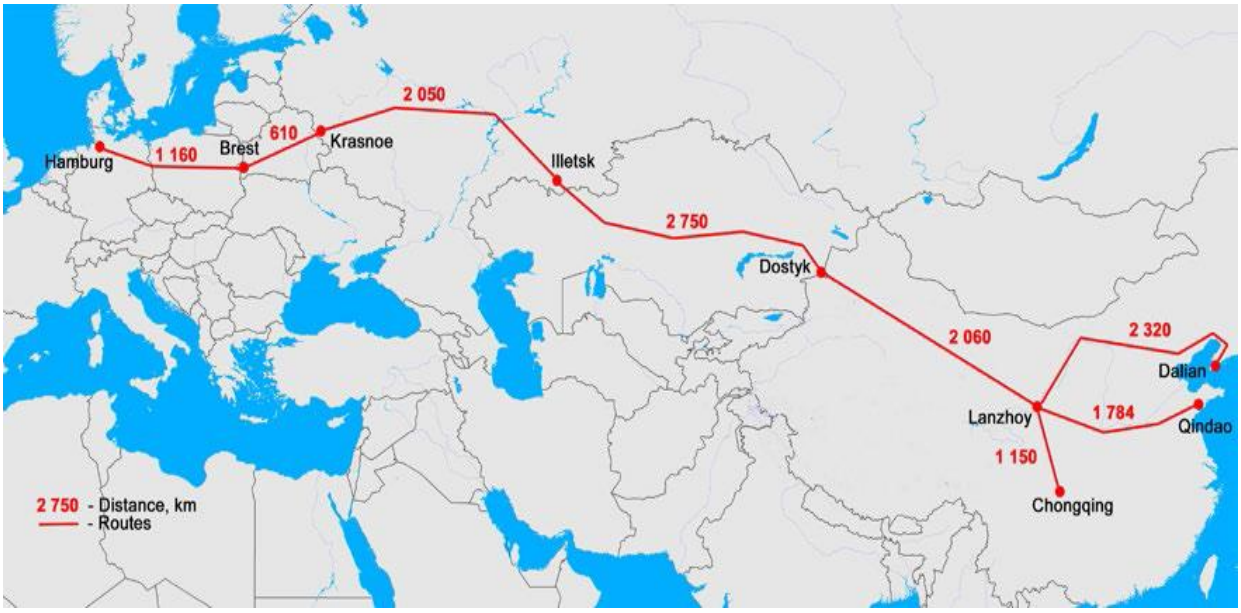
Route	**Start**	**Length** (km)	**Duration** (days)
Chongqing–Duisburg (DE)	July 2011	11,179	16
Wuhan–Mēlnik (CZ)	October 2012	10,863	16
Suzhou–Warsaw	November 2012	11,200	18

(PL)			
Chengdu–Łódź (PL)	April 2013	9,826	10.5
Zhengzhou–Hamburg (DE)	July 2013	10,124	19–20
Yiwu–Madrid (ES)	November 2014	13,052	21
Hefei–Kazakhstan; Hefei–Hamburg (DE)	June 2014	c11,000	15
Changsha–Duisburg/Moscow / Tashkent	October 2014	11,808	18
Harbin–Hamburg (DE)	June 2015	9,820	15

*(**Source**: UNECE, Euro-Asian Transport Linkages, modified)*

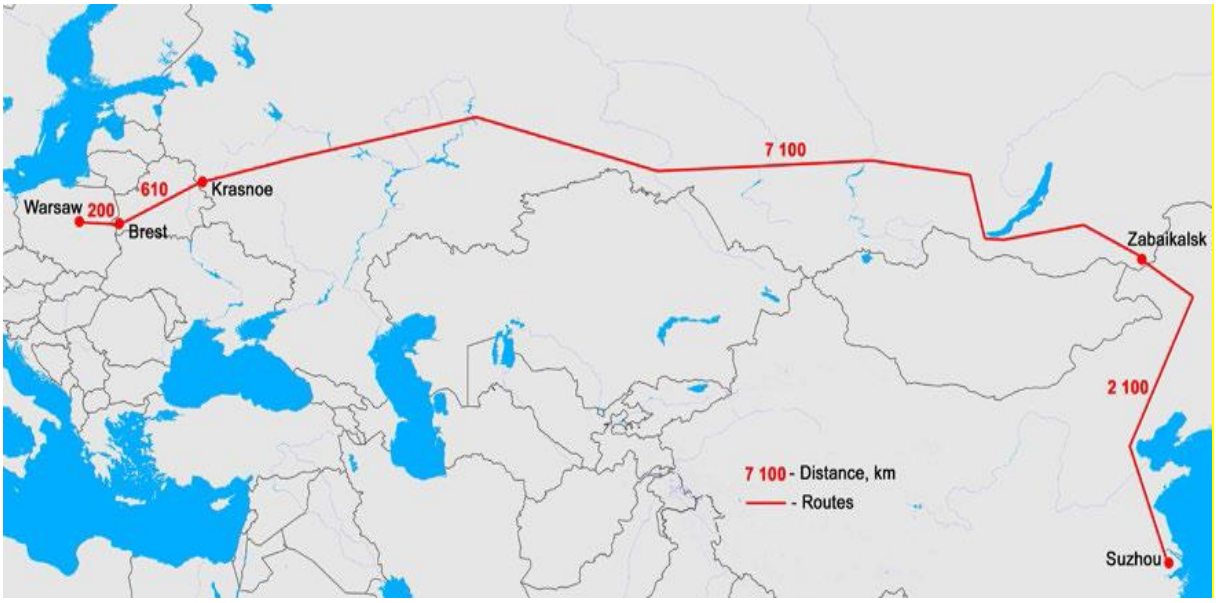
The process continued after 2015. In April 2016, the first China–France train went from Wuhan to Lyon in 15 days; in January 2016 a Yiwu–Teheran train reached Iran in 14 days. In January 2017, the first China–UK train went from Yiwu to London. By the end of 2017 the "Land Bridge" had connected 35 Chinese cities and 34 European cities by rail. Some connections were one-off trials, while other routes flourished. The Duisburg–Chongqing–Duisburg service ran on a schedule of three times per week in 2016 and became a daily service in 2018. Yiwu–Madrid has been a popular route, now offering a regular once-weekly service, and services to Łódź have also flourished (46, 64). In January 2020, a rail connection between the Chinese city Xi'an and Euroterminal Sławków in Poland was open. A container train needs 14 days to complete the 9477km journey between Asia and Europe (45).

Figure 15: TransContainer Service Europe – China



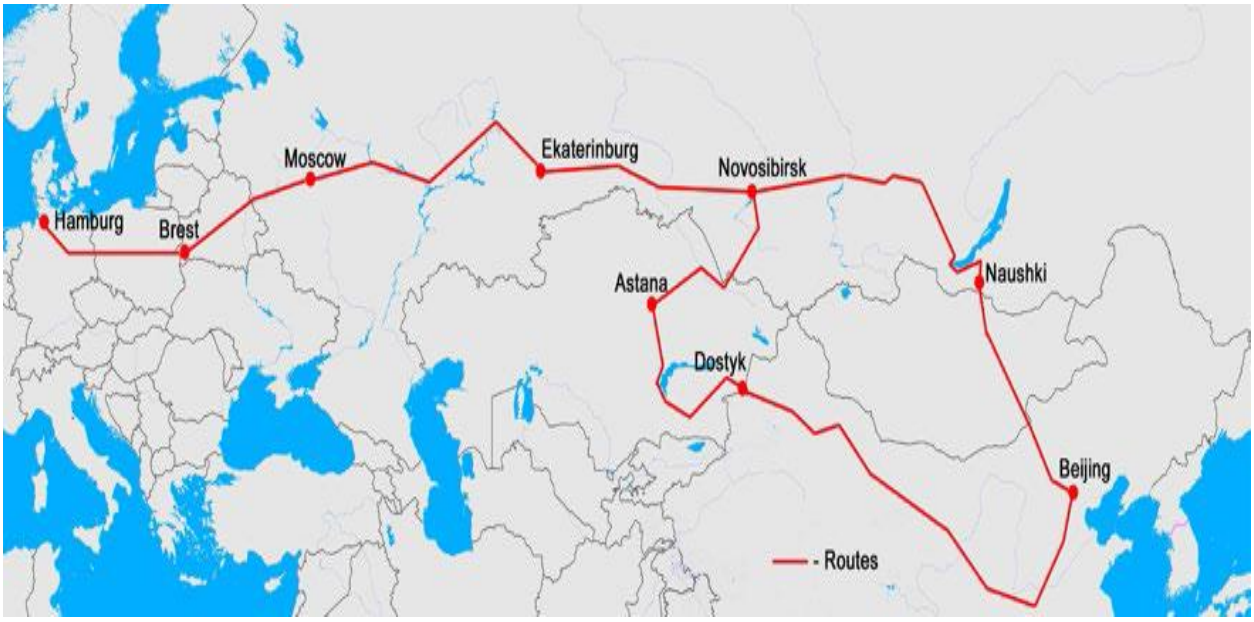
***Source**: Transcontainer, CCTP (Ann. TSR Digest 2015, Coord. Council on Trans-Siberian Transp. Int. Association 2016, publ. in Euro-Asian Transport Linkages. UNECE, New York and Geneva 2019)*

Figure 16: TransContainer Service Souzhou (China) – Warsaw (Poland by TransContainer)



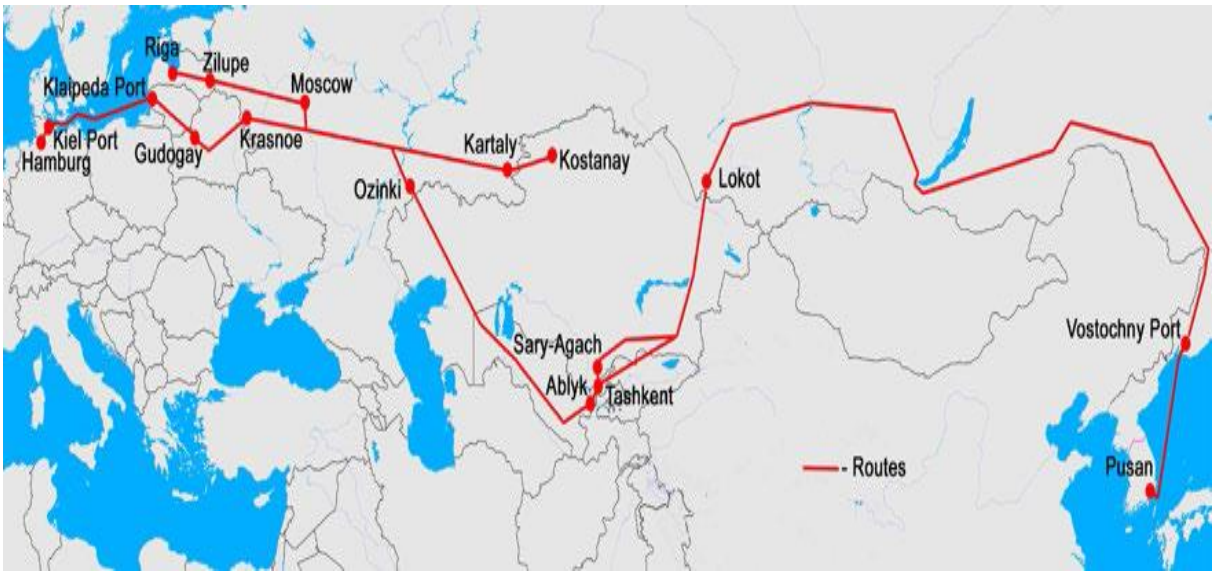
***Source:** Transcontainer, CCTP (Ann. TSR Digest 2015, Coord. Council on Trans-Siberian Transp. Int. Association 2016, publ. in Euro-Asian Transport Linkages. UNECE, New York and Geneva 2019)*

Figure 17: TransContainer Service Hamburg - Beijing



***Source**: Transcontainer, CCTP (Ann. TSR Digest 2015, Coord. Council on Trans-Siberian Transp. Int. Association 2016, publ. in Euro-Asian Transport Linkages. UNECE, New York and Geneva 2019)*

Figure 18: TransContainer Service from the Republic of Korea - Europe



***Source:** Transcontainer, CCTP (Ann. TSR Digest 2015, Coord. Council on Trans-Siberian Transp. Int. Association 2016, publ. in Euro-Asian Transport Linkages. UNECE, New York and Geneva 2019)*

As data shows in **Table 13**, regular transport service has been established between China and European towns. In 2014 the direction East–West was more intensively exploited than West–East: 252 block trains vs. 72 respectively (**Table 14**).

Table 14: Block container Trains Europe – China in 2014

From	To	Number of runs
China – Europe (westbound)		
Zhengzhou	Hamburg	52
Chongqing	Duisburg	79
Chongqing	Cherkessk	6
Chengdu	Lodz	25
Wuhan	Places in Czechia, Germany and Poland	37
Souzhou	Warsaw	43
Yiwu	Madrid	4
Yiwu	Places in Poland	2
Hefei	Places in Germany	2
Shixjeczy	Chelyabinsk	1
Kunming	Rotterdam	1
Europe – China (eastbound)		
Duisburg	Chongqing	33
Hamburg	Zhengzhou	21
Madrid *	Yiwu	2
Hamburg *	Wuhan	9
Brest *	Souzhou	6
Brest	Shenyang	3

* New routes
Source: Annual TSR Digest 2015. CCTT, 2016

(***Source:*** *16, modified)*

Roads

It is planned that the Chinese city of Shanghai will be connected by road to the German port of Hamburg through a highway. The governments of China, Kazakhstan, Belarus and Russia have approved a project for the building of a new transcontinental road, which will connect Asia and Europe. The length of the road will be a total of 8445 km, linking Hamburg with Shanghai. According to initiators of the project, the road will allow significantly faster delivery of cargo from China to Europe, and in the opposite direction. According to calculations by the Russian Ministry of Transport, thanks to the new road, cargo transportation between the two continents will not exceed 11 days,

which is almost three times faster than the current delivery time. In addition, this will also be significantly faster than maritime transportation from China to Europe, which currently takes around 45 days. It is expected that the new road will have a particular importance for the manufacturers of industrial and perishable goods. The new road will have hook-ups with the Suez Canal and the Northern Sea Route, as well as the Trans-Siberian Railway. The Russian stretch of road will have a length of about 2000 km, passing through the territory of Orenburg, Saratov, Tambov, Lipetsk, Bryansk, Smolensk and other regions of Russia. At the same time, the Kazakh section of the road will be about 2800 km, while the Chinese section of road will be about 3000 km. In the case of Kazakhstan, the road will pass through the local cities of Aktobe, Kyzylorda, Shymkent, Taraz, Korday, Almaty and some other cities and regions, while in China it will pass through Lanzhou, Zhengzhou and Lianyungang (53).

In October 2019 social media (22) informed about the opening of a road connection between China and Poland. The time for a 24-tonne truck to pass this route is about 12 days (45).

The Chinese Belt and Road Initiative (BRI) since 2017

The BRI holds the promise of extending the "Eurasian Land Bridge" to include both the current China–Belarus mainline to Baltic ports and Western Europe, and a China–Istanbul mainline with spurs to the Middle East and North Africa. Indeed, Chinese maps highlight a route to Europe south of the Caspian Sea through Iran and Turkey. The most important aspect of BRI plans is creating alternative routes and wider connections in order to make the network more useful and less vulnerable to hold-up by a transit country. Multiple routes are important because they enhance the range of transport options and they reduce hold-up possibilities, which are always a danger along a single route passing through several countries. **Figure 19** shows the range of planned trade sea and land routes. In 2017, China and 68 countries signed an agreement about renewal of a land transport route called the "New Silk Road", which will pass through Middle Asiatic countries, Kazakhstan, Russia, Belarus, Poland to West European countries (15, 33, 56). This initiative may affect 65% of the global population (39). It is planned that in 2020 about 5,000 container trains will run on the route Europa – China – Europa per year (73).

Figure 19: New Silk Road – One Belt One Road Initiative

(***Source:*** *https://businessinsider.com.pl/finanse/handel/pierwszy-pociag-xian-chiny-euroterminal-slawkow-nowy-jedwabny-szlak/c2he4njou)*

5.2 COMMODITY GROUPS

The choice of route depends on the type of good transported:

- *Non-containerized goods (mainly raw materials) are transported between Europe and Asia by maritime, pipeline or rail transport.*
- *Containerized goods are transported between Europe and Asia by mixed inland and maritime transport.*
- *High-value containerized goods are transported between Europe and Asia by mixed inland and air transport.*

Euro-Asian cargo for land transport includes high value and small volume goods, particularly containerised cargo. These are typically goods for which air transport would

be expensive and maritime transport slow. In January 2014, DHL introduced the first temperature-controlled rail container service between China and Europe on a year-round basis for temperature-sensitive products.

According to the United Nations Economic Commission for Europe (UNECE) statistics (16, 64), about 70 categories of goods were exported/imported between EU and Asian countries, many of them by rail transport. The main categories are included in **Table 15**, which shows that the flow of many goods is greater following the Asia – Europe direction, however trade has increased in time.

Table 15: Selected 15 categories of goods in Europe – Asia trade exchange

Relative intensity of transport of each category of goods, in the direction Europe – Asia or Asia – Europe is shown by the number of "+".

Category of commodity	Europe – Asia direction	Asia – Europe direction
Live animals	+++	+
Animal originated products	++	+++
Trees, plants, ornamental plants	+++	+
Vegetables, roots, edible	++	+++
Fruits and nuts, citrus, melons	+	+++
Coffee, tea, spices	++	+++
Oil seeds, grains, medicinal plants	++	+++
Prepared animal fodder, residues, wastes	++	++
Rubber, rubber products	+	++
Miscellaneous manufactured articles	+	+++
Textiles clothing	+	+++
Textiles, tapestries, woven fibres	+	+++
Stone, plaster, cement, asbestos	++	+++
Aluminum, Nickel, Zinc, Tin	+	++
Electronic articles	+	+++

(***Source:*** *Euro-Asian Transport Linkages, UNECE, modified)*

Euro-Asian trade was largely transported by sea, according to organizations such as the United Nations Conference on Trade and Development (UNCTAD), Eurostat, the International Air Transport Association (IATA), the International Union of Railways (UIC) and Boeing Corporation. More than 95% of the volume and nearly 70% of the value (in United States dollars) of cargo was transported by maritime routes. Air cargo between Europe and Asia was less than 2% by volume, but over 30% by value. Railways carried 1% of volume and more than 2% of the value. The road transport of goods between China and Europe (without a change of trucks or transhipment en route) began in 2017 (56).

From 2011 to 2016, the value of goods transported by rail between Europe and Asia increased, while the value decreased for maritime and air transport. Thus, some expensive cargo was moved from sea to rail transport. The main advantage of rail as compared to maritime is that it is more rapid. In 2015, the number of runs increased by 255 trains compared to 2014 (25% more), including 581 block trains between China – Europe – China which increased by 327 trains (or by 2.2 times) (56).

Cargo included Internet Technology products (mobile phones, computers, etc.), clothes, shoes, automobiles and spare parts, bakery products, wine, coffee beans, etc. Due to the growth in e-commerce, postal items were expected to be significant and to increase transport volumes between China and Europe.

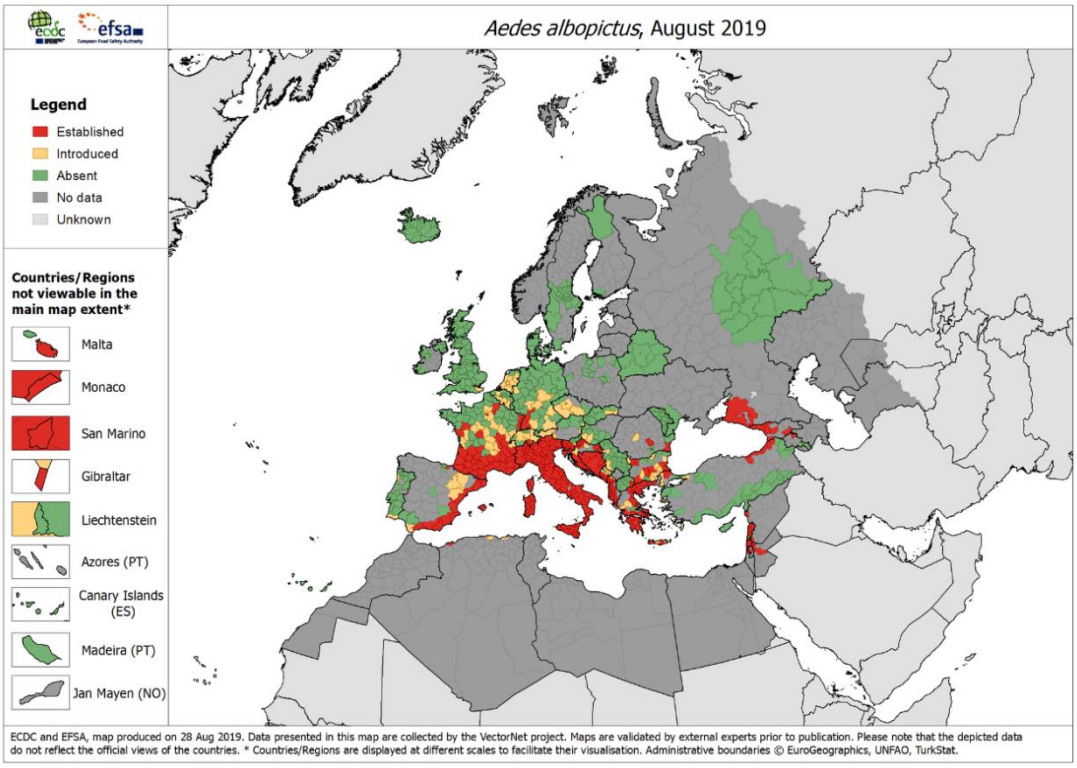
5.2.1 Risk of "unexpected passengers" – disease vectors conveyance through ground crossings at the East and East - South border of EU

Mosquitoes

Although trade and travel are important in the introduction and subsequent dispersion of mosquitoes, climate suitability is also believed to have been an important factor. Warm seasonal and annual temperatures and ample rainfall in many regions in Europe offer conducive climatic conditions for *Aedes albopictus* – one of the world's most invasive vectors (55). The introduction and geographical expansion of the vector has coincided with favourable climatic conditions in France, the Balkans, the eastern coasts of Spain and the Adriatic Sea, the Benelux countries and western Germany (57). Considering the transport corridors Asia – Europe as it is shown in the previous chapter,

the freight exchange between countries of these two continents is growing from year to year (64). Both existing and planned great hubs on ground crossings where containerized goods had been reloaded to transport further by trans-European routes. As Thomas et al. (62) simulated, there can be an increasing risk of introducing the *Aedes albopictus* mosquito when climatic suitability is higher and freight via train is increasing. Such a situation can be created on hubs at the South–East EU border, where ground crossings (with intensive commodity flow: Bulgaria–Turkey, Romania-Ukraine) lay in climatic zones suitable for *Ae. albopictus*. However, some other parts of Europe that have not yet been invaded by this vector can be climatically suitable for *A. albopictus* and lay on the main transport routes from East to West (60).

Figure 20: Aedes albopictus in Europe – distribution map

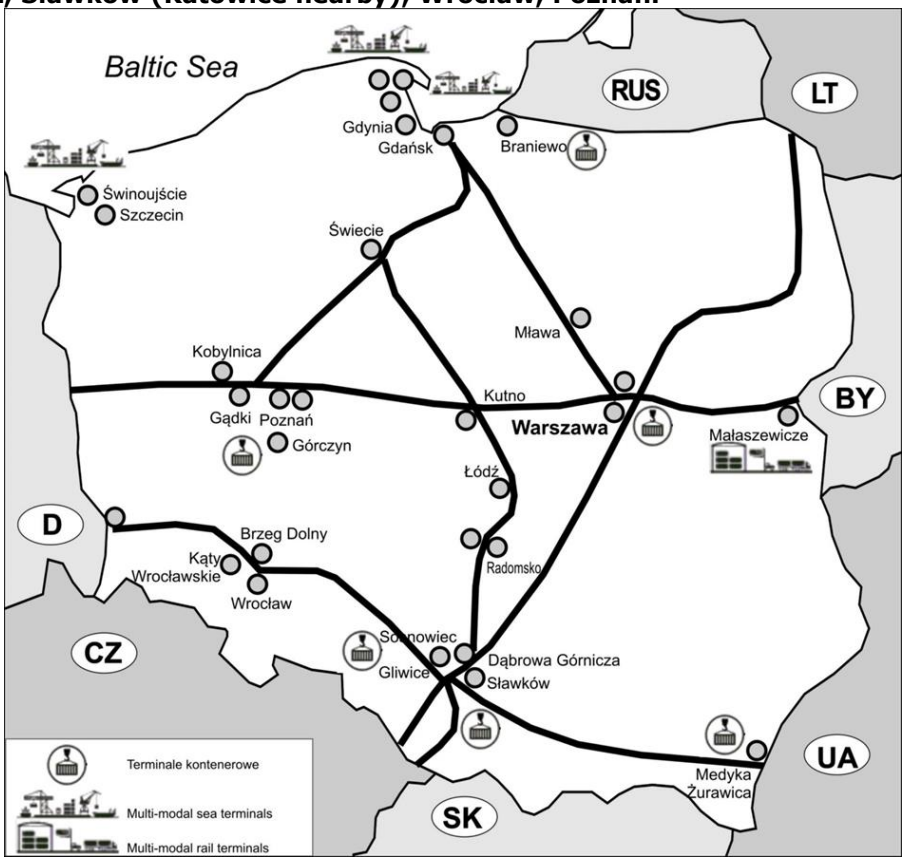


(***Source:*** *https://ecdc.europa.eu/en/disease-vectors/surveillance-and-disease-data/mosquito-maps)*

Several localities in Poland along the transportation corridors from East to West could be an example of regions where suitable conditions for a Tiger Mosquito could exist now and in the future (22). **Figure 21** shows a system of international and national roads and railway connections in Poland important for transit of goods in the East–West direction. The main logistic centres are: Brest/Terespol and Malaszewicze on the Poland–Belarus border; Medyka/Żurawica on the Poland–Ukraine border; inland logistic centres: Warsaw, Łódź, Sławków (Katowice nearby) and Wroclaw, Poznań.

Figure 21: A system of international and national roads and railway connections in Poland important for transit goods in East – West direction

The main logistic centres are: Brest/Terespol and Malaszewicze on the Poland–Belarus border; Medyka/Żurawica on the Poland–Ukraine border; Inland logistic centres: Warsaw, Łódź, Sławków (Katowice nearby), Wroclaw, Poznań.



(***Source:*** *Gliniewicz A., Rocz.Panstw.Zakl. Hig.2019, 70(4): 410-416)*

Minimum environmental requirements for *Ae. albopictus* are (5, 57):

Avg. year temp. > 11st.C

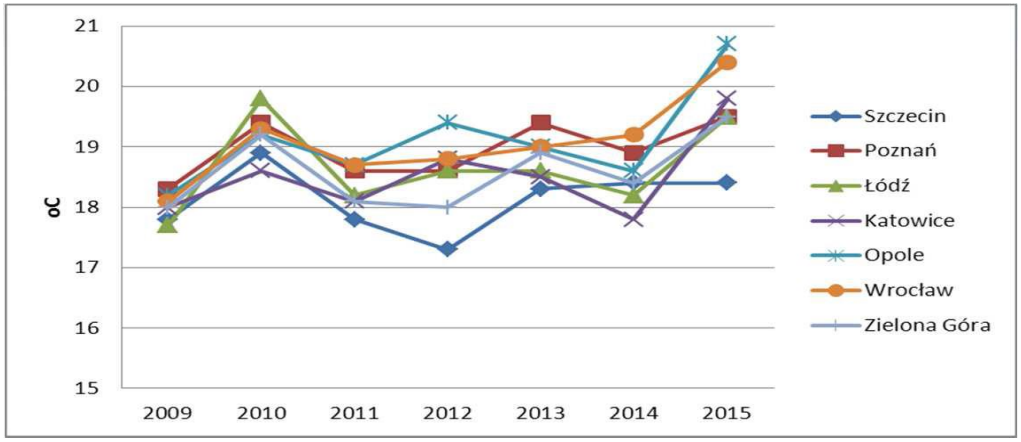
Avg. Summer temp. (2 generations) > 17st.C

Avg. Winter temp. (eggs diapause)>-2st.C

Rain > 500mm/year

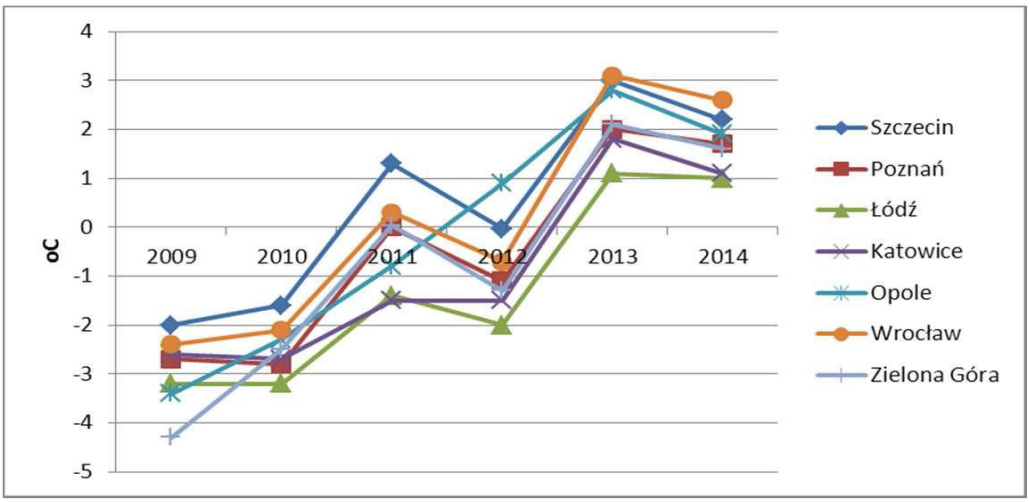
Figure 22 and **Figure 23** present data concerning winter and summer temperatures. Comparison with minimum requirements of the *Aedes albopictus* mosquito showed that environmental conditions in analysed towns could be sufficient for surviving 2 generations of *Ae. albopictus* and overwintering of eggs. However, there is no timely mosquito monitoring in Poland.

Figure 22: Avg. summer months temp. in several towns in Poland – main centers of East – West trade



(***Source:*** *Gliniewicz A, Rydzanicz K: Choroby przenoszone przez komary – czy są zagrożeniem w Polsce? Mat. VII Międz. Konf. Zdrowie publiczne i współpraca transgraniczna, Ostróda 23-25.05. 2016: 8 – 9 – presentation)*

Figure 23: Avg. winter months temp. in several towns in Poland – main centers of East – West trade



*(**Source:** Gliniewicz A, Rydzanicz K: Choroby przenoszone przez komary – czy są zagrożeniem w Polsce? Mat. VII Międz. Konf. Zdrowie publiczne i współpraca transgraniczna, Ostróda 23-25.05. 2016: 8 – 9 – presentation)*

On the other hand, trade companies work to shorten the time required for delivery of goods from Asia, which now reaches between 10.5 and 21 days (**Table 14**). In this timeframe, adult mosquitoes can survive in appropriate conditions (humidity and temperature).

Table 15 lists categories of commodities transported from China to Europe - among them are ornamental plants – and several of them are transported in water or a moist substrate. This enhances the probability of transportation of mosquitoes' eggs or larvae. One method of introducing *Aedes albopictus* to the European region (Benelux countries) was an import of Lucky Bamboo plants which were transported in small containers with water (larvae of mosquitoes developed in this water). Another method of introduction was through the export of used tires, which were then transported from ports via car transport across Western European countries (25, 26, 57).

In summary, considering trade routes and conditions, freight transport from Asia to Europe could play a role in the introduction of *Ae. albopictus* into several European territories, both where this mosquito is established now and also new territories with suitable climatic conditions.

Analyses in accessible literature and publications from the European Centre for Disease Prevention and Control (ECDC) (25, 26, 55) showed that other invasive *Aedes*

species in North and Central Europe have not found suitable environmental conditions to expand until now, even with the introduction of cases which have taken place. *Anopheles* mosquitoes could accompany mostly living beings: travelling people or transported animals; they could also be transported in the form of eggs or larvae.

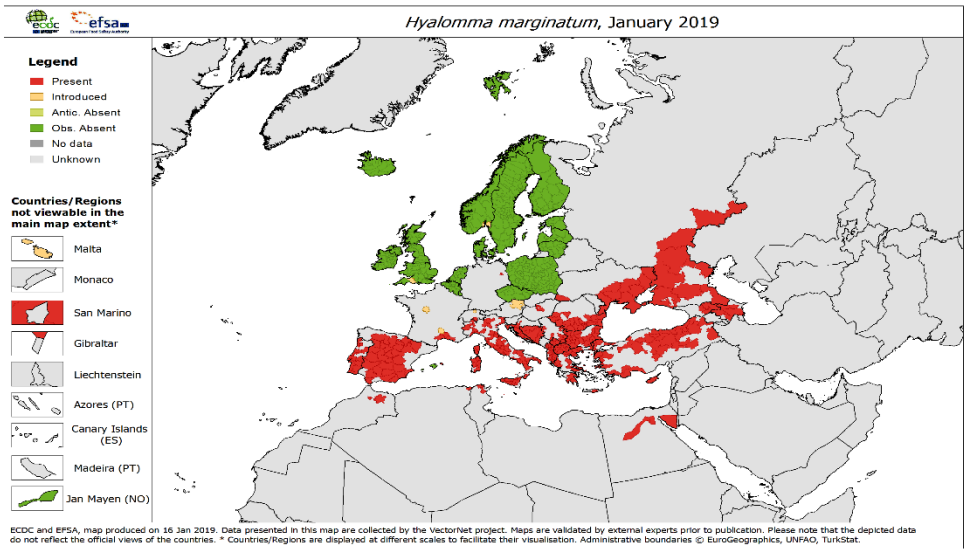
Generally, the inflow of alien mosquito species must be continuous or at least multiple in order to establish populations in a new area (38). However, changing climatic conditions should be taken into account; several territories which were previously too cold can now be warmer and more suitable in recent times as well as in the future for mosquitoes (40).

Ticks

Most ticks can reach new territories on their host's bodies, and migratory birds can be the source of introducing ticks. However, these arthropods tend to not build stable populations when they are transported a long distance between continents. Ticks have a greater chance of becoming established in a new environment when transported on birds at shorter distances – for example moving from East to West or South to North Europe on birds of one species changing their territory in autumn or spring (26, 35).

Livestock transported into European countries from East–South territories (South Europe and Asia) could be infested by *Hyalomma* ticks (31). Living animals are included as one of the commodity categories transported from China to Europe, and there is a possibility that ticks may be transported on them as well. Despite a danger of introducing new tick species, animal transports should be carefully inspected and veterinary checked before transportation. *Hyalomma marginatum* and *Hyalomma rufipes* are two host tick species, which are mainly distributed in southern Europe, Africa and middle-eastern Asia (**Figure 24**). In recent years, these tick species have been found sporadically in Germany, but they do not belong to the autochthonous tick fauna in Germany (6).

Figure 24: Hyalomma marginatum in Europe – distribution map



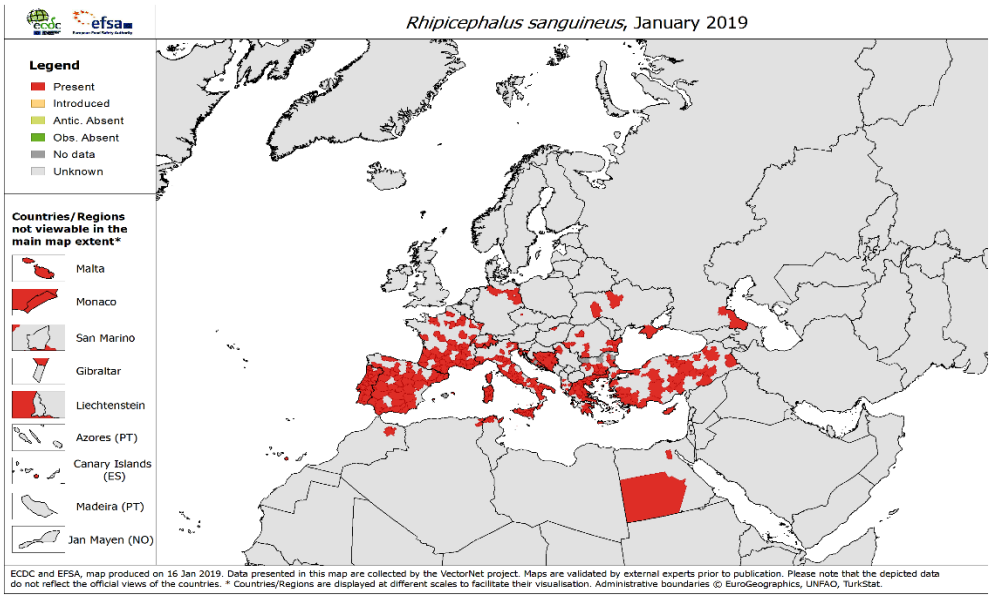
(***Source:*** *https://ecdc.europa.eu/en/disease-vectors/surveillance-and-disease-data/tick-maps)*

People returning from holidays (as well as their pets) can be carriers of ticks living in south and east-south territories: *Hyalomma spp. / Ripicephalus spp.* (24, 26).

The *Ripicephalus sanguineus* tick is an arachnid of the Mediterranean and Black Seas Basins. It is found on dogs which have been taken on holidays to the south, and have then carried ticks when they returned back to their homes. As of July 2019, 15 new reports were submitted (from January 2019) (35).

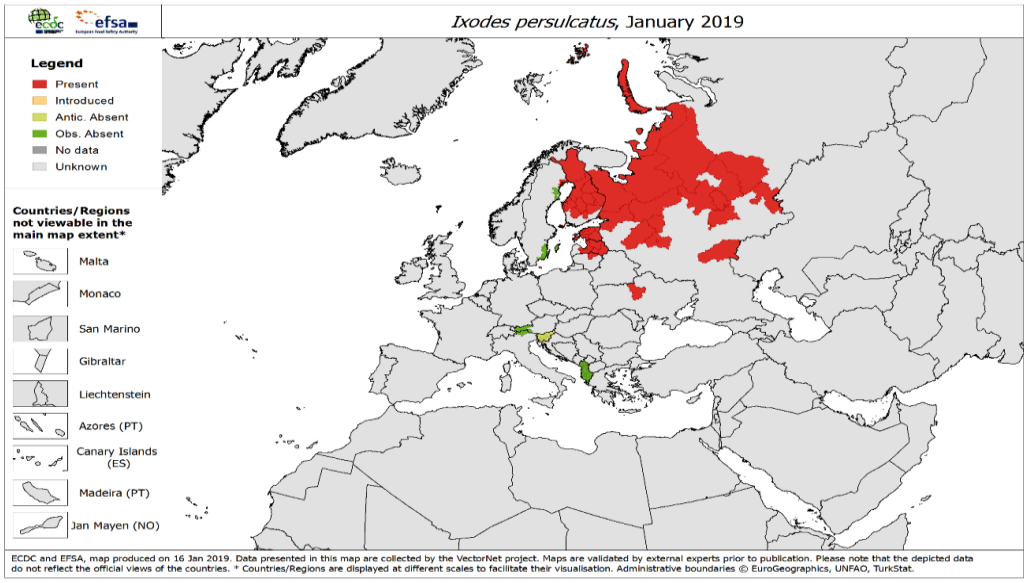
Ixodes persulcatus is a north European tick, which can accidentally be brought into a territory on humans (e.g. hunters), dogs or migratory birds as a stowaway.

Figure 25: Ripicephalus sanguineus in Europe – distribution map



(***Source:*** *https://www.ecdc.europa.eu/en/disease-vectors/surveillance-and-disease-data/tick-maps*)

Figure 26: Ixodes persulcatus in Europe – distribution map



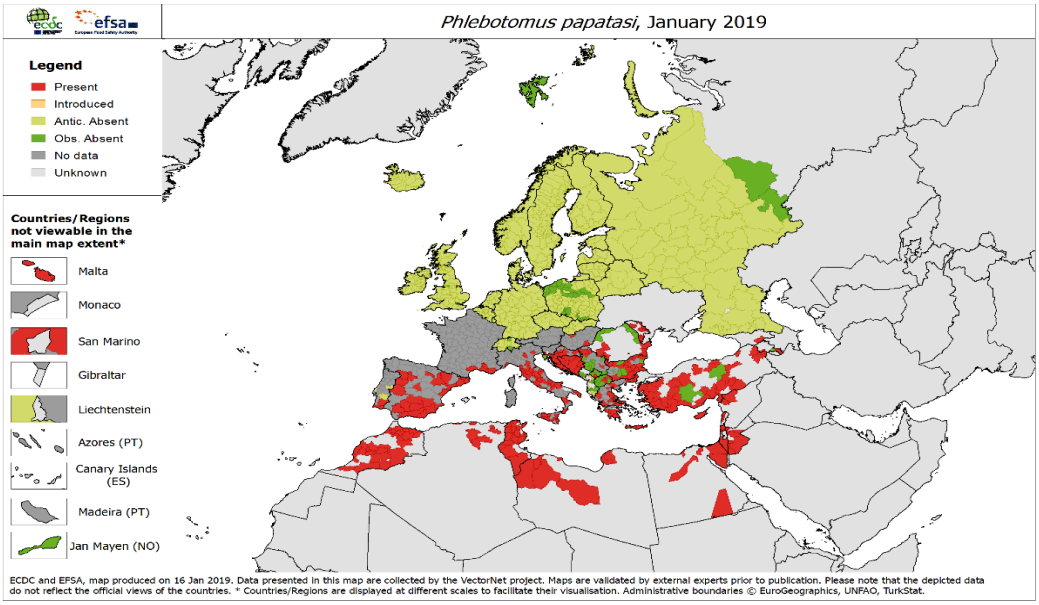
(***Source:*** *https://www.ecdc.europa.eu/en/disease-vectors/surveillance-and-disease-data/tick-maps*)

In many European countries tick fauna are recognized and monitored. Monitoring of ticks can create issues at ground crossings, since finding small arthropods on the body or clothing of a passenger or on his pet requires special procedures, which are impossible in most situations. Exotic ticks have been found occasionally when travellers went to the doctor or veterinarian, or on imported exotic animals.

Phlebotomine Sandflies

Phlebotomine sandflies occur in tropical and subtropical climatic zones, extending their area of occurrence to North–West and Central territories in Europe. Their invasion to new areas is carried out by wind and on journeys with animals (transport of live animals or tourists with pets). As shown on the map in **Figure 27**, Phlebotomine sandflies occurred in south Europe, Balkan countries, Turkey and North Africa. These are typical touristic holiday destinations for European travellers. If average temperatures in North and Central European territories were above 15°C during the three summer months and there was sufficient moisture in the environment, sandflies could develop there. Due to climate anomalies, this scenario became true for several regions (32, 36).

Figure 27: Phlebotomus papatasi - distribution in Mediterranean Area



(***Source:*** *https://ecdc.europa.eu/en/disease-vectors/surveillance-and-disease-data/phlebotomine-maps*)

Human External Parasites: Fleas, lice and scabies

Fleas can extend their territory together with their hosts. Many fleas live on specific animal species and occur where they live. Changing the living area of an animal specimen causes all external parasites to accompany the animal. This is also true for people and their belongings, which can be carriers of external parasites.

Several flea species, among them the oriental rat flea - *Xenopsylla cheopis* (which is the vector of *Yersinia pestis,* a plague causative agent) parasitize on rats. Therefore, rat proofing and rat control are important actions which ought to be undertaken to prevent the dissemination of fleas.

Lice and scabies occur worldwide, and in the era of common and often undertaken journeys, they spread easily among people. This can occur particularly when several people are gathered together – for example among schoolchildren, crowded touristic areas, hotels with a high number of guests with short duration of stay, refugee camps, as well as during wars or humanitarian crises. These parasites disseminate through contact of people and the sharing of personal belongings or clothing by several people. Scabies is a serious public health problem in almost every country; it must be addressed through rapid diagnosis and effective control.

Infestations of body louse are rare, but head lice cases occur more often in many territories and can appear among tourists. Thus, products for control of lice should be easy accessible for travellers.

Cockroaches and Flies

Cockroaches are common in all areas of the world, with the exception of arctic areas. Species are present in both human dwellings and the lived environment (outside). Cockroaches can invade means of transport – including ships, aircrafts, trains - and are present everywhere food and water can be found. Many categories of transported commodities can serve as suitable food/harbourage for several species of cockroaches, which can travel between continents. Exotic tropical species were found in Sweden (the *Pyenoscellus surinamensis* was established in heated greenhouses), and *Periplaneta australasiae, Supelpa longipalpa* were recorded from the Czech Republic (25).

Transported goods should be carefully controlled if they are cockroach free, because these insects can survive and develop in hidden places during long journeys.

No area of the world is free of flies. They are common around human settings, animal farms, food processing plants, restaurants, hotels, etc. Houseflies are elsewhere, thus it is difficult to consider them as an invader. Many fly species are called "synantropic flies" as they are present in anthropogenic environments, close to people.

Flies can accompany living animals in transport. Where living animals are present, manure exists; in this medium many species of flies can develop. It is therefore necessary to regularly clean animal containers and use IGR agents to prevent development of flies. Transported animals can carry the larva of fly species on their bodies, which develop in living organisms and are aliens in the new area. Such invasions can occur among tourists returning from tropical or subtropical climatic zones. Among species recorded as larvae in human bodies and animals alien to Europe were: *Cordylobia anthropophaga* (Africa, Arabian Peninsula) and *Wohlfartia magnifica* (Mediterranean area, Russia, China) (24).

The procedures of insect proofing and insect control should be applied during preparation of goods for transport, and during veterinary procedures when living animals will be transported.

Rodents

Rodents compete with humans for food and goods in the same environment. They are a real danger to almost every category of commodity. If rodents do not eat, they destroy or contaminate goods. Rodents can disperse by travelling long distances and are able to reach every means of transport. Commensal rodents (Norway Rat - *Rattus norvegicus*, Roof Rat - *Rattus rattus* and mice) are common in every part of the world and are carriers of external parasites. When they reach the target territory via the transport, fauna present on their bodies can be carried to a new place (68).

The most important measure is rat proofing, such as the safe construction of containers which rodents cannot enter. Transported goods should be carefully checked for the presence of commensal rodents. For control of rat and mice populations, it is important to play a prophylactic role and ensure that transport containers and goods are inaccessible to rodents (68).

5.3 POSSIBLE ACTIONS WHICH CAN BE UNDERTAKEN TO STOP INVASION OF VECTORS INTO A NEW TERRITORY

Disease hazards caused by pathogens carried via arthropod vectors (which can arise at ground crossings at the East and South–East EU border) should be considered with the following aspects taken into account (38):

1. Presence of vectors infected by pathogens in the place of loading goods or starting point of passenger's journey.
2. Transport or journey conditions – if they allow survival of some development form of vector.
3. Transport of vector - incidentally (little chance of introduction) or multiple (greater chance of introduction).
4. Conditions – suitability for vector organism to survive at the point of entry, or not.
5. Environmental conditions in the target area - suitability for survival or development of vector, or not.

Actions undertaken to stop the invasion of alien species - vectors into new territories - according to the above list of problems should be carried out:

- *at starting point of loading goods (or starting point of passenger journey),*
- *during transport,*
- *on crossing point at the border*
- *at the terminus where commodities were unloaded.*

Such operations are regulated by International Health Regulations (39), the European Union (1,7,8,9,11,13,20,47,48,49) and state laws (65,66,67).

Table 16 summarizes actions which can be undertaken to prevent invasions of alien species into EU territory.

Table 16: Possible actions which can be undertaken to stop access of alien species into a new territory

Vectors	**Mode of entry**	**Action undertaken to prevent access**	**Actions undertaken to prevent dissemination/establishing**
Mosquitoes	Transport of goods	Living animals- using veterinary repellents to repel mosquitoes, using insecticides to kill specimens Plants in water in container – keep containers closed, checking for mosquito larvae	Monitoring mosquito fauna at: -points of entry -regions, which are main centers of reloading or are great tourist exchange and the environmental conditions suggest possibility of survival of alien vector species -starting mosquito monitoring programme in Poland (transit country)
	Personal transport	Using repellents , using insecticides	
	Unaided disposal	-	
Ticks	Transport of goods	Living animals – protecting them by repellents and acaricides	Education – to better protect people, pets and livestock: leaflets, written materials, posters, tick monitoring programmes
	Personal transport	Persons and pets can be protected by repellents	
	Unaided	-	
Phlebotomine Sandflies	Transport of goods	Living animals – remove manure from transport containers, use IGR agents to stop larvae development, insecticides to kill flying insects	Education about Phlebotomine sandflies biology and their role as vectors, leaflets, written materials, posters
	Personal transport	-	
	Unaided	-	
Fleas	Transport of goods	Rat proofing, protecting goods and containers	Rat proofing, rat control procedures at ground crossing, transport and

		against commensal rodents	reloading hubs. Educational activity: leaflets, written materials, posters, trainings for professional pest control operators
	Personal transport	Transported pets should be free from fleas	
	Unaided	-	
Lice and Scabies	Transport of goods	-	Education: what to do when a person is infected by scabies or lice. Leaflets, written materials, posters, Trainings for personnel at PoE, educational materials for passengers
	Personal transport	Keeping hygienic conditions, avoid crowding, find medical advice (scabies), use antilife agents	
	Unaided	-	
Flies	Transport of goods	Living animals – removing manure, treat it with IGR preparations; insecticides to kill flying flies, transported animals should be protected against fly species, which larvae develop in the animal body. Fruits and vegetables – protected from decay	Education materials for passengers and personnel at PoE: leaflets, written materials, posters about nuisance flies, blood sucking and those which can cause myjasis
	Personal transport	-	
	Unaided	-	
Cockroaches	Transport of goods	Transported goods should be cockroach free (insect control, monitoring – sticky taps,	Education: possible exotic species of cockroaches which could be introduced, their environmental requirements, possibilities of establishment and dissemination, their role

		containers – protected by entry of cockroaches) cockroach control at starting point of transport	for public health, trainings for personnel , educational materials for passengers
	Personal transport	Luggage – checked by owners if it is cockroach free Lorries, trains, coaches - disinsected	
	Unaided	-	
Rodents	Transport of goods	Rat proofing, protecting goods and containers against commensal rodents	Rat proofing, how to protect against commensal rodents, rat control, education – role in public health, trainings for professional pest control operators
	Personal transport	Lorries, trains, coaches, vehicles – rat proofing, deratted	
	Unaided	-	

5.4 DISCUSSION

Vector organisms, as well as others, can change and expand their area of occurrence over time. This process was accelerated in the 20th and 21st centuries, which may be related to:

- globalization: intensifying trade in goods and increasing travel of people between continents and various climate zones (38, 42, 54, 69);

- climate change: many species find favourable conditions for living in new areas that are not yet climatically accessible to them, while others leave areas that are becoming inappropriate for them (69);
- urbanization of the environment: which is associated with higher temperatures in cities resulting from the intensive human economy (59);
- it should be also stressed that in many cases, the migration of vector organisms is independent of human actions – there is a natural tendency to expand to new territories because of evolutionary processes (37).

In Western and Central Europe, the expansion of the *Aedes albopictus* mosquito, a vector of dengue and Chikungunya virus has been observed since the 1970s. This mosquito has gradually taken over areas located in France, Germany, Italy, Spain, Switzerland and the Czech Republic. Autochthonous transmission of dengue has occurred repeatedly in France, Spain and Croatia (4, 28, 42, 63), mainly due to travel importation and then through local mosquitoes. Furthermore, other mosquitoes of the genus *Aedes* spp. which have the ability to expand beyond their original limits of occurrence, colonize new areas in Europe (e.g. *Aedes aegypti* was the vector of the dengue causative agent DENV-1 in Madeira island in 2012) (28). In Italy and France, autochthonous infections by Chikungunya virus were recorded in 2007 and 2010. In 2019, single autochthonous infections of West Nile Fever were reported to ECDC (28, 29) from Germany and Slovakia.

Ticks from the genera *Hyalomma* spp. and *Ripicephalus* spp. which were found in the past in the Mediterranean and Eurasian forest-steppe areas are also noted in more northern areas (43). Exotic species of cockroaches are brought to the countries of Europe along with transported goods (there are cases of their survival in heated greenhouses and hotels) (25). Travellers returning from tropical countries, infected with fly larvae developing in human and animal tissues, have reported to doctors.

Existing regulations governing the exchange of goods and the movement of persons between countries cover all aspects, from the preparation of goods to the dispatch/commencement of travel by people, to goods and people reaching their final destinations (39, 68).

Crossing the border between states (in this aspect - the state border between a country bordering the east or south-east side and a country of the European Union) is one of the stages included in legal regulations. It should be emphasized that goods are not always unloaded at transhipment centres on the border; in Poland such centres exist within the interior of the country (Warsaw, Poznań, Łódź, Sławków near Katowice), or containers are only opened at the destination. In addition to border controls, those that take place in customs warehouses in transhipment centres play a significant role in the control of transported goods. Therefore, proper preparation of goods for transport is even more important in the aspect of preventing arthropods-vectors from infesting them, and protecting containers and goods against rodents. These types of activities are recorded in transport documents controlled at the border crossing (39).

Custom and sanitary regulations regarding the flow of people across borders clearly specify control in situations of threats to public health (39). It should be stated that actions aimed at limiting accidental invasion of an arthropod-vector are difficult to be carried out by sanitary and border services, furthermore and can be burdensome for travellers. Some actions, despite their assumed effectiveness, cannot be carried out (e.g. passenger car, luggage, clothes). Therefore, it should be assumed that the source of vectors-stowaways at the border crossing may be passenger transport vehicles and people travelling with them. This route was confirmed in the case of the spread of the mosquito *Aedes albopictus* through ferry communication between islands in the Mediterranean Sea and in places along the Sun Highway on its European coast (57). Since it is not possible to carry out intensive eradication activities at border crossing points in passenger traffic, it would be necessary to strengthen public education, so that people increase their knowledge about vector organisms and their role in transmitting diseases, their occurrence, possibilities of accidental transport and means of protection against them.

At border crossing points with significant passenger traffic, or where goods are transhipped, it is reasonable to create a 400-meter vector monitoring zone, as proposed in the International Health Regulations (39). Such zones should also be created in customs warehouses and transhipment centres within transit countries (e.g. in Poland).

Existing provisions of law do not provide for this; one should therefore consider the legitimacy of their changes in this respect.

The provisions of international law (WHO and EU) (1,7,8,9,10,11,13,47,48,49) and national regulations since 2005 regulate every stage of the international flow of goods and people. However, it should be taken into account that the presence of alien arthropod-vectors has been signalled in many European countries since the 1990s (see chapter 1). Existing legal regulations provide control over the introduction of organisms - disease vectors into European Union countries from countries bordering it. However, the problem is the spread of vectors in areas within the European Union. Global warming can create more climatically suitable regions for vectors of diseases. The life cycle dynamics of the vector species, pathogenic organisms and the reservoir organisms are all sensitive to weather conditions. They can affect the survival and reproductive rates of vectors, their habitat suitability, geographical distribution and seasonal activity, and reproduction of pathogens within the vector (43, 54).

Control of these processes could be ensured by adequate monitoring of both disease and vector presence (43). This requires the involvement of human resources and measures, which is why it is currently carried out at random, in some areas and only in some countries (43). It would be particularly needed in countries when weather conditions influence the presence of vectors (e.g. Mediterranean countries) (43), or in countries with a high transit flow of goods such as Poland, and in the time of global warming. Due to the epidemiological significance, at minimum the mosquito fauna should be monitored around the transhipment centres of goods on the eastern border and within the country (perhaps here also appropriate legal regulations are needed).

5.5 CONCLUSIONS

1. Vector organisms can enter new areas along with goods, in luggage or clothing of travellers, as well as a result of the expansion of acreage occurring in natural evolutionary processes.
2. Expansion of Asia-Europe transport routes and shortening travel time can increase the risk of introducing vector organisms from Asian countries to Europe.

3. Existing legal regulations provide procedures to protect goods and persons against the transport of organisms-vectors at every stage of transport and travel.
4. Mass passenger and car traffic at border crossing points increase the likelihood of vector organisms entering as random stowaways, therefore it is proposed to intensify educational and training activities to make people aware of the dangers posed by the transport of alien species of arthropods and what preventive actions to take.
5. Unloading goods in a transit country (such as Poland) may take place at transhipment centres located near the border or inland. It is postulated to introduce a 400m vector monitoring zone around both.
6. Such a zone should also be taken into account at border crossings with heavy passenger and car traffic.
7. Due to climatic changes (making weather conditions more suitable for arthropod vectors in regions of concern) monitoring of at least mosquito fauna should be introduced as one part of preparedness policy.

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6 LEGAL GROUNDS FOR RESPONDING TO SERIOUS PUBLIC HEALTH THREATS OF CROSS-BORDER SIGNIFICANCE IN THE ASPECT OF LAND BORDER CROSSINGS IN EUROPEAN UNION COUNTRIES DETERMINED BY INTERNATIONAL LAW, THE WORLD HEALTH ORGANIZATION (WHO), EUROPEAN UNION (EU) AND POLISH LAW

Acronyms

NIZP-PZH: The National Institute of Public Health - National Institute of Hygiene
WHO: World Health Organization
EU: European Union
IHR (2005): International Health Regulations (2005)
ECDC: European Centre for Disease Prevention and Control
HSC: Health Security Committee
IVM: Integrated vector management
POE: Points of entry
ETIAS: European Travel Information and Authorization System
MoU: Memorandum of Understanding
SOP: Standard Operating Procedures
EVD Ebola virus disease
EFSA: European Food Safety Authority
EWRS: Early Warning and Response System
GDPR: General Data Protection Regulation

6.1 INTRODUCTION

The scope of this report is the identification / definition of legal grounds for responding to serious public health threats of cross-border significance in the aspect of land border crossings in European Union countries determined by international law, the World Health Organization (WHO), European Union (EU) and Polish law.

Being aware of the purpose of this report and the fact of a wide range of addressees, the report was divided into two parts: descriptive and tabular. Subchapters relating to the explanation and systematization of the sources of law, a description of the methodology of the report and instructions facilitating the use of it were identified within the descriptive part. Then, a general description of the basic documents related to this study was indicated and produced. The next subsection shows a summary and report of the connection of key topics identified jointly with project stakeholders. On the other hand, the tabular part contains a detailed identification and definition of legal grounds for responding to serious public health threats of cross-border importance in the aspect of land border crossings. The analysis was based on the methodology presented in the descriptive part.

The authors of the report adopted the legal status of the study on 1 April 2019.

6.2 THE DESCRIPTIVE PART OF THE REPORT

6.2.1 Explanation of basic concepts and systematics of sources of law

In the report, the respective expressions have the following meanings:

Source of law

The source of law has been defined as a text in which the provisions of applicable law are contained. Due to the scope of the research, the report was divided into three parts based on the criteria of the source of law.

The following categories have been distinguished:

- International sources, containing sources of industry law (International Health Regulations (2005), World Health Organization),
- EU sources,
- Sources of Polish law,

There is no universally applicable catalogue of sources of public international law. At the same time, the doctrine lists the following catalogue of sources of public international law, subject to the lack of a binding criterion of a given source of law:

- International conventions / agreements,
- International organizations law,
- Customary law,
- General rules,
- Decisions of international tribunals and views of doctrine,
- So-called gentlemen agreement,
- Unilateral acts of states.

EU legislation is divided into primary and secondary. The treaties (primary legislation) are the basis for EU action. Secondary legislation, e.g. regulations, directives and decisions, are set out in the treaties.

Every action taken by the EU is organized by the EU member countries. It sets out EU and its member countries. Under the Treaties, EU institutions can adopt legislation.

The secondary documentation includes:

- Regulations. A "regulation" is a binding legislative act. It must be applied across the EU. Schengen Borders Code is an example of "regulation".
- Directives. A "directive" is a legislative act that all EU countries must achieve. However, it is up to the individual countries.
- Decisions. A "decision" is an entity that is addressed (e.g. in an EU country or an individual company). For example Decision no. 1082/2013 / on the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No. 2119/98 / EC.
- Recommendations. A "recommendation" is not binding. A recommendation allows the institutions to make their views known and to suggest a line of action without imposing any legal obligation on those to whom it is addressed.
- Opinions. An "opinion" is an instrument in a non-binding fashion, in other words. An opinion is not binding. It can be issued by the main EU institutions (Commission, Council, Parliament), the Committee of the Regions and the European Economic and Social Committee. When laws are being made, the committees give opinions on their specific regional and economic view. For example, the Committee of the Regions.

The sources of law in Poland are divided into two categories, i.e. the universally binding law and the internal law. The universally binding law includes:

- The Constitution of 2 April 1997 - the supreme law in Poland,
- Ratified international agreements,
- Statutes (statute) - a fundamental source of law in the Sejm (the lower chamber of the Polish Parliament),
- Regulations (regulation) - executive acts passed by the statutes' authorized bodies (i.e. the President, the Prime Minister, the Council of Ministers, ministers and the National Broadcasting Council)

- The local government law - acts passed by the local government; their binding force extends only to the territory of the local government's jurisdiction

Second category is the internal law, e.g. resolutions of the Council of Ministers (orders of the Council of Ministers), orders of the President (orders of the President), orders of the Prime Minister (orders of the Prime Minister) - acts of internal character; they bind only the organizational units that are subordinate to the issuing authority.

6.3 METHODOLOGY

As part of the listed categories of legal sources, the regulations related to the subject matter were searched. Amongst other materials from official WHO publications, the database of EU legal acts (EUR-Lex) and the database of legal acts of the Republic of Poland (ISAP) were used.

The tabular part of the report was divided into 4 parts. In the first one, a thorough analysis of international regulations was made. In the second, particularly important provisions of the EU rank were developed. The third part contains an indication and description of relevant documents from the EU prospective. The fourth part includes national law (Poland).

The description of each legal provision or set of legal provisions was given the following attributes:

Origin of the Source of Law

In order to improve the effectiveness of the content reception for individual sources, the following abbreviations have been used:

- INT - International sources, containing sources of industry law (International Health Regulations (2005), World Health Organization),
- EU - Sources of European Union law,
- PL - Sources of law of the Republic of Poland,

Category Sources of Law;
Information about the name and date of publication;

Type of legal norm.
The following abbreviations have been distinguished and used:

- def - definition,
- hard - binding norm of substantive law, that is binding legal norms directly regulating relations between legal entities, specifying premises (facts) causing their creation, change or expiration. Also included are legal norms regulating specific duties, prohibitions or orders and providing for specific sanctions for non-compliance,
- soft - non-binding norm of substantive law,
- proc. - procedural law norms, that is legal norms regulating proceedings before the judicial and public administration authorities.

Indication of the material category referring to serious threats to public health of cross-border importance.

Three possible areas have been identified:

- carrying out preventive actions,
- threat detection,
- preventing the spread of threats.

More than one category can be assigned to a particular regulation or set of regulations:

- Indicating the recipient of the regulations;
- Range of application;
- Description of the regulation;
- Keywords;
- Interventions;
- Place of publication (publisher) and in important elements the use of QR Code, which will improve the readability of the reference

As part of the key words, in order to unify terminology and to enable the comparison of legal acts from various sources, the following expressions were adopted:

- Other prophylactics,
- Vaccination,
- Passengers
- Luggage,
- Cargo,
- Conveyance,
- Contact tracing,
- Obtaining data.

Based on the indications of public health experts, six particularly important areas have been identified under which various types of activities are described as Interventions in this report:

1. Collecting data - containing, inter alia the basis for data collection, types of data collected,
2. Information and education - conducting activities aimed at providing information to travellers and educating them,
3. Retention - concerns the area of detention, interruption of travel or non-admission at the border.
4. Surrendering to action - undertaking various types of activities related to public health,
5. Vector control,
6. An exchange of information - the basis, scope and method of information exchange.

As a result of the use of keywords and the unification of forms of intervention, the user of the report can independently filter individual categories of the report to search for and compile the range of regulations of their interest.

6.4 GENERAL DESCRIPTION OF THE BASIC DOCUMENTS RELATING TO RESPONDING TO SERIOUS THREATS TO PUBLIC HEALTH

This chapter indicates key documents relating to the aspect concerned, both on international and EU level. Although the WHO textbooks and other WHO studies do not have universally binding power, but provide practical guidance on specific topics, they are listed in this chapter.

Annex D provides a list of IHR law regulations, while **Annex E** and **Annex F** provide a list of EU detailed law regulations and EU general law regulations, respectively.

6.4.1 World Health Organization

6.4.2 International Health Regulations (2005). Third Edition.

International Health Regulations (2005) have been adopted on the Fifty-eighth World Health Assembly. The main aim of the International Health Regulations is the protection against the international spread of disease. In preamble in point 6th (7) it is requested to be a Director-General with the Health Regulations (2005). The purpose and scope of the regulations have been contained in *Article 2.* There are to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.

The principles are presented in Article 3 and are as follows:

1. The implementation of these Regulations shall be with full respect for the dignity, human rights and fundamental freedoms of persons.
2. The implementation of these Regulations shall be guided by the Charter of the United Nations and the Constitution of the World Health Organization.

3. The implementation of these Regulations shall be guided by the goal of their universal application for the protection of all people of the world from the international spread of disease.
4. States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to legislate and to implement legislation in pursuance of their health policies. In doing so they should uphold the purpose of these Regulations.

6.4.3 Documents related to surveillance and control

Handbook. Vector surveillance and control at ports, airports, and ground crossings. Geneva, World Health Organization, 2016.

The international Health Regulations (2005). This is a guide to the implementation of the International Health Regulations (2005). It provides technical advice and provides a comprehensive program for systematic monitoring of disease. In addition, this handbook is a service for IHR (2005) at points of entry and on conveyances.

This publication was developed jointly by the Department of Global Capacities, Alert and Response, Ports, Airports and Ground Crossings Team.

Handbook for Integrated Vector Management. Geneva, World Health Organization, 2012, WHO

Integrated vector management (IVM) is a rational decision-making process to optimize the use of resources for vector control. The aim of the IVM approach is to contribute to achievement of the global targets set for vector-borne disease control, by making vector control more efficient, cost effective, ecologically sound and sustainable. The intention of this handbook is to provide

to the managers of vector-borne disease control programmes, other officials in health and other sectors involved in vector-borne disease control with necessary guidance and an operational framework for the implementation of IVM.

van den Berg H, Mutero C, Ichimori K. Guidance on policy-making for integrated vector management. Geneva, World Health Organization, 2012.

This document is a guide to the control of vector-borne diseases. It was prepared at the same time as a handbook on integrated vector management (IVM).

Core structure for training curricula on integrated vector management. Geneva, World Health Organization, 2012.

The purpose of this document is to provide guidance for WHO regions preparing their own training curriculum for integrated vector management (IVM); it should be adapted to the requirements and conditions of each region.

Coordination of public health and social surveillance systems: advising principles 2nd edition. Geneva, World Health Organization, 2018, WHO / WHE / CPI / LSS / 2018.41.

Annex 1 of the International Health Regulations (2005) (IHR) requires State Parties to meet the specific minimum requirements for surveillance and response. The efficient collection of pertinent information is critical for early intervention.

This guide is to support the implementation of the national public health surveillance system. It includes:

- The IHR requirements and principles for public security;
- A list of published regulations and guidance related to public health surveillance; and
- Advising principles for public health surveillance.

A first edition of this guide has been updated, and additions have been made for clarifying the content.

Coordination of public health surveillance between implementation and implementation of national public health surveillance system: implementation toolbox. Geneva, World Health Organization, 2018, WHO / WHE / CPI / LSS / 2018.42.

To support countries in the process of strengthening their public health surveillance coordination between points of entry and the national public health surveillance system, WHO has developed an implementation toolbox. It includes:

- An instruction document that details the process and tools for assessing existing practices and for developing a tailored plan of action to strengthen public health surveillance coordination.
- Nineteen supporting tools that can be tailored to each country's specific needs and used in the process.

The instruction document and each supporting tool can be downloaded individually to facilitate the process.

Early detection, assessment and response to acute public health events. Implementation of Early Warning and Response with a focus on Event-Based Surveillance. Interim version. Geneva, World Health Organization, 2014, WHO/HSE/GCR/LYO/2014.4.

The goal of this document is to provide national health authorities, and stakeholders supporting them, with guidance for implementing or enhancing all-hazards early warning and response mechanisms within national surveillance systems. It aims to provide direction regarding the implementation of surveillance capacities, especially event-based surveillance, in order to detect and to respond rapidly to all acute health events and risks from any origin.
This document was developed between March 2013 and March 2014 with the support of a working group made up of country representatives, partners, and WHO colleagues at WHO.

International health regulations (2005). A guide for public health emergency contingency planning at designated points of entry. Geneva, World Health Organization, 2012

This guide was designed to assist WHO Member States, both large and small, to bridge the gap between the legal requirements of the International Health Regulations (2005), or IHR (2005), and the pragmatic readiness and response capacity for public health emergencies at designated points of entry (POE).

International health regulations (2005). Assessment tool for core capacity requirements at designated airports, ports and ground crossings. Geneva, World Health Organization, 2009, WHO/HSE/IHR/LYO/2009.9.

This document was developed to support States Parties in assessing existing capacities and capacity needs at points of entry when deciding which airports, ports and ground crossing to designate under Article 20.1 and Annex 1B. It includes an Excel Spreadsheet File Model for IHR core capacities assessment at ports, airports and ground crossings.

Ebola event management at points of entry. Interim guidance. Geneva, World Health Organization, 2014, WHO/EVD/Guidance/PoE/14.1

The interim guidance document is intended for National Focal Points for the International Health Regulations, points of entry public health authorities, operators, conveyance operators, crew members and other stakeholders involved in the management of public health event.

The aim is to provide early detection of potentially infected persons; to assist in implementing WHO recommendations related to Ebola management; and to prevent the international spread of the disease while allowing authorities to avoid unnecessary restrictions and delays.

Travel and transport risk assessment: Ebola. Interim guidance for public health authorities and the transport sector. Geneva, World Health Organization, 2014, HO/EVD/Guidance/TravelTransportRisk/14.1.

This guidance document includes background information on Ebola virus disease, Ebola emergency committee recommendations, risks for different groups, and information for travellers to and from Ebola-affected countries.

Guidance for public health authorities and transport sectors: raise the awareness and knowledge of travellers and health care providers; template message for travellers, prepare health system response.

Exit screening at airports, ports and land crossings: Interim guidance for Ebola virus disease. Geneva, World Health Organization, 2014, WHO/EVD/Guidance/PoE/14.2

This document provides information to assist countries in developing exit

screening plans and Standard Operating Procedures (SOP). This includes the method, tools, and sequence of screening; determining resource needs; communication messages; and the legal considerations of screening.

The guidance is intended for use in countries with Ebola transmission. It may also be used as a reference and as a planning tool for all countries.

Technical note for Ebola preparedness planning for entry screening at airports, ports and land crossings. . Geneva, World Health Organization, 2014

WHO does not recommend entry screening for Ebola virus disease (EVD) outbreak in West Africa. However, for preparedness planning purposes, countries may wish to develop plans and procedures for entry screening according to their own risk assessment and cost benefit analysis. Entry screening procedures should not interfere with international travel and trade.
This document provides recommendations for planning entry screening at Points of Entry (PoE). It was developed in collaboration with the US Centers for Disease Control and Prevention, the International Civil Aviation Organization and the International Air Transport Association. It includes: Planning for entry screening, overview of entry screening operations, data management, sample checklists, template declaration and other forms.

Promoting the health of refugees and migrants. Draft global action plan, 2019–2023. Report by the Director-General.

This document, based on earlier documents and resolutions (i.e. WHA70.15), is a brief overview of the global migrants and refugees situation. The author notices, that many refugees and migrants lack access to health care services, including health promotion, mental health services (in particular those for post-traumatic disorders, which affect many refugees and migrants), disease prevention, treatment and care, as well as financial protection.

As a result a global action plan, based on six priorities, is proposed. The goal of this document is to assert health as an essential component of refugee assistance and good migration governance. Such system should be helpful in process of identification, prevention and combating of threats.

6.4.4 European Union

6.4.5 Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC

Decision 1082/2013/EU, in force since 6 November 2013, has improved health security in the European Union and the protection of the Union's citizens from communicable diseases, and other biological, chemical and environmental events. The established mechanisms and structures, namely the EWRS, the epidemiological surveillance network, the European Centre for Disease Prevention and Control (ECDC), and the Health Security Committee (HSC) has been listed for operational issues in case of a serious cross-border threat to health.

The EWRS has been instrumental to notify alerts as well as measures undertaken by the Member States. ECDC has been established by Regulation (EC) No 851/20042 as an independent EU agency responsible for, among others, providing timely risk assessment of a public health threat caused by communicable diseases, including options for possible public health measures. The HSC was set up in 2001 at the request of EU Health Ministers as an informal advisory group on health security at European level. Decision 1082/2013/EU formalised the establishment and strengthened the role of the Committee.

Article 4(2) of Decision 1082/2013/EU requires Member States to provide the Commission, by 7 November 2014 and three years thereafter, with an update on the latest situation on their preparedness and response planning at national level. The information to be provided is to cover the implementation of the International Health Regulations (IHR)3, interoperability between the health sector and other sectors, and business continuity plans. In addition, according to Article 4(3) Member States are to inform the Commission in a timely manner when substantially revising national preparedness planning.

Article 5 of Decision 1082/2013/EU lays down a new mechanism for Member States to engage in a joint procurement procedure with the Union institutions with a view to enabling the advance purchase of medical countermeasures for serious cross-border

threats to health. For the implementation of this joint procurement, the Commission developed a framework agreement laying down common rules for practical organisation of joint procurement procedures – the Joint Procurement Agreement.

Building on the framework set up by Decision No 2119/98/EC7, Article 6 of Decision 1082/2013/EU provides a legal basis for a network between the Commission, ECDC and Member States' competent authorities for the epidemiological surveillance of communicable diseases and of related special health issues. The network is to be operated and coordinated by ECDC.

Article 8 of Decision 1082/2013/EU extends the scope of the EWRS established by Decision No 2119/98/EC beyond communicable diseases, to notifications in relation to all serious cross-border threats to health within the scope of the former Decision. The EWRS is to enable the Commission and the competent national authorities in the Member States to be in permanent communication in order to alert, assess public health risks and determine the measures that may be required to protect public health.

Article 9 of Decision 1082/2013/EU obliges national competent authorities and the Commission to notify an alert in the EWRS where the emergence or development of a serious cross-border threat to health fulfils certain criteria.

According to Article 10 of Decision 1082/2013/EU, the Commission is to make promptly available to the national competent authorities and to the HSC a risk assessment of the potential severity of the threat to public health, including possible public health measures. This provision applies where it is necessary for the coordination of the response at Union level and on the request of the HSC or on the Commission's own initiative. Such risk assessment is to be carried out by the ECDC or – according to the nature of the threat – another Union agency, such as e.g. the European Food Safety Authority (EFSA).

According to Article 11 of Decision 1082/2013/EU, following an alert in the EWRS, on a request from the Commission or a Member State, Member States are to consult each other within the HSC and in liaison with the Commission with a view to coordinating national responses to a serious cross-border threat to health, as well as risk and crisis communication. The consultation is also to cover national responses to events declared a public health emergency of international concern by the WHO in accordance with the IHR.

In addition, the Committee is mandated to reinforce the coordination and sharing of best practice and information on national preparedness activities. The Committee further deliberates on communication messages to health care professionals and the public in order to provide consistent and coherent information adapted to Member States' needs and circumstances.

Article 12 of Decision 1082/2013/EU enables the Commission to recognise a situation complying with the specified criteria as a public health emergency.

Article 15 of Decision 1082/2013/EU requires Member States to designate competent authorities for epidemiological surveillance, for notifying alerts and determining the required measures, and the members of the HSC.

6.5 SUMMARY AND DESCRIPTION OF KEY ISSUES

Tables of connections for key issues have been established in this part and include such sources of law:

- International
- European Union
- Polish national law

6.5.1 Exchange of information

	Sources of law
International	Article 18, Article 23, Article 27, Article 30, Article 35, Article 45, Annex 1B, Annex 2, Annex 4 International health regulations (2005) - 3rd ed.

EU	Article 6, Article 7, Article 8, Article 9, Article 16 Decision no 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC Article 6, Article 9 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) Article 40 Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC 2012/73/EU: Commission Recommendation of 6 February 2012 on data protection guidelines for the Early Warning and Response System (EWRS) (notified under document C(2012) 568) Commission Recommendation (EU) 2017/1140 of 23 June 2017 on personal data that may be exchanged through the Early Warning and Response System (EWRS) established pursuant to Decision No 1082/2013/EU of the European Parliament and of the Council for the purposes of the coordination of contact tracing measures in relation to serious cross-border threats to health (notified under document C(2017) 4197) Commission Implementing Decision (EU) 2018/945 of 22 June 2018 on the communicable diseases and related special health issues to be covered by epidemiological surveillance as well as relevant case definitions; C/2018/3868
Polish	Ustawa z dnia 29 stycznia 2004 r. o Inspekcji Weterynaryjnej Ustawa z dnia 5 grudnia 2008 r. o zapobieganiu oraz zwalczaniu zakażeń i chorób zakaźnych u ludzi Ustawa z dnia 28 kwietnia 2011 r. o systemie informacji w ochronie zdrowia Ustawa z dnia 18 grudnia 2003 r. o ochronie roślin Rozporządzenie Ministra Zdrowia z dnia 15 stycznia 2013 r. w sprawie współdziałania między organami Państwowej Inspekcji Sanitarnej, Inspekcji Weterynaryjnej oraz Inspekcji Ochrony Środowiska w zakresie zwalczania zakażeń i chorób zakaźnych, które mogą być przenoszone ze zwierząt na ludzi lub z ludzi na zwierzęta

6.5.2 International level

At the international level, the ability to obtain and process personal data to the extent necessary to adequately respond to serious threats to public health of cross-border importance was identified at the IHR level. According to Article 18 paragraph 1 IHR WHO may, in relation to people, issue a recommendation addressed to countries that are parties to this Convention, including, inter alia, reviewing the history of travel in the affected areas, reviewing the results of medical examinations and any laboratory analysis, reviewing vaccination confirmations or other preventive measures, checking contacts of people affected or in relation to whom there is a potential risk of exposure. However, in accordance with Article 18 paragraph 2 recommendations, in relation to luggage, cargo, means of transport, containers, goods and postal items, may include advice to review the list of passengers and routes or to carry out inspections. In line with Article 23 paragraph 1 of the IHR, subject to applicable international agreements and relevant articles of these provisions, a State-Party to this Convention, for public health purposes, on entry and exit, may require for travellers:

- information on the final destination of the trip taken by the traveller, so that it is possible to contact the traveller
- information about the itinerary to determine if there has been a trip to or near the affected area, or any other contact with infection or contamination before entry, as well as reviewing the traveller's health documents, if required according to the IHR,

Article 27 of the IHR contains regulations on the exchange of information on the affected means of is transport. Article 30 IHR condition for the continuation of a traveller's journey, in relation to whom there is a suspicion and who upon arrival will be subject to clinical-epidemiological observation, consisting in informing the competent authorities at the entry point at the destination, if known, of the intended arrival of the traveller, by the state-party. The right of the competent authorities to request travellers to complete forms for contact information and health questionnaires of travellers, provided that they meet the requirements set out in Article 23, is included in Article 35 IHR. The regulation

of ways to process personal data is included in Article 45 IHR. One should also point to the IHR Annexes IB, II and IV in the subject of obtaining and exchanging information,

6.5.3 EU level

At the EU level, regulations allowing contact tracing were included in Decision no 1082/2013/EU. Based on Article 6 paragraph 1, an epidemiological surveillance network was established for infectious diseases and related specific health problems, which is operated and coordinated by the ECDC. According to Article 6 (2), the epidemiological surveillance network shall ensure permanent communication between the Commission, the ECDC and the competent national authorities responsible for epidemiological surveillance. Personal data necessary for the establishment of contagious contacts may be provided in the notification of the threat via EWRS, which was *expressis verbis* indicated in Article 9 paragraph 3. EWRS is used for ad hoc monitoring based on Article 7 paragraph 1, which was established on the basis of Article 8 paragraph 1. The requirement of compliance of personal data transferred with the requirement to protect personal data contained in Article 16 must be indicated.

Criteria referred to in Article 6 paragraph 1 subparagraph c), d) and e) Regulation (EU) 2016/679 are the most relevant for exchanging data regarding contagious contacts of natural person in the EWRS (e.g. contact details of infected people, data regarding the means of travel and other data related to the travel route and places of stay of the individual, information on visited people and people potentially exposed to infection):

- Article 6 paragraph 1 point (c) Regulation (EU) 2016/679: "processing is necessary for compliance with a legal obligation to which the controller is subject". Decision No 2119/98 / EC required the establishment of an early warning and response system to prevent and control contagious diseases in the EU. By that decision, Member States were required to report, through EWRS, certain cases caused by contagious diseases which are or could potentially be a threat to public health. Decision No 2119/98 / EC was revoked and replaced by Decision No.

1082/2013 / EU of the European Parliament and Council. The new decision re-empowered EWRS with legal force. It also extended the scope of the fixed communication network to include other types of biological threats, as well as other categories of serious cross-border health threats, including threats of chemical, environmental or unknown origin. In addition, it sets out rules for epidemiological surveillance, monitoring, early warning and combating serious cross-border health threats.

- Article 6 paragraph 1 point (d) Regulation (EU) 2016/679: "processing is necessary in order to protect the vital interests of the data subject or of another natural person". As to the rule, the exchange of personal data of infected people as well as people at direct risk of infection, between the concerned Member States, is necessary to ensure an adequate care or treatment and to enable the detection and identification of individuals for their isolation or quarantine, with a view to protecting them and all EU citizens in general.
- Article 6 paragraph 1 point (e) Regulation (EU) 2016/679: " processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller" The EWRS is a tool designed to help Member States to coordinate their activities to prevent and control serious infectious diseases in the EU. Therefore, the system is intended to perform tasks in the public interest that have been assigned to Member States to protect public health.

Public interest may also be a justification for the processing by Member States of sensitive health data (e.g. information on cases representing a health risk, data on the health status of infected people and those potentially exposed to infection) under the EWRS. Although the processing of health data is essentially prohibited under Article 9 paragraph 1 Regulation (EU) 2016/679, the data processing of this specific category in the EWRS is exempted under Article 9 paragraph 2 point (c) of this Regulation, providing that the data processing is necessary to protect the vital interests of the person whose data is concerned or another natural person if that person is physically or legally incapable of giving consent or pursuant to Article 9 paragraph 2 point (i) if the processing

is necessary for the public interest reasons in the field of public health, such as protection against serious cross-border health threats or ensuring high standards of quality and safety of healthcare and medicinal products or medical devices, based on Union law or the law of a Member State which provide for appropriate specific measures to protect the rights and freedom of people whose data is concerned, in particular professional secrecy.

An indicative list of personal data that can be exchanged for the purpose of coordinating the means of establishing contagious contacts was included in the Annex to Commission Recommendation (EU) 2017/1140 of 23 June 2017 in reference to personal data that can be exchanged via the early warning and response system (EWRS) established by Decision No 1082/2013 / EU of the European Parliament and of the Council for the purpose of coordinating means of establishing contagious contacts in relation to serious cross-border threats to health (notified under document C (2017) 4197).

Detailed EWRS data protection guidelines can be found in the Commission Recommendation of 6 February 2012 (L 36/31)

A list of contagious diseases and related specific health problems to be covered by the epidemiological surveillance network was set out in Annex I Commission Implementing Decision (EU) 2018/945 (L 170/1).

Regulation (EU) 2016/679 applies in Poland directly. The Polish legal order must ensure effective application of the provisions of this regulation. To this end, besides the adoption of the Act of 10 May 2018 on the personal data protection, it also became necessary to make a number of changes to the applicable laws. This is done by the Act of 21 February 2019 on amending certain acts in connection with the application of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and the repeal of Directive 95/46/EC (general regulation on data protection).

Decision No 2119/98 / EC of the European Parliament and of the Council established an early warning and response system ('EWRS') as a permanent communication network between the Commission and the competent public health authorities in the Member States for the prevention and control of infectious diseases of

certain categories. The procedures regulating the operation of EWRS are set out in Commission Decision 2000/57 / EC. Decision No 2119/98 / EC has been revoked and replaced by Decision No. 1082/2013 / EU of the European Parliament and of the Council. The new decision has again given legal force to the EWRS. It also extended the scope of the fixed communication network to include other types of biological threats, as well as other categories of serious cross-border health threats, including threats of chemical, environmental or unknown origin. In addition, it sets out rules for epidemiological surveillance, monitoring, early warning and combating serious cross-border health threats. Decision 2000/57 / EC was repealed and replaced by Commission Implementing Decision (EU) 2017/253. Decisions 2000/96 / EC and 2002/253 / EC were replaced by Commission Implementing Decision (EU) 2018/945.

6.5.4 Special remarks

In conclusion, it is worth indicating the existence and validity of the contact tracing regulations. Nevertheless, the dispersion of regulations concerning the issue in subject and the strictly legal language of regulation may be difficult to receive by entities dealing with or afflicted with the problem of contact tracing. It seems that at both international and national level there is a need to create a Memorandum of Understanding in order to gather in one place regulations regarding this area, to extend it with practical rules and guidance in this matter. In addition, creating a positive list of carriers / institutions that signed this MoU could affect the positive reception in the eyes of customers of these carriers / institutions as passenger health-conscious, and at the same time this could lead to the creation of response procedures for carriers / institutions in situations requiring the transfer of personal data related to contact tracing, which should speed up the exchange of information. Such an advantage would be indispensable for increasing the level of public health safety. The scope of the proposed document could include in the aspect of contact tracing:

1. Legal basis,
2. Who can request the information?

3. From whom can you request the information?
4. In what situations can you request information?
5. What information can you ask for?
6. How should the data be processed?
7. How to exchange information?
8. Response / information time
9. Addressees / signatories - who should sign?
10. The way / process of providing information

6.6 VECTOR CONTROL

	Sources of law
International	Article 1, Article 9, Article 18, Article 19, Article 22, Article 24, Article 27, Article 34, Annex 1 B, Annex 5, Annex 7 International health regulations (2005) - 3rd ed.
EU	Article 4, Article 15, Article 17, Article 18 Decision no 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC Article 5, Article 9(1), Article 36, Article 39, Article 57, Article 60, Article 61, Article 64, Annex IV Regulation (EU) 2016/429 of the European Parliament and of the Council of 9 March 2016 on transmissible animal diseases and amending and repealing certain acts in the area of animal health ('Animal Health Law') Annex I Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community
Polish	Ustawa z dnia 11 marca 2004r. o ochronie zdrowia zwierząt oraz zwalczaniu chorób zakaźnych zwierząt

6.6.1 International level

The problem of the supervision of vectors at the international level was indicated at the IHR level. The definition of the vector was recorded in Article 1. Articles 5 and 13 of the IHR, they refer to basic surveillance and response capacities and reference to Annex 1. States Parties to this Convention, if feasible, inform the WHO within 24 hours of receipt of evidence of the existence of a public health risk, identified outside their territory, which may cause the spread of the disease on an international scale, related to exported or imported vectors that transmit infection or contamination resulting from Article 9 IHR. Based on Article 18 paragraph 2 IHR WHO may, in relation to baggage, cargo, means of transport, containers, goods and postal items, issue a recommendation addressed to countries that are parties to this Convention, including advice directly and indirectly on the supervision of vectors. In particular, it should be pointed out that the recommendation may include an advice to remove an infection or contamination from the luggage, cargo, containers, means of transportation, goods, postal items or human remains, including vectors and reservoirs. An important element of the supervision over vectors is the development of capacity, in addition to other obligations laid down in these regulations, referred to in IHR Annex 1 in relation to the designated entry points. In addition, it is required by the State Party to identify the competent authorities at each designated entry point in its territory and, where feasible, provide them at the request of the WHO, in response for the specific potential public health threat, relevant data on the subject sources of contamination or infection, including vectors and reservoirs, at its entry point, which may spread the disease on the international scale which results from Article 19 IHR.

Article 22 of the IHR indicates the role of the competent authorities. They are responsible, among others for monitoring baggage, cargo, containers, means of locomotion, goods, postal items and human remains leaving and arriving in the affected areas , so that they are maintained in such a state that they remain free from sources of contamination or infection, including vectors and reservoirs. In addition, the authorities ensure, as far as is feasible, that the facilities used by travellers at the point of entry are maintained in good sanitary condition and free from sources of contamination or

infection, including vectors and reservoirs. The responsibility for supervising rat extermination, disinfection, pest control or decontamination of luggage, cargo, containers, means of transport, goods, postal items and human remains or taking sanitary measures in relation to people, in accordance with these Regulations, is also key. In IHR Article 24 all states parties take all reasonable measures, in accordance with the Rules, in order to ensure that carriers maintain means of transport of their responsibility, free from sources of contamination or infection, including vectors and reservoirs. Detailed measures applicable to transport and carriers in relation to vector diseases can be found in Annex 5. The WHO regularly publishes a list of areas where disinfestation or other vectors control measures, used in relation to transport agents arriving from these areas, are recommended. The determination of such areas is carried out in accordance with the procedure for temporary or permanent recommendations, if appropriate. Any means of transport leaving the entry point located in the area where vector control is recommended should be disinfected and free from vectors. Information on the existence of vectors on board of means of transport and on means of elimination applied to them is provided for other means of transport than a ship or an aircraft, on a written document as a proof of the completion of procedure by the sender, recipient, carrier, person responsible for the means of transport or their representatives. States Parties develop a program to combat vectors that can carry pathogens which represent a threat to public health, at a minimum distance of 400 meters of these areas from the entry point facilities, which are used for operations involving travellers, means of transport, containers, cargos and postal items, and at an increased minimum distance, when vectors with a larger range are present. The factors which allow a given means of transport to be considered suspect and subject to inspection in the direction of vectors and reservoirs are:

- There may be a case of vector disease on board,
- A possible case of vector disease occurred on board during international transit,
- Left the affected area during the period in which the vectors on board can still be carriers of the disease.

- A State Party may take measures to combat vectors in relation to a means of transport arriving from the affected by the vector disease area, if the vectors of the disease are on its territory.

Article 27 of the IHR contains a catalogue of possible actions in relation to the affected means of transport. In Article 34 of the IHR there are regulations which scope is to ensure by the States Parties, to a feasible extend, that those sending containers, only international traffic containers that are free from sources of contamination or infection, including vectors and reservoirs, particularly during packing, and to ensure that container loading areas are free from sources of contamination or infection, including vectors and reservoirs. Requirements regarding vaccination or preventive measures in case of specific diseases, including vector diseases, are included in Annex 7.

6.6.2 EU level

At EU level, supervision over vectors has been included in Decision no 1082/2013 / EU. Article 4 relates to readiness and response planning in the context of basic capabilities by referring to Article 5 and 13 IHR. Article 15 Decision no 1082/2013 / EU contains procedural provisions for the designation of competent authorities responsible for epidemiological surveillance. Indirectly, also Article 17 and 18 refer to the issue in subject.

On the other hand the Animal Health Law lays down rules for the prevention and control of animal diseases which are transmissible to animals or to humans. A disease shall be included on the list referred to in point (b) of paragraph 1 of Article 5 Animal Health Law if it has been assessed in accordance with Article 7 and it meets all of the criteria mentioned in Article 5 paragraph 3 point (a), which one is as follows: "animal species are either susceptible to the disease or vectors and reservoirs thereof exist in the Union" and at least one of the criteria described in Article 5 paragraph 3 point (b). In Article 8 paragraph 3 have been included conditions under which animal species or groups of

animal species shall be added to the list. Article 36 paragraph 1 states that a Member State may apply to the Commission for approval of disease–free status for one or more of the listed diseases referred to in points (b) and (c) of Article 9(1), for one or more of the relevant animal species, for its entire territory or for one or more zones thereof, provided that one or more of the following conditions are fulfilled and they contains among others point (c): "in the case of listed diseases only transmitted by vectors, none of the vectors are present, or they are known not to be able to survive in the entire territory of the Member State, or in the relevant zone or zones covered by the application, according to the criteria referred to in point (a)(ii) of Article 39;" On the basis of Article 57 The competent authority shall carry out an epidemiological enquiry in the event of the confirmation of a listed disease as referred to in point (a) of Article 9(1) in animals. This shall aim to among others to obtain information on the likely spread of the listed disease in the surrounding environment, including the presence and distribution of disease vectors. In the event of an outbreak of a listed disease as referred to in point (a) of Article 9(1) in kept animals, the competent authority shall immediately take one or more of the following disease control measures, subject to national requirements for gaining access to private residences, in an establishment, food or feed business, animal by–products establishment, or any other location referred to in point (a) of Article 60, in order to prevent the further spread of that listed disease. This action contains among others the destruction, processing, transformation or treatment of products, feed, or any other substances, or the treatment of equipment, means of transport, plants or plant products, or water which may be contaminated, as appropriate to ensure that any disease agent or vector of the disease agent is destroyed – Article 61 paragraph 1 point (c). From Article 64 paragraph 1 point (e) can be conducted that the presence, distribution and type of vectors in the restricted zone should be taken into account by competent authority while establishing a restricted zone. The criteria for the application of the disease prevention and control rules referred to in Article 9(1) to diseases listed in accordance with Article 5 have been listed in annex IV.

It should be also mentioned that Annex I Council Directive 2000/29/EC of 8 May 2000 contains the list of harmful organisms whose introduction into, and spread within, all

Member States shall be banned. In the list occurs e.g. Bemisia tabaci Genn. (non-European populations) which is vector of viruses such as:

(a) Bean golden mosaic virus

(b) Cowpea mild mottle virus

(c) Lettuce infectious yellows virus

(d) Pepper mild tigré virus

(e) Squash leaf curl virus

(f) Euphorbia mosaic virus

(g) Florida tomato virus

And Cicadellidae (non-European) known to be vector of Pierce's disease (caused by Xylella fastidiosa), such as:

(a) Carneocephala fulgida Nottingham

(b) Draeculacephala minerva Ball

(c) Graphocephala atropunctata (Signoret)

6.7 STOPPING / HOLDING A PASSENGER

	Sources of law
International	Article 18, Article 23, Article 31, Article 36 International health regulations (2005) - 3rd ed.

EU	Article 6, Article 8, Article 14, Article 32 Annex 5 Regulation (EU) 2016/399 of the European Parliament and of the Council of 9 March 2016 on a Union Code on the rules governing the movement of persons across borders (Schengen Borders Code) Article 4, Article 11, Article 15, Article 17, Article 18 Decision no 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC Article 8a Regulation (EU) 2017/2225 of the European Parliament and of the Council of 30 November 2017 amending Regulation (EU) 2016/399 as regards the use of the Entry/Exit System
Polish	Ustawa z dnia 5 grudnia 2008 r. o zapobieganiu oraz zwalczaniu zakażeń i chorób zakaźnych u ludzi Ustawa z dnia 12 grudnia 2013 r. o cudzoziemcach Rozporządzenie Ministra Zdrowia dnia 17 września 2015 r. w sprawie chorób zakaźnych, których rozpoznanie lub podejrzenie wystąpienia może stanowić podstawę odmowy wjazdu cudzoziemca na terytorium Rzeczypospolitej Polskiej

6.7.1 International level

At the IHR level, in accordance with Article 18 paragraph 1 of the WHO recommendation addressed to States Parties relating to people may include the following advice:

- Submission of people suspected of exposure to clinical-epidemiological observation,
- Introduction of quarantine or other health protection measures for people suspected of exposure,
- Isolation and treatment, if necessary, of affected people in cases requiring it,
- Refusal of entry to people affected or suspected of exposure,
- Refusal of entry to people not affected into the affected areas,
- Checks at the point of exit and / or application of restrictions to people leaving the affected areas.

Based on Article 23 paragraph 1 of the IHR, subject to applicable international agreements and relevant IHR articles, a State Party, for public health purposes, on entry and exit, may require, inter alia, a non-invasive medical examination, which is the least intrusive examination and can achieve the public health objective. Furthermore, according to the paragraph 2 on the basis of evidence indicating the existence of a threat to public health, obtained through the means referred to in paragraph 2. in accordance with paragraph 1 of this article, or by other means, States Parties may apply additional health measures in accordance with the IHR, in particular with regard to an affected or suspect traveller, deciding on individual cases, least intrusive and invasive medical examinations that could achieve the purpose of public health by preventing the spread of disease on an international scale. However, pursuant to Article 31 invasive medical examinations, vaccinations or other preventive actions may not be required as a condition of entry of a traveller into the territory of a State Party, unless, subject to Article 32, 42 and 45, the IHR does not prevent States Parties from requiring medical examinations, vaccinations or other preventive measures or evidence of vaccination or other preventive measures:

- In a situation when it is necessary to determine whether there are public health threats,
- As a condition of entry for travellers wishing to obtain a temporary or permanent right of residence,
- As a condition of entry for travellers, in accordance with Article 43 or Annexes 6 and 7,
- Which can be carried out in accordance with Article 23.

If a traveller for whom the State Party may require medical examinations, vaccinations or other preventive measures in accordance with paragraph 1 of this article, does not meet this requirement, or refuses to provide information or documents referred to in Article 23 paragraph 1 point a), the interested party may, subject to Article 32, 42 and 45, refuse the traveller the opportunity to enter. If there is evidence indicating direct threat to public health, a State Party may, in accordance with national law and to the extent

necessary to combat such a threat, compel the traveller to undertake or recommend to the traveller, in accordance with Article 23 paragraph 3, to undertake:

- The least invasive and least intrusive medical examination that can achieve the public health objective,
- Vaccination or other preventive actions,
- Additional established health measures that prevent or control the spread of the disease, including isolation, quarantine or subjecting the patient to clinical-epidemiological observation.

However, it should be remembered that a traveller with a vaccination certificate or other preventive measure issued in accordance with Annex 6 and, if applicable, Annex 7, cannot be refused entry because of the disease to which the certificate relates to, even if he comes from the affected area, unless the competent authorities have reliable information and / or evidence that the vaccination or other preventive actions have not been effective - as set out in Article 36 IHR.

6.7.2 EU level

Under the EU regulations, the reason for not admitting a third country national, in accordance with Article 6 paragraph 1 point e) Regulation (EU) 2016/399, is the threat to public health. Border traffic at external borders is subject to checks by border guards. Checks may also apply to means of transport and items in the possession of people crossing the border. The national law of the Member State concerned shall apply for searches. The above is provided in Article 8 paragraph 1. based on article 8 paragraph 2 on a random basis, at the minimum check-in at the external borders of people taking advantage of the right of free movement under Union law, border guards may check national and European databases to confirm that such people do not constitute a real, actual and sufficiently serious threat to internal security, public order, international relations of Member States or threats to public health. The results of these checks must

not prejudice the right of entry for people with the right of free movement under Union law on the territory of a Member State as defined in Directive 2004/38 / EC. On the other hand, third-country nationals are subject to a detailed entry check including verification if the third country national concerned, his means of transport and the items carried by him do not constitute a likely danger to the public health of any of the Member States. Such a control includes direct verification of the people concerned and their entries, and, if necessary, entries related to items contained in the SIS and in national databases, as well as any possible actions to be taken as a result of the entry as per article 8 paragraph 3 point (a) subpoint (iv). For people leaving, detailed check-in at the exit can also include checking entries in SIS for people and objects as well as information in national databases, which results from point (a) subpoint (iii). Article 14 provides the legal basis for the refusal of entry and the conditions and procedure for its issuance. The detailed rules for the refusal of entry are set out in Annex V, Part A. It should also be noted that in the event of reintroduction of border control at internal borders, the relevant provisions of Title II shall apply respectively to Article 32. In addition, in general the subject matter is also covered by Article 4, Article 11, article 15, Article 17, Article 18. Decision no 1082/2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC. The technical indication of the procedure for the Entry / Exit System can be found in Article 8a Regulation (EU) 2017/2225 of the European Parliament of November 30 2017 amending Regulation (EU) 2016/399 as regards the use of the Entry / Exit System.

In the communication of 14 September 2016 entitled "Enhancing security in the mobile world: improved exchange of information for the fight against terrorism and strengthened external borders", it was confirmed that the protection of external borders is a priority and specific initiatives are proposed to expand the scope and accelerate Union action to further improve the management of external borders. In the course of work and analyses, it was assumed that one of the priorities is also the protection of public health in the context of epidemiological threat.

The attempt to regulate issues related to the cross-border protection of public health is the creation of the ETIAS system (Proposal for a Regulation Of The European Parliament And Of The Council establishing a European Travel Information and Authorization System (ETIAS) and amending Regulations (EU) No 515/2014, (EU) 2016/399, (EU) 2016/794 and (EU) 2016/1624 COM / 2016/0731 final - 2016/0357 (COD). It ended with the adoption of Regulation (EU) 2018/1240 of the European Parliament and of the Council of 12 September 2018 establishing a European Travel Information and Authorization System (ETIAS) and amending Regulations (EU) No 1077/2011, (EU) No 515/2014, (EU) 2016/399, (EU) 2016/1624 and (EU) 2017/2226 (L 236/1).

ETIAS is applicable to third-country nationals who do not require visa. Their duty will be to register the entry by using an IT system - the application will contain, among others, health information. ETIAS should contribute to guaranteeing a high level of safety, preventing illegal immigration and protecting public health by ensuring the assessment of travellers before their arrival at border crossing points at external borders. It is assumed that the system will be fully effective in 2021. The ETIAS system is implemented by EU-LISA.

6.8 LIST OF RECIPES FOR OTHER QUESTIONS DEFINED IN THE PROJECT

6.8.1 Existing EU Regulations on the import of goods focused on sanitary and epidemiological safety, including vector control

	Sources of law
International	Article 18, Article 23, Article 35, Article 43 International health regulations (2005) - 3rd ed.

EU	Article 9, Article 10, Article 15 Decision no 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC Article 8, Article 21, Article 26, Article 30, ANNEX II Regulation (EU) 2016/399 of the European Parliament and of the Council of 9 March 2016 on a Union Code on the rules governing the movement of persons across borders (Schengen Borders Code) Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community. Commission Regulation (EC) No 206/2009 of 5 March 2009 on the introduction into the Community of personal consignments of products of animal origin and amending Regulation (EC) No 136/2004. Regulation (EU) No 576/2013 of the European Parliament and of the Council of 12 June 2013 on the non-commercial movement of pet animals and repealing Regulation (EC) No 998/2003 Regulation (EU) 2016/429 of the European Parliament and of the Council of 9 March 2016 on transmissible animal diseases and amending and repealing certain acts in the area of animal health ('Animal Health Law') (Text with EEA relevance) Council Directive 91/496/EEC of 15 July 1991 laying down the principles governing the organization of veterinary checks on animals entering the Community from third countries and amending Directives 89/662/EEC, 90/425/EEC and 90/675/EEC Regulation (EC) No 853/2004 of the European Parliament and of the Council of 29 April 2004 laying down specific hygiene rules for food of animal origin
Polish	Ustawa z dnia 27 sierpnia 2003 r. o weterynaryjnej kontroli granicznej Ustawa z dnia 10 grudnia 2003 r. o kontroli weterynaryjnej w handle Ustawa z dnia 14 marca 1985 r. o Państwowej Inspekcji Sanitarnej Ustawa z dnia 18 grudnia 2003 r. o ochronie roślin Rozporządzenie Ministra Rolnictwa i Rozwoju Wsi w sprawie dopuszczalnych ilości roślin i produktów roślinnych, które nie podlegają granicznej kontroli fitosanitarnej z dnia 7 grudnia 2007 r.

	Ustawa z dnia 11 marca 2004 r. o ochronie zdrowia zwierząt oraz zwalczaniu chorób zakaźnych zwierząt Rozporządzenie Ministra Rolnictwa i Rozwoju Wsi w sprawie zapobiegania wprowadzaniu i rozprzestrzenianiu się organizmów kwarantannowych z dnia 21 lutego 2008 r. (Dz.U. Nr 46, poz. 272)tj. z dnia 6 lipca 2015 r.

6.8.2 Existing EU Regulations concerning tourism and migrations of people focused on sanitary and epidemiological safety including vector control

	Sources of law
International	Article 18, Article 23, Article 30, Article 31, Article 35, Article 43 International health regulations (2005) - 3rd ed.
EU	Article 9, Article 10, Article 15 Decision no 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC Article 6, Article 8, Article 21, Article 26, Article 30, ANNEX II Regulation (EU) 2016/399 of the European Parliament and of the Council of 9 March 2016 on a Union Code on the rules governing the movement of persons across borders (Schengen Borders Code) Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community. Commission Regulation (EC) No 206/2009 of 5 March 2009 on the introduction into the Community of personal consignments of products of animal origin and amending Regulation (EC) No 136/2004.
Polish	Ustawa z dnia 5 grudnia 2008 r. o zapobieganiu oraz zwalczaniu zakażeń i chorób zakaźnych u ludzi Ustawa z dnia 12 grudnia 2013 r. o cudzoziemcach Rozporządzenie Ministra Zdrowia dnia 17 września 2015 r. w sprawie chorób zakaźnych, których rozpoznanie lub podejrzenie wystąpienia może stanowić podstawę odmowy wjazdu cudzoziemca na terytorium Rzeczypospolitej Polskiej

	Rozporządzenie Ministra Zdrowia z dnia 18 stycznia 2007 r. w sprawie wykazu chorób, które uzasadniają podjęcie decyzji o wydaleniu z terytorium Rzeczypospolitej Polskiej obywatela UE lub członka rodziny niebędącego obywatelem UE z powodu zagrożenia dla zdrowia publicznego Ustawa z dnia 14 lipca 2006 r. o wjeździe na terytorium Rzeczypospolitej Polskiej, pobycie oraz wyjeździe z tego terytorium obywateli państw członkowskich Unii Europejskiej i członków ich rodzin

7 ANNEXES

Annex A: List of external eastern European Union PoEs

BULGARIA

BULGARIA has a total of 31 ground crossings with North Macedonia (3); Greece (6); Romania (13); Serbia (5); Turkey (3)

- Between Bulgaria and North Macedonia: there are 3 ground crossings - all roads (open 24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
BULGARIA	Land	North Macedonia	Road	Gyushevo	24//7
BULGARIA	Land	North Macedonia	Road	Stanke Lisichkovo	24//7
BULGARIA	Land	North Macedonia	Road	Zlatarevo	24//7

- Between Bulgaria and Greece: there are 6 ground crossings - all roads (open 24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
BULGARIA	Land	GREECE	Road	Ilinden	24//7
BULGARIA	Land	GREECE	Road	Ivaylovgrad	24//7
BULGARIA	Land	GREECE	Road	Kapitan Petko Voyvoda	24//7
BULGARIA	Land	GREECE	Road	Kulata	24//7
BULGARIA	Land	GREECE	Road	Makaza	24//7
BULGARIA	Land	GREECE	Road	Zlatograd	24//7

- Between Bulgaria and Romania: there are 13 ground crossings - River port 7; Road 4; Road and Railway 1; Road and Railway and Ferry 1
- Ground crossing in Kaynardzha is open only day time, others are open 24/7

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
BULGARIA	Land	ROMANIA	Road	Durankulak	24//7
BULGARIA	Land	ROMANIA	Road	Kardam	24//7
BULGARIA	Land	ROMANIA	Road	Kaynardzha	Only day time

BULGARIA	Land	ROMANIA	River port	Lom	24//7
BULGARIA	Land	ROMANIA	River port	Oryahovo	24//7
BULGARIA	Land	ROMANIA	Road&Railway	Ruse	24//7
BULGARIA	Land	ROMANIA	River port	Ruse	24//7
BULGARIA	Land	ROMANIA	Road	Silistra	24//7
BULGARIA	Land	ROMANIA	River port	Silistra	24//7
BULGARIA	Land	ROMANIA	River port	Somovit-Nikopol	24//7
BULGARIA	Land	ROMANIA	River port	Svishtov	24//7
BULGARIA	Land	ROMANIA	River port	Tutrakan	On request
BULGARIA	Land	ROMANIA	Road&Railway&Ferry	Vidin	24//7

- Between Bulgaria and Serbia: there are 5 ground crossings - all roads (open 24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
BULGARIA	Land	SERBIA	Road	Bregovo	24//7
BULGARIA	Land	SERBIA	Road	Kalotina	24//7
BULGARIA	Land	SERBIA	Road	Oltomantsi	24//7
BULGARIA	Land	SERBIA	Road	Strezimirovtsi	24//7
BULGARIA	Land	SERBIA	Road	Vrashka Chuka	24//7

- Between Bulgaria and Turkey: there are 3 ground crossings - all roads (open 24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
BULGARIA	Land	TURKEY	Road	Kapitan Andreevo	24//7
BULGARIA	Land	TURKEY	Road	Lesovo	24//7
BULGARIA	Land	TURKEY	Road	Malko Tarnovo	24//7

- One River port (open 24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
BULGARIA	Land		River port	Vidin	24//7

CROATIA

CROATIA has a total of 126 grounds crossings; Bosnia and Herzegovina (48); Hungary (10); Montenegro (2); Serbia (11); Slovenia (53)

- Between Croatia and Bosnia & Herzegovina: there are 48 ground crossings – Railway 5; River 1; Road 42
- Pasin Potok, Bogovolja, Licka Kaldrma, Dvorine, Sebisina, Podprolog, Imotica, Slano, Hrvatska Dubica, Arzano Pazar, Vukov Klanac, Gabela Polje, Jovića Most, Bili Brig, Slivno, Unka is open every day from 06:00 till 22:00
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_Times	Opening_times
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Stara Gradiska	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Nova Sela	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Zupanja	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Gunja	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Slavonski Samac	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Slavonski Brod	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Jasenovac	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Maljevac	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Strmica	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Gornji Brgat	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Klek	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Zaton Doli	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Railway	Drenovci	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Railway	Volinja	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Railway	Slavonski Samac	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Railway	Metkovic	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Hrvatska Kostajnica	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Uzljebic	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Arzano	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Orah	Open 24 hours per day	24//7

CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Cepikuce	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Metkovic	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Mali Prolog	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Dvor	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Pasin Potok	Open every day from 06:00 till 22:00	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Bogovolja	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Licka Kaldrma	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Dvorine	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Sebisina	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Podprolog	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Imotica	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Slano	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Hrvatska Dubica	Open every day from 06:00 till 22:00	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Licko Petrovo Selo	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Vinjani Gornji	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Vinjani Donji	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Prud	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Arzano Pazar	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Vukov Klanac	Open every day from 06:00 till 22:00	Only day time

CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Gabela Polje	Open every day from 06:00 till 22:00	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Jovića Most	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Kamensko	Open 24 hours per day	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Bili Brig	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Slivno	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Unka	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	BOSNIA AND HERZEGOVINA	Road	Kordunski Ljeskovac	<Null>	24//7
CROATIA	Land	BOSNIA AND HERZEGOVINA	Railway	Licko Dugo Polje		
CROATIA	Land	BOSNIA AND HERZEGOVINA	River	Slavonski Brod		

- Between Croatia and Hungary: there are 10 ground crossings – Railway 3; Road 7.
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
CROATIA	Land	HUNGARY	Road	Dubosevica	24//7
CROATIA	Land	HUNGARY	Road	Gorican	24//7
CROATIA	Land	HUNGARY	Road	Terezino Polje	24//7
CROATIA	Land	HUNGARY	Road	Donji Miholjac	24//7
CROATIA	Land	HUNGARY	Road	Gola	24//7
CROATIA	Land	HUNGARY	Railway	Kotoriba	24//7
CROATIA	Land	HUNGARY	Railway	Beli Manastir	24//7
CROATIA	Land	HUNGARY	Road	Baranjsko Petrovo Selo	24//7
CROATIA	Land	HUNGARY	Road	Gorican II	24//7
CROATIA	Land	HUNGARY	Railway	Koprovnica	24//7

- Between Croatia and Montenegro: there are 2 ground crossings – all Road
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
CROATIA	Land	MONTENEGRO	Road	Karasovici	24//7
CROATIA	Land	MONTENEGRO	Road	Vitaljina	24//7

- Between Croatia and Serbia: there are 11 ground crossings – Railway 2; River 1; Road 8
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
CROATIA	Land	SERBIA	Road	Batina	24//7
CROATIA	Land	SERBIA	Road	Erdut	24//7
CROATIA	Land	SERBIA	Road	Ilok	24//7
CROATIA	Land	SERBIA	Road	Tovarnik	24//7
CROATIA	Land	SERBIA	Railway	Tovarnik	24//7
CROATIA	Land	SERBIA	Railway	Erdut	24//7
CROATIA	Land	SERBIA	River	Osijek	24//7
CROATIA	Land	SERBIA	Road	Ilok II	24//7
CROATIA	Land	SERBIA	Road	Bajakovo	24//7
CROATIA	Land	SERBIA	Road	Principovac	24//7
CROATIA	Land	SERBIA	Road	Principanovac II	24//7

- Between Croatia and Slovenia: there are 53 ground crossings – Railway 6; Road 47
- Zamost, Pravutina, Vivodina, Kast, Drase, Plavic, Luke Poljanske, Gornja Voca, Sveti Martin na Muri, Cabar, Cvetlin, Novo Selo Zumberacko, Kraj Donji, Gornji Cemehovec, Mali Tabor, Banfi, Prezid II, Lucija, Lipa, Blazevci, Slum, Prilisce, Preseka are open every day from 06:00 till 22:00
- Others ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_Times	Opening_times
CROATIA	Land	SLOVENIA	Road	Macelj	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Bregana	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Rupa	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Plovanija	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Kastel	Open 24 hours per day	24//7

CROATIA	Land	SLOVENIA	Road	Pasjak	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Jurovski Brod	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Trnovec	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Mursko Sredisce	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Prezid	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Brod na Kupi	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Pribanjci	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Lupinjak	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Railway	Savski Marof	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Railway	Sapjane	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Railway	Cakovec	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Railway	Buzet	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Jelovice	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Harmica	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Miljana	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Hum na Sutli	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Pozane	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Zamost	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Pravutina	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Vivodina	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Kast	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Drase	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Plavic	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Luke Poljanske	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Gornja Voca	Open every day from 06:00 till 22:00	Only day time

CROATIA	Land	SLOVENIA	Road	Sveti Martin na Muri	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Cabar	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Cvetlin	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Dubrava Krizovljanska	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Bregana Naselje	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Razvor	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Mihanovic Dol	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Otok Virje	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Novo Selo Zumberacko	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Kraj Donji	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Gornji Cemehovec	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Mali Tabor	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Banfi	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Prezid II	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Bukovje	Open 24 hours per day	24//7
CROATIA	Land	SLOVENIA	Road	Lucija	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Lipa	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Blazevci	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Slum	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Prilisce	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Road	Preseka	Open every day from 06:00 till 22:00	Only day time
CROATIA	Land	SLOVENIA	Railway	Đurmanec	<Null>	24//7
CROATIA	Land	SLOVENIA	Railway	Kamenje	<Null>	24//7

- Two river ground crossings

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
CROATIA	Land		River	Vukovar	24//7
CROATIA	Land		River	Sisak	On request

ESTONIA

ESTONIA has a total of 7 ground crossings with the Russian Federation

- Between Estonia and the Russian Federation: there are 7 ground crossings – Railway 2; Road 2; other 1
- Narva 2 and Saatse are open only during the day time
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
ESTONIA	Land	RUSSIAN FEDERATION	Road	Koidula	24//7
ESTONIA	Land	RUSSIAN FEDERATION	Railway	Koidula	24//7
ESTONIA	Land	RUSSIAN FEDERATION	Road	Luhamaa	24//7
ESTONIA	Land	RUSSIAN FEDERATION	Railway	Narva	24//7
ESTONIA	Land	RUSSIAN FEDERATION	Road	Narva 1	24//7
ESTONIA	Land	RUSSIAN FEDERATION	Open sources suggest pedestrian -Not specified by MS	Narva 2	Only day time
ESTONIA	Land	RUSSIAN FEDERATION	Road	Saatse	Only day time

FINLAND

FINLAND has a total of 18 ground crossings with the Russian Federation

- Between Finland and the Russian Federation: there are 18 ground crossings – Railway 4; Road 14
- Kuusamo, Niirala, Parikkala, Rajajooseppi, Salla, Vartius (Road), Vartius (Railway) are open only during the day time
- Imatra, Niirala, Nuijamaa, Vaalimaa (Road), Vainikkala (Railway) ground crossing are open 24 hours per day (24/7)

- Imatra (Railway), Imatra (Road), Inari, Karttimo, Parikkala - limited use only and open only to citizens of Finland and Russia under the bilateral agreement. They are kept open for traffic as the need arises. The majority of crossing points are closed most of the time.

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_Times	Opening_times
FINLAND	Land	RUSSIAN FEDERATION	Road	Haapovaara	<Null>	-
FINLAND	Land		Railway	Imatra	limited use only and open only to citizens of Finland and Russia under the bilateral agreement.They are kept open for traffic as the need arises.The majority of crossing points are closed most of the time.	On request
FINLAND	Land	RUSSIAN FEDERATION	Road	Imatra	limited use only and open only to citizens of Finland and Russia under the bilateral agreement.They are kept open for traffic as the need arises.The majority of crossing points are closed most of the time.	24//7
FINLAND	Land	RUSSIAN FEDERATION	Road	Inari	limited use only and open only to citizens of Finland and Russia under the bilateral agreement.They are kept open for traffic as the need arises.The majority of crossing points are closed most of the time.	On request

FINLAND	Land	RUSSIAN FEDERATION	Road	Karttimo	limited use only and open only to citizens of Finland and Russia under the bilateral agreement.They are kept open for traffic as the need arises.The majority of crossing points are closed most of the time.	-
FINLAND	Land	RUSSIAN FEDERATION	Road	Kurvinen	<Null>	-
FINLAND	Land	RUSSIAN FEDERATION	Road	Kuusamo	<Null>	Only day time
FINLAND	Land	RUSSIAN FEDERATION	Road	Leminaho	<Null>	-
FINLAND	Land	RUSSIAN FEDERATION	Road	Niirala	<Null>	24//7
FINLAND	Land	RUSSIAN FEDERATION	Railway	Niirala	<Null>	Only day time
FINLAND	Land	RUSSIAN FEDERATION	Road	Nuijamaa	<Null>	24//7
FINLAND	Land	RUSSIAN FEDERATION	Road	Parikkala	limited use only and open only to citizens of Finland and Russia under the bilateral agreement.They are kept open for traffic as the need arises.The majority of crossing points are closed most of the time.	Only day time
FINLAND	Land	RUSSIAN FEDERATION	Road	Rajajooseppi	<Null>	Only day time
FINLAND	Land	RUSSIAN FEDERATION	Road	Salla	<Null>	Only day time
FINLAND	Land	RUSSIAN FEDERATION	Road	Vaalimaa	<Null>	24//7
FINLAND	Land	RUSSIAN FEDERATION	Railway	Vainikkala	<Null>	24//7
FINLAND	Land	RUSSIAN FEDERATION	Road	Vartius	<Null>	Only day time
FINLAND	Land	RUSSIAN	Railway	Vartius	<Null>	Only day time

		FEDERATION				

GREECE

GREECE has a total of 19 ground crossings with Albania (4); Bulgaria (8); North Macedonia (4) and Turkey (3)

- Between Greece and Albania: there are 4 road ground crossings
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
GREECE	Land	Albania	Road	Kakavia	24//7
GREECE	Land	Albania	Road	Kristalopigi	24//7
GREECE	Land	Albania	Road	Mertzani	24//7
GREECE	Land	Albania	Road	Sagiada	24//7

- Between Greece and Bulgaria: there are 8 ground crossings – Railway 3; Road 5
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
GREECE	Land	Bulgaria	Road	Agios Konstantinos	24//7
GREECE	Land	Bulgaria	Railway	Dikea, Evros	24//7
GREECE	Land	Bulgaria	Road	Exohi	24//7
GREECE	Land	Bulgaria	Road	Kyprinos	24//7
GREECE	Land	Bulgaria	Road	Nymfaia	24//7
GREECE	Land	Bulgaria	Railway	Ormenio, Evros	24//7
GREECE	Land	Bulgaria	Road	Promachonas	24//7
GREECE	Land	Bulgaria	Railway	Promachonas (Rail)	24//7

- Between Greece and North Macedonia: there are 4 ground crossings – Railway 1; Road 3
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
GREECE	Land	North Macedonia	Road	Doirani	24//7
GREECE	Land	North Macedonia	Road	Evzoni	24//7
GREECE	Land	North	Railway	Idomeni	24//7

		Macedonia			
GREECE	Land	North Macedonia	Road	Níki	24//7

- Between Greece and Turkey: there are 3 ground crossings – Railway 1; Road 2
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
GREECE	Land	Turkey	Road	Kastanies	24//7
GREECE	Land	Turkey	Road	Kipi	24//7
GREECE	Land	Turkey	Railway	Pithio	24//7

HUNGARY

HUNGARY has a total of 59 ground crossings with Croatia (12), Romania (19); Serbia and Croatia (1); Ukraine (8)

- Between Hungary and Croatia: there are 12 ground crossings – Ferry 1; Highway 1; Railway 3; Road 4, River 1
- Drávaszabolcs operates only on request from 07:00-19:00, Őrtilos - operating only on request
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
HUNGARY	Land	CROATIA	Road	Barcs	24//7
HUNGARY	Land	CROATIA	Not specified	Beremend	24//7
HUNGARY	Land	CROATIA	Road	Berzence	24//7
HUNGARY	Land	CROATIA	Road	Dravaszabolcs	24//7
HUNGARY	Land	CROATIA	Ferry	Drávaszabolcs	On request - operating only on request from 07:00-19:00
HUNGARY	Land	CROATIA	Railway	Gyékényes	24//7
HUNGARY	Land	CROATIA	Highway	Letenye II	24//7
HUNGARY	Land	CROATIA	Road	Letenye I	24//7
HUNGARY	Land	CROATIA	Railway	Magyarbóly	24//7
HUNGARY	Land	CROATIA	Railway	Murakeresztúr	24//7
HUNGARY	Land	CROATIA	River	Őrtilos	On request - operating only on request
HUNGARY	Land	CROATIA	Not specified	Udvar	24//7

- Between Hungary and Romania: there are 19 ground crossings – Ferry 1; Highway 1; Railway 5; Road 8 and 5 - Not specified
- Drávaszabolcs is operating only on request from 07:00-19:00, Őrtilos - operating only on request
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
HUNGARY	Land	ROMANIA	Railway	Ágerdőmajor	24//7
HUNGARY	Land	ROMANIA	Not specified	Ártánd	24//7
HUNGARY	Land	ROMANIA	Road	Battonya	24//7
HUNGARY	Land	ROMANIA	Railway	Biharkeresztes	24//7
HUNGARY	Land	ROMANIA	Road	Csanádpalota	On request - operating only on request
HUNGARY	Land	ROMANIA	Highway	Csanádpalota-Nadlac	24//7
HUNGARY	Land	ROMANIA	Not specified	Csengersima	24//7
HUNGARY	Land	ROMANIA	Road	Dombegyhaz	Only day time - 08:00-16:00
HUNGARY	Land	ROMANIA	Road	Elek	Only day time - 08:00-16:00
HUNGARY	Land	ROMANIA	Road	Gyula	24//7
HUNGARY	Land	ROMANIA	Road	Kiszombor	24//7
HUNGARY	Land	ROMANIA	Railway	Kötegyán	24//7
HUNGARY	Land	ROMANIA	Not specified	Létavértes	Only day time - 06:00-22:00
HUNGARY	Land	ROMANIA	Railway	Lőkösháza	24//7
HUNGARY	Land	ROMANIA	Not specified	Méhkerék	24//7
HUNGARY	Land	ROMANIA	Road	Nagylak	24//7
HUNGARY	Land	ROMANIA	Road	Nyírábrány (road)	24//7
HUNGARY	Land	ROMANIA	Railway	Nyírábrány (railway)	24//7
HUNGARY	Land	ROMANIA	Not specified	Vállaj	24//7

- Between Hungary and Romania: there are 10 ground crossings – Ferry 1; Highway 1; Railway 2; Road 4 and 2 - Not specified
- Asotthalom; Bacsalmas; Roszke; Roszke (Railway); Szeged; Tiszasziget open only day time
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
HUNGARY	Land	SERBIA	Road	Ásotthalom	Only day time - 07:00-19:00
HUNGARY	Land	SERBIA	Not specified	Bácsalmás	Only day time - 07:00-19:00
HUNGARY	Land	SERBIA	Road	Hercegszántó	24//7
HUNGARY	Land	SERBIA	Railway	Kelebia	24//7
HUNGARY	Land	SERBIA	Highway	Röszke (highway)	24//7
HUNGARY	Land	SERBIA	Road	Röszke (road)	Only day time - 07:00-19:00
HUNGARY	Land	SERBIA	Railway	Roszke (Railway)	Only day time - Temporarily closed
HUNGARY	Land	SERBIA	Ferry	Szeged	Only day time - 07:00-19:00
HUNGARY	Land	SERBIA	Not specified	Tiszasziget	Only day time - 07:00-19:00
HUNGARY	Land	SERBIA	Road	Tompa	24//7

- Between Hungary and Serbia and Croatia: there is 1 Ferry ground crossing open 24/7

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
HUNGARY	Land	SERBIA and CROATIA	Ferry	Mohács	24//7

- Between Hungary and Ukraine: there are 8 ground crossings - Railway 2; Road 4; 1 - Not specified and River 1
- Barabás, Lónya, Tiszabecs open only day time
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
HUNGARY	Land	UKRAINE	Not specified	Barabás	Only day time - 07:00-19:00
HUNGARY	Land	UKRAINE	Road	Beregsurány	24//7
HUNGARY	Land	UKRAINE	Railway	Eperjeske	24//7
HUNGARY	Land	UKRAINE	Road	Lónya	Only day time - 08:00-16:00
HUNGARY	Land	UKRAINE	River	Tiszabecs	On request - operating only on request
HUNGARY	Land	UKRAINE	Road	Tiszabecs	24//7
HUNGARY	Land	UKRAINE	Road	Záhony	24//7
HUNGARY	Land	UKRAINE	Railway	Záhony	24//7

- Bácsszentgyörgy, Bagamér, Garbolc, Gyula/Dénesmajor, Kőrösnagyharsány, Nagyhódos, Ömböly, Pocsaj, Zajta open only day time

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
HUNGARY	Land		Road	Bácsszentgyörgy	Only day time - open from 01. April 2018 09:00-19:00
HUNGARY	Land		Road	Bagamér	Only day time 09:00-17:00
HUNGARY	Land		Road	Garbolc	Only day time 09:00-17:00
HUNGARY	Land		Road	Gyula/Dénesmajor	Only day time 09:00-17:00
HUNGARY	Land		Road	Kőrösnagyharsány	Only day time 09:00-17:00
HUNGARY	Land		Road	Nagyhódos	Only day time open from 30. July 2018 from 09:00-19:00
HUNGARY	Land		Road	Ömböly	Only day time 09:00-17:00
HUNGARY	Land		Road	Pocsaj	Only day time 09:00-17:00
HUNGARY	Land		Road	Zajta	Only day time 09:00-17:00

LATVIA

LATVIA has a total of 12 ground crossings with Belarus (12) and the Russian Federation (6)

- Between Latvia and Belarus: there are 6 ground crossings - Railway 1; Road 5
- 3 ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
LATVIA	Land	BELARUS	Railway	Indra-Bigosova	24//7
LATVIA	Land	BELARUS	Road	Kaplava-Pļusi	On request
LATVIA	Land	BELARUS	Road	Meikšāni-Gavriļino	On request - Upon request
LATVIA	Land	BELARUS	Road	Pēternieki-Grigorovščina	24//7
LATVIA	Land	BELARUS	Road	Piedruja-Druja	On request - Upon request
LATVIA	Land	BELARUS	Road	Silene-Urbani	24//7

- Between Latvia and the Russian Federation: there are 6 ground crossings - Railway 2; Road 4;
- Pededze-Bruniševa openings only day time
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
LATVIA	Land	RUSSIAN FEDERATION	Road	Grebņeva-Ubiļinka	24//7
LATVIA	Land	RUSSIAN FEDERATION	Railway	Kārsava-Skangaļi	24//7
LATVIA	Land	RUSSIAN FEDERATION	Road	Pededze-Bruniševa	Only day time Opening hours 07:00 to 19:00
LATVIA	Land	RUSSIAN FEDERATION	Road	Terehova-Burački	24//7
LATVIA	Land	RUSSIAN FEDERATION	Road	Vientuļi-Ludonka	24//7
LATVIA	Land	RUSSIAN FEDERATION	Railway	Zilupe-Posiņi	24//7

LITHUANIA

LITHUANIA has a total of 29 ground crossings with Belarus (18) and the Russian Federation (10)

- Between Lithuania and Belarus: there are 18 ground crossings - Railway 2; River-Ferry 1; Road 15
- Adutiškis – Moldevičiai; Eišiškės – Dotiškės; Latežeris – Pariečė; Švendubrė – Privalka opening only day time
- 8 ground crossings are open 24 hours per day (24/7)
- 6 – not specified

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
LITHUANIA	Land	BELARUS	Road	Adutiškis – Moldevičiai	Only day time
LITHUANIA	Land	BELARUS	Road	Eišiškės – Dotiškės	Only day time
LITHUANIA	Land	BELARUS	Railway	Kena – Gudagojis	24//7
LITHUANIA	Land	BELARUS	Road	Krakūnai – Geranainys	On request
LITHUANIA	Land	BELARUS	Road	Latežeris – Pariečė	Only day time
LITHUANIA	Land	BELARUS	Road	Lavoriškės – Kotlovka	24//7
LITHUANIA	Land	BELARUS	Road	Medininkai – Kamenyj Log	24//7
LITHUANIA	Land	BELARUS	Road	Norviliškės – Pickūnai	On request
LITHUANIA	Land	BELARUS	Road	Papelekis – Lentupis	On request

LITHUANIA	Land	BELARUS	Road	Prienai – Kiemeliškės	On request
LITHUANIA	Land	BELARUS	Road	Raigardas – Privalka	24//7
LITHUANIA	Land	BELARUS	Road	Rakai – Petiulevcai	On request
LITHUANIA	Land	BELARUS	Road	Šalčininkai – Benekainys	24//7
LITHUANIA	Land	BELARUS	Railway	Stasylos – Benekainys	24//7
LITHUANIA	Land	BELARUS	Road	Šumskas – Loša	24//7
LITHUANIA	Land	BELARUS	River-Ferry	Švendubrė – Privalka	Only day time
LITHUANIA	Land	BELARUS	Road	Tverečius – Vidžiai	24//7
LITHUANIA	Land	BELARUS	Road	Ureliai – Klevyčia	On request

- Between Lithuania and the Russian Federation: there are 10 ground crossings - Railway 2; River-Ferry 3; Road 5
- Six ground crossings (Kybartai – Černyševskoje, Kybartai – Nesterov, Nida – Morskoje, Pagėgiai – Sovetsk, Panemunė – Sovetsk) are open 24/7 and one of them Ramoniškiai – Pograničnyj-(open 24/7) Open only for residents of Lithuania and the Russian Fed. according to the Agreement of 24 February 1995 between the Governments of Lithuania and the Russian Fed. regarding border crossing points between Lithuania and the Russian Fed.(Article 1(1)(1.2)(d)

COUNTRY	**BORDER**	**BORDER**	**TYPE**	**NAME**	**Opening_times**
LITHUANIA	Land	RUSSIAN FEDERATION	River-Ferry	Jurbarkas – Sovetsk	On request
LITHUANIA	Land	RUSSIAN FEDERATION	Road	Kybartai – Černyševskoje	24//7
LITHUANIA	Land	RUSSIAN FEDERATION	Railway	Kybartai – Nesterov	24//7
LITHUANIA	Land	RUSSIAN FEDERATION	Road	Nida – Morskoje	24//7
LITHUANIA	Land	RUSSIAN FEDERATION	River-Ferry	Nida – Rybačyj	On request
LITHUANIA	Land	RUSSIAN FEDERATION	Railway	Pagėgiai – Sovetsk	24//7
LITHUANIA	Land	RUSSIAN FEDERATION	Road	Panemunė – Sovetsk	24//7
LITHUANIA	Land	RUSSIAN FEDERATION	Road	Rambynas	Other
LITHUANIA	Land	RUSSIAN FEDERATION	Road	Ramoniškiai – Pograničnyj	24//7 Open only for residents of Lithuania and the Russian Fed. according to the Agreement of 24 February 1995 between the Governments of Lithuania and the Russian Fed. regarding border crossing points

					between Lithuania and the Russian Fed.(Article 1(1)(1.2)(d)
LITHUANIA	Land	RUSSIAN FEDERATION	River-Ferry	Rusnė – Sovetsk	On request

- One railway ground crossing (open 24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
LITHUANIA	Land		Railway	Vilnius	24//7

NORWAY

NORWAY has one road ground crossing with the Russian Federation and this crossing is open only during the day time

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
NORWAY	Land	RUSSIAN FEDERATION	Road	Storskog	Only day time 07:00-21:00

POLAND

POLAND has a total of 34 ground crossings with Belarus (13), the Russian Federation (7) and Ukraine (14)

- Between Poland and Belarus: there are 13 ground crossings - Railway 5; River 1; Road 7
- Bialowieza - open from 1 April to 30 September, between 8:00 and 20:00; from 1 October to 31 March, between 8:00 and 18:00; Rudawka – open from 1 May to 1 October between 7:00 and 19:00
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
POLAND	Land	BELARUS	Road	Bialowieza (road)	Only day time - from 1 April to 30 September, between 8:00 and 20:00; from 1 October to 31 March, between 8:00 and 18:00
POLAND	Land	BELARUS	Road	Bobrowniki (road)	24//7
POLAND	Land	BELARUS	Railway	Czeremcha (railway)	24//7
POLAND	Land	BELARUS	Road	Kukuryki (road)	24//7
POLAND	Land	BELARUS	Road	Kuznica	24//7

				Bialostocka (road)	
POLAND	Land	BELARUS	Railway	Kuznica Bialostocka (railway)	24//7
POLAND	Land	BELARUS	River	Rudawka (river)	Only day time - from 1 May to 1 October between 7:00 and 19:00
POLAND	Land	BELARUS	Railway	Siemianowka (railway)	24//7
POLAND	Land	BELARUS	Road	Slawatycze (road)	24//7
POLAND	Land	BELARUS	Railway	Terespol (railway)	24//7
POLAND	Land	BELARUS	Road	Terespol (road)	24//7
POLAND	Land	BELARUS	Railway	Zubki Białostockie - Bierestovica	-
POLAND	Land		Road	Polowce (road)	24//7

- Between Poland and the Russian Federation: there are 7 ground crossings - Railway 3; Road 4.
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
POLAND	Land	RUSSIAN FEDERATION	Road	Bezledy (road)	24//7
POLAND	Land	RUSSIAN FEDERATION	Railway	Braniewo (railway)	24//7
POLAND	Land	RUSSIA	Railway	Glomno - Bagrationovsk	-
POLAND	Land	RUSSIAN FEDERATION	Road	Goldap (road)	24//7
POLAND	Land	RUSSIAN FEDERATION	Road	Gronowo (road)	24//7
POLAND	Land	RUSSIAN FEDERATION	Road	Grzechotki (road)	24//7
POLAND	Land	RUSSIAN FEDERATION	Railway	Skandawa (railway)	24//7

- Between Poland and Ukraine: there are 14 ground crossings - Railway 6; Road 8
- All ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times

POLAND	Land	UKRAINE	Road	Budomierz (road)	24//7
POLAND	Land	UKRAINE	Road	Dolhobyczow (road)	24//7
POLAND	Land	UKRAINE	Railway	Dorohusk (railway)	24//7
POLAND	Land	UKRAINE	Road	Dorohusk (road)	24//7
POLAND	Land	UKRAINE	Road	Hrebenne (road)	24//7
POLAND	Land	UKRAINE	Railway	Hrebenne - Rava-Rus'ka	-
POLAND	Land	UKRAINE	Railway	Hrubieszow (railway)	24//7
POLAND	Land	UKRAINE	Road	Korczowa (road)	24//7
POLAND	Land	UKRAINE	Road	Krościenko (road)	24//7
POLAND	Land	UKRAINE	Railway	Krościenko - Khyriv	24//7
POLAND	Land	UKRAINE	Road	Medyka (road)	24//7
POLAND	Land	UKRAINE	Railway	Przemysl (railway)	24//7
POLAND	Land	UKRAINE	Railway	Werchrata (railway)	24//7
POLAND	Land	UKRAINE	Road	Zosin (road)	24//7

SLOVAKIA

SLOVAKIA has a total of 5 ground crossings with Ukraine (5)

- Between Slovakia and Ukraine: there are 5 ground crossings - Railway 2; Pedestrians 1; Road 1; Not specified 1
- One pedestrian ground crossing: Veľké Slemenceis open only during the day time
- Other ground crossings are open 24 hours per day (24/7)

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
SLOVAKIA	Land	UKRAINE	Railway	Čierna nad Tisou	24//7
SLOVAKIA	Land	UKRAINE	Railway	Maťovské Vojkovce	24//7
SLOVAKIA	Land	UKRAINE	Not specified	Ubľa	24//7
SLOVAKIA	Land	UKRAINE	Pedestrians	Veľké Slemence	Only day time
SLOVAKIA	Land	UKRAINE	Road	VYSNE NEMECKE	24//7

SLOVENIA

SLOVENIA has a total of 57 ground crossings with Croatia

- Between Slovenia and Croatia: there are 57 ground crossings - Railway 8; Road 49; Not specified 1
- 34 ground crossings are open 24/7
- 20 ground crossings are open only during day time
- 3 ground crossings: there are no data

COUNTRY	BORDER	BORDER	TYPE	NAME	Opening_times
SLOVENIA	Land	CROATIA	Road	BABNO POLJE	24//7
SLOVENIA	Land	CROATIA	Road	BISTRICA OB SOTLI	24//7
SLOVENIA	Land	CROATIA	Road	Božakovo – Obrež	-
SLOVENIA	Land		Road	Brezovica – Brezovica	-
SLOVENIA	Land	CROATIA	Road	BREZOVICA PRI GRADINU	Only day time
SLOVENIA	Land	CROATIA	Railway	DOBOVA	24//7
SLOVENIA	Land	CROATIA	Road	DOBOVEC	24//7
SLOVENIA	Land	CROATIA	Road	DRAGONJA	24//7
SLOVENIA	Land	CROATIA	Road	DRENOVEC	Only day time
SLOVENIA	Land	CROATIA	Road	GIBINA	24//7
SLOVENIA	Land	CROATIA	Road	Gruškovje	24//7
SLOVENIA	Land	CROATIA	Road	HOTIZA	Only day time
SLOVENIA	Land	CROATIA	Railway	ILIRSKA BISTRICA	24//7
SLOVENIA	Land	CROATIA	Road	IMENO	24//7
SLOVENIA	Land	CROATIA	Railway	Imeno-Kumrovec	-
SLOVENIA	Land	CROATIA	Road	Jelšane	24//7
SLOVENIA	Land	CROATIA	Road	KRASINEC	Only day time
SLOVENIA	Land	CROATIA	Road	Krmačina	Only day time
SLOVENIA	Land	CROATIA	Railway	LENDAVA	24//7
SLOVENIA	Land	CROATIA	Railway	METLIKA	24//7
SLOVENIA	Land	CROATIA	Road	METLIKA	24//7
SLOVENIA	Land	CROATIA	Road	Nova Vas ob Sotli	Only day time
SLOVENIA	Land	CROATIA	Road	NOVI KOT	Only day time
SLOVENIA	Land	CROATIA	Road	NOVOKRACINE	Only day time
SLOVENIA	Land	CROATIA	Road	Obrezje	24//7
SLOVENIA	Land	CROATIA	Road	Orešje	24//7
SLOVENIA	Land	CROATIA	Road	Ormož	24//7
SLOVENIA	Land	CROATIA	Road	OSILNICA	24//7

SLOVENIA	Land	CROATIA	Road	Petišovci	24//7
SLOVENIA	Land	CROATIA	Road	PETRINA	24//7
SLOVENIA	Land	CROATIA	Road	PLANINA V PODBOCJU	Only day time
SLOVENIA	Land	CROATIA	Road	Podčetrtek	Only day time
SLOVENIA	Land	CROATIA	Road	Podgorje	Only day time
SLOVENIA	Land	CROATIA	Road	PODPLANINA	24//7
SLOVENIA	Land	CROATIA	Road	Radovica	Only day time
SLOVENIA	Land	CROATIA	Road	Rajnkovec	Only day time
SLOVENIA	Land	CROATIA	Railway	Rakitovec	24//7
SLOVENIA	Land	CROATIA	Road	Rakitovec	Only day time
SLOVENIA	Land	CROATIA	Road	Rakovec	Only day time
SLOVENIA	Land	CROATIA	Road	Razkrizje	24//7
SLOVENIA	Land	CROATIA	Road	Rigonce	24//7
SLOVENIA	Land	CROATIA	Railway	Rogatec	24//7
SLOVENIA	Land	CROATIA	Road	Rogatec	24//7
SLOVENIA	Land	CROATIA	Road	Sečovlje	24//7
SLOVENIA	Land	CROATIA	Road	Sedlarjevo	Only day time
SLOVENIA	Land	CROATIA	Road	Slovenska vas	24//7
SLOVENIA	Land	CROATIA	Road	Sočerga	24//7
SLOVENIA	Land	CROATIA	Road	SODEVCI	Only day time
SLOVENIA	Land	CROATIA	Road	Središče ob Dravi	24//7
SLOVENIA	Land	CROATIA	Railway	Središče ob Dravi	24//7
SLOVENIA	Land	CROATIA	Road	Središče ob Dravi I	Only day time
SLOVENIA	Land	CROATIA	Road	Stara vas/Bizeljsko	Only day time
SLOVENIA	Land	CROATIA	Road	Starod	24//7
SLOVENIA	Land	CROATIA	Road	Vinica	24//7
SLOVENIA	Land	CROATIA	Road	Zavrč	24//7
SLOVENIA	Land	CROATIA	Road	Zgornji Leskovec	24//7
SLOVENIA	Land	CROATIA	Road	Žuniči	Only day time

Annex B: Questionnaire

https://ec.europa.eu/eusurvey/runner/EUHealthyGateways2019

Annex C: Search strategy

(TITLE-ABS-KEY (*international* AND *border*) OR TITLE-ABS-KEY (*point* AND *of* AND *entry*) OR TITLE-ABS-KEY (*border*) OR TITLE-ABS-KEY (*cross* AND *border*) OR TITLE-ABS-KEY (*cross-border*) OR TITLE-ABS-KEY (*border* AND *control*) OR TITLE-ABS-KEY (*"ground crossing"*) OR TITLE-ABS-KEY (*"land crossing"*) OR TITLE-ABS-KEY (*land* AND *border*) OR TITLE-ABS-KEY (*crossing* AND *point*) OR TITLE-ABS-KEY (*border* AND *control*) OR TITLE-ABS-KEY (*customs*) OR TITLE-ABS-KEY (*toll*) OR TITLE-ABS-KEY (*"border sanitary station"*) OR TITLE-ABS-KEY (*"border sanitary inspection"*) OR TITLE-ABS-KEY (*land* AND *transport*) OR TITLE-ABS-KEY (*ground* AND *transport*) OR TITLE-ABS-KEY (*cargo*) OR TITLE-ABS-KEY (*train*) OR TITLE-ABS-KEY (*railway*) OR TITLE-ABS-KEY (*bus*) OR TITLE-ABS-KEY (*coach*) OR TITLE-ABS-KEY (*taxi*) OR TITLE-ABS-KEY (*conveyance*) OR TITLE-ABS-KEY (*passenger*) OR TITLE-ABS-KEY (*traveller*) OR TITLE-ABS-KEY (*international* AND *travel*) OR TITLE-ABS-KEY (*migration*) OR TITLE-ABS-KEY (*asylum-seeker*) OR TITLE-ABS-KEY (*migrant*) OR TITLE-ABS-KEY (*over* AND *land*) OR TITLE-ABS-KEY (*tourist*) OR TITLE-ABS-KEY (*tourism*)) **AND** (TITLE-ABS-KEY (*anthrax*) OR TITLE-ABS-KEY (*avian* AND *influenza*) OR TITLE-ABS-KEY (*botulism*) OR TITLE-ABS-KEY (*brucellosis*) OR TITLE-ABS-KEY (*campylobacteriosis*) OR TITLE-ABS-KEY (*chikungunya*) OR TITLE-ABS-KEY (*chlamydia*) OR TITLE-ABS-KEY (*cholera*) OR TITLE-ABS-KEY (*creutzfeldt-jakob*) OR TITLE-ABS-KEY (*cryptosporidiosis*) OR TITLE-ABS-KEY (*dengue*) OR TITLE-ABS-KEY (*diphtheria*) OR TITLE-ABS-KEY (*echinococcosis*) OR TITLE-ABS-KEY (*giardiasis*) OR TITLE-ABS-KEY (*gonococcal*) OR TITLE-ABS-KEY (*hepatitis* AND *a*) OR TITLE-ABS-KEY (*hav*) OR TITLE-ABS-KEY (*hepatitis* AND *b*) OR TITLE-ABS-KEY (*hbv*) OR TITLE-ABS-KEY (*hepatitis* AND *c*) OR TITLE-ABS-KEY (*hcv*) OR TITLE-ABS-KEY (*hiv*) OR TITLE-ABS-KEY (*aids*) OR TITLE-ABS-KEY (*haemophilus* AND *influenza*) OR TITLE-ABS-KEY (*influenza*) OR TITLE-ABS-KEY (*flu*) OR TITLE-ABS-KEY (*invasive* AND *meningococcal* AND *disease*) OR TITLE-ABS-KEY (*meningoccocal* AND *disease*) OR TITLE-ABS-KEY (*invasive* AND *pneumococcal* AND *disease*) OR TITLE-ABS-KEY (*lassa AND fever*) OR TITLE-ABS-KEY (*legionnaires'* AND *disease*) OR TITLE-ABS-KEY (*leptospirosis*) OR TITLE-ABS-KEY (*listeriosis*) OR TITLE-ABS-KEY (*lyme* AND *neuroborreliosis*) OR TITLE-ABS-KEY (*lyme*) OR TITLE-ABS-KEY (*malaria*) OR TITLE-ABS-KEY (*measles*) OR TITLE-ABS-KEY (*mumps*) OR TITLE-ABS-KEY (*pertussis*) OR TITLE-ABS-KEY (*plague*) OR TITLE-ABS-KEY (*pneumoccocal* AND *invasive* AND *diseases*) OR TITLE-ABS-KEY (*poliomyelitis*) OR TITLE-ABS-KEY (*q* AND *fever*) OR TITLE-ABS-KEY (*rabies*) OR TITLE-ABS-KEY (*rubella*) OR TITLE-ABS-KEY (*salmonellosis*) OR TITLE-ABS-KEY (*severe* AND *acute* AND *respiratory* AND *syndrome*) OR TITLE-ABS-KEY (*sars*) OR TITLE-ABS-KEY (*shiga* AND *toxin*) OR TITLE-ABS-KEY (*verocytotoxin*) OR TITLE-ABS-KEY (*escherichia* AND *coli*) OR TITLE-ABS-KEY (*stec*) OR TITLE-ABS-KEY (*vtec*) OR TITLE-ABS-KEY (*shigellosis*) OR TITLE-ABS-KEY (*smallpox*) OR TITLE-ABS-KEY (*syphilis*) OR TITLE-ABS-KEY (*tetanus*) OR TITLE-ABS-KEY (*tick-borne* AND *encephalitis*) OR TITLE-ABS-KEY (*toxoplasmosis*) OR TITLE-ABS-KEY (*transmissible* AND *spongiform AND encephalopathy*) OR TITLE-ABS-KEY (*trichinosis*) OR TITLE-ABS-KEY (*tuberculosis*) OR TITLE-ABS-KEY (*tularaemia*) OR TITLE-ABS-KEY (*viral* AND *haemorrhagic* AND *fevers*) OR TITLE-ABS-KEY (*hemorrhagic AND fever*) OR TITLE-ABS-KEY (*VHF*) OR TITLE-ABS-KEY (*west* AND *nile* AND *virus*) OR TITLE-ABS-KEY (*yellow* AND *fever*) OR TITLE-ABS-

KEY (*yersinosis*) OR TITLE-ABS-KEY (*zika* AND *virus*) OR TITLE-ABS-KEY (*zika*) OR TITLE-ABS-KEY (*gastroenteritis*) OR TITLE-ABS-KEY (*diarrhea*) OR TITLE-ABS-KEY (*infectious* AND *disease*) OR TITLE-ABS-KEY (*outbreak*) OR TITLE-ABS-KEY (*epidemic*) OR TITLE-ABS-KEY (*contact AND tracing*) OR TITLE-ABS-KEY (*contact AND investigation*) OR TITLE-ABS-KEY (*passenger AND tracing*)) **AND NOT** (TITLE-ABS-KEY (*cells*) OR TITLE-ABS-KEY (*radar*) OR TITLE-ABS-KEY (*sar*) OR TITLE-ABS-KEY (*protein*) OR TITLE-ABS-KEY (*proteins*) OR TITLE-ABS-KEY (*cell* AND *wall*) OR TITLE-ABS-KEY (*nuclear* AND *wall*) OR TITLE-ABS-KEY (*endoplasmic* AND *reticulum*) OR TITLE-ABS-KEY (*enzyme*) OR TITLE-ABS-KEY (*enzymes*) OR TITLE-ABS-KEY (*nucleus*) OR TITLE-ABS-KEY (*obesity*) OR TITLE-ABS-KEY (*overweight*) OR TITLE-ABS-KEY (*mother-to-child*)) **AND** (LIMIT-TO (DOCTYPE , *"ar"*) OR LIMIT-TO (DOCTYPE , *"re"*) OR LIMIT-TO (DOCTYPE , *"cp"*)) AND (LIMIT-TO (PUBYEAR , *2018*) OR LIMIT-TO (PUBYEAR , *2017*) OR LIMIT-TO (PUBYEAR , *2016*) OR LIMIT-TO (PUBYEAR , *2015*) OR LIMIT-TO (PUBYEAR , *2014*)) AND (LIMIT-TO (SUBJAREA , *"AGRI"*) OR LIMIT-TO (SUBJAREA , *"MEDI"*) OR LIMIT-TO (SUBJAREA , *"IMMU"*) OR LIMIT-TO (SUBJAREA , *"VETE"*) OR LIMIT-TO (SUBJAREA , *"PHAR"*) OR LIMIT-TO (SUBJAREA , *"MULT"*) OR LIMIT-TO (SUBJAREA , *"HEAL"*) OR LIMIT-TO (SUBJAREA , *"DECI"*))

Annex D: IHR law regulation

All information are based on International health regulations (2005) - 3rd ed. (2016 edition), which is directed to WHO States Parties (196 countries).

Regulation	**Article 1**	Category	
Keywords	definition; ground crossing; ground transport vehicle; point of entry; vector	Interventions	

"ground crossing" means a point of land entry in a State Party, including one utilized by road vehicles and trains; "ground transport vehicle" means a motorized conveyance for overland transport on an international voyage, including trains, coaches, lorries and automobiles; "point of entry" means a passage for international entry or exit of travellers, baggage, cargo,containers, conveyances, goods and postal parcels as well as agencies and areas providing services to them on entry or exit; "vector" means an insect or other animal which normally transports an infectious agent that constitutes a public health risk;

Regulation	**Article 2**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	purpose; scope	Interventions	

The purpose and scope of these Regulations are to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.

Regulation	**Article 3**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats

Keywords	principles	Interventions	

1. The implementation of these Regulations shall be with full respect for the dignity, human rights and fundamental freedoms of persons. 2. The implementation of these Regulations shall be guided by the Charter of the United Nations and the Constitution of the World Health Organization. 3. The implementation of these Regulations shall be guided by the goal of their universal application for the protection of all people of the world from the international spread of disease. 4. States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to legislate and to implement legislation in pursuance of their health policies. In doing so they should uphold the purpose of these Regulations.

Regulation	**Article 5**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	surveillance	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. Each State Party shall develop, strengthen and maintain, as soon as possible but no later than five years from the entry into force of these Regulations for that State Party, the capacity to detect, assess, notify and report events in accordance with these Regulations, as specified in Annex 1. 2. Following the assessment referred to in paragraph 2, Part A of Annex 1, a State Party may report to WHO on the basis of a justified need and an implementation plan and, in so doing, obtain an extension of two years in which to fulfil the obligation in paragraph 1 of this Article. In exceptional circumstances, and supported by a new implementation plan, the State Party may request a further extension not exceeding two years from the Director-General, who shall make the decision, taking into account the technical advice of the Committee established under Article 50 (hereinafter the"Review Committee"). After the period mentioned in paragraph 1 of this Article, the State Party that has obtained an extension shall report annually to WHO on progress made towards the full implementation. 3. WHO shall assist States Parties, upon request, to develop, strengthen and maintain the capacities referred to in paragraph 1 of this Article. 4. WHO shall collect information regarding events through its surveillance activities and

assess their potential to cause international disease spread and possible interference with international traffic. Information received by WHO under this paragraph shall be handled in accordance with Articles 11 and 45 where appropriate.

Regulation	**Article 6**	Category	detection of threats, counteracting the spread of threats
Keywords	notification	Interventions	An exchange of information

1. Each State Party shall assess events occurring within its territory by using the decision instrument in Annex 2. Each State Party shall notify WHO, by the most efficient means of communication available, by way of the National IHR Focal Point, and within 24 hours of assessment of public health information, of all events which may constitute a public health emergency of international concern within its territory in accordance with the decision instrument, as well as any health measure implemented in response to those events. If the notification received by WHO involves the competency of the International Atomic Energy Agency (IAEA), WHO shall immediately notify the IAEA. 2. Following a notification, a State Party shall continue to communicate to WHO timely, accurate and sufficiently detailed public health information available to it on the notified event, where possible including case definitions, laboratory results, source and type of the risk, number of cases and deaths, conditions affecting the spread of the disease and the health measures employed; and report, when necessary, the difficulties faced and support needed in responding to the potential public health emergency of international concern.

Regulation	**Article 7**	Category	detection of threats, counteracting the spread of threats
Keywords	information-sharing during unexpected or unusual public health events	Interventions	An exchange of information

If a State Party has evidence of an unexpected or unusual public health event within its territory, irrespective of origin or source, which may constitute a public health emergency of international concern, it shall provide to WHO all relevant public health information. In such a case, the provisions of Article 6 shall apply in full.

Regulation	**Article 8**	Category	detection of threats, counteracting the spread of threats
Keywords	consultation	Interventions	An exchange of information

In the case of events occurring within its territory not requiring notification as provided in Article 6, in particular those events for which there is insufficient information available to complete the decision instrument, a State Party may nevertheless keep WHO advised thereof through the National IHR Focal Point and consult with WHO on appropriate health measures. Such communications shall be treated in accordance with paragraphs 2 to 4 of Article 11. The State Party in whose territory the event has occurred may request WHO assistance to assess any epidemiological evidence obtained by that State Party.

Regulation	**Article 9**	Category	detection of threats, counteracting the spread of threats
Keywords	other reports; vectors	Interventions	An exchange of information; Supervision over vectors

1. WHO may take into account reports from sources other than notifications or consultations and shall assess these reports according to established epidemiological principles and then communicate information on the event to the State Party in whose territory the event is allegedly occurring. Before taking any action based on such reports, WHO shall consult with and attempt to obtain verification from the State Party in whose territory the event is allegedly occurring in accordance with the procedure set forth in Article 10. To this end, WHO shall make the information received available to the States Parties and only where it is duly justified may WHO maintain the confidentiality of the source. This information will be used in accordance with the procedure set forth in Article 11. 2. States Parties shall, as far as practicable, inform WHO within 24 hours of receipt of evidence of a public health risk identified outside their territory that may cause international disease spread, as manifested by exported or imported: (a) human cases; (b) vectors which carry infection or contamination; or (c) goods that are contaminated.

Regulation	**Article 10**	Category	detection of threats, counteracting the spread of threats
Keywords	verification	Interventions	An exchange of information

1. WHO shall request, in accordance with Article 9, verification from a State Party of reports from sources other than notifications or consultations of events which may constitute a public health emergency of international concern allegedly occurring in the State's territory. In such cases, WHO shall inform the State Party concerned regarding the reports it is seeking to verify. 2. Pursuant to the foregoing paragraph and to Article 9, each State Party, when requested by WHO, shall verify and provide: (a) within 24 hours, an initial reply to, or acknowledgement of, the request from WHO; (b) within 24 hours, available public health information on the status of events referred to in WHO's request; and (c) information to WHO in the context of an assessment under Article 6, including relevant information as described in that Article. 3. When WHO receives information of an event that may constitute a public health emergency of international concern, it shall offer to collaborate with the State Party concerned in assessing the potential for international disease spread, possible interference with international traffic and the adequacy of control measures. Such activities may include collaboration with other standard-setting organizations and the offer to mobilize international assistance in order to support the national authorities in conducting and coordinating on-site assessments. When requested by the State Party, WHO shall provide information supporting such an offer. 4. If the State Party does not accept the offer of collaboration, WHO may, when justified by the magnitude of the public health risk, share with other States Parties the information available to it, whilst encouraging the State Party to accept the offer of collaboration by WHO, taking into account the views of the State Party concerned.

Regulation	**Article 11**	Category	detection of threats, counteracting the spread of threats
Keywords	provision of information by WHO	Interventions	An exchange of information

1. Subject to paragraph 2 of this Article, WHO shall send to all States Parties and, as appropriate, to relevant intergovernmental organizations, as soon as possible and by the most efficient means available, in confidence, such public health information which

it has received under Articles 5 to 10 inclusive and which is necessary to enable States Parties to respond to a public health risk. WHO should communicate information to other States Parties that might help them in preventing the occurrence of similar incidents. 2. WHO shall use information received under Articles 6 and 8 and paragraph 2 of Article 9 for verification, assessment and assistance purposes under these Regulations and, unless otherwise agreed with the States Parties referred to in those provisions, shall not make this information generally available to other States Parties, until such time as: (a) the event is determined to constitute a public health emergency of international concern in accordance with Article 12; or (b) information evidencing the international spread of the infection or contamination has been confirmed by WHO in accordance with established epidemiological principles; or (c) there is evidence that: (i) control measures against the international spread are unlikely to succeed because of the nature of the contamination, disease agent, vector or reservoir; or (ii) the State Party lacks sufficient operational capacity to carry out necessary measures to prevent further spread of disease; or (d) the nature and scope of the international movement of travellers, baggage, cargo, containers, conveyances, goods or postal parcels that may be affected by the infection or contamination requires the immediate application of international control measures. 3. WHO shall consult with the State Party in whose territory the event is occurring as to its intent to make information available under this Article. 4. When information received by WHO under paragraph 2 of this Article is made available to States Parties in accordance with these Regulations, WHO may also make it available to the public if other information about the same event has already become publicly available and there is a need for the dissemination of authoritative and independent information.

Regulation	**Article 12**	Category	detection of threats, counteracting the spread of threats
Keywords	determination of a public health emergency of international concern	Interventions	An exchange of information

1. The Director-General shall determine, on the basis of the information received, in particular from the State Party within whose territory an event is occurring, whether an event constitutes a public health emergency of international concern in accordance with the criteria and the procedure set out in these Regulations. 2. If the Director-General considers, based on an assessment under these Regulations, that a public health emergency of international concern is occurring, the Director-General shall consult with the State Party in whose territory the event arises regarding this preliminary determination. If the Director- General and the State Party are in

agreement regarding this determination, the Director-General shall, in accordance with the procedure set forth in Article 49, seek the views of the Committee established under Article 48 (hereinafter the "Emergency Committee") on appropriate temporary recommendations. 3. If, following the consultation in paragraph 2 above, the Director-General and the State Party in whose territory the event arises do not come to a consensus within 48 hours on whether the event constitutes a public health emergency of international concern, a determination shall be made in accordance with the procedure set forth in Article 49. 4. In determining whether an event constitutes a public health emergency of international concern, the Director-General shall consider: (a) information provided by the State Party; (b) the decision instrument contained in Annex 2; (c) the advice of the Emergency Committee; (d) scientific principles as well as the available scientific evidence and other relevant information; and (e) an assessment of the risk to human health, of the risk of international spread of disease and of the risk of interference with international traffic. 5. If the Director-General, following consultations with the State Party within whose territory the public health emergency of international concern has occurred, considers that a public health emergency of international concern has ended, the Director-General shall take a decision in accordance with the procedure set out in Article 49.

Regulation	**Article 13**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	response	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. Each State Party shall develop, strengthen and maintain, as soon as possible but no later than five years from the entry into force of these Regulations for that State Party, the capacity to respond promptly and effectively to public health risks and public health emergencies of international concern as set out in Annex 1. WHO shall publish, in consultation with Member States, guidelines to support States Parties in the development of public health response capacities. 2. Following the assessment referred to in paragraph 2, Part A of Annex 1, a State Party may report to WHO on the basis of a justified need and an implementation plan and, in so doing, obtain anextension of two years in which to fulfil the obligation in paragraph 1 of this Article. In exceptional circumstances and supported by a new implementation plan, the State Party may

request a further extension not exceeding two years from the Director-General, who shall make the decision, taking into account the technical advice of the Review Committee. After the period mentioned in paragraph 1 of this Article, the State Party that has obtained an extension shall report annually to WHO on progress made towards the full implementation. 3. At the request of a State Party, WHO shall collaborate in the response to public health risks and other events by providing technical guidance and assistance and by assessing the effectiveness of the control measures in place, including the mobilization of international teams of experts for on-site assistance, when necessary. 4. If WHO, in consultation with the States Parties concerned as provided in Article 12, determines that a public health emergency of international concern is occurring, it may offer, in addition to the support indicated in paragraph 3 of this Article, further assistance to the State Party, including an assessment of the severity of the international risk and the adequacy of control measures. Such collaboration may include the offer to mobilize international assistance in order to support the national authorities in conducting and coordinating on-site assessments. When requested by the State Party, WHO shall provide information supporting such an offer. 5. When requested by WHO, States Parties should provide, to the extent possible, support to WHO-coordinated response activities. 6. When requested, WHO shall provide appropriate guidance and assistance to other States Parties affected or threatened by the public health emergency of international concern.

Regulation	**Article 14**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	cooperation of WHO with intergovernmental organizations and international bodies	Interventions	An exchange of information

1. WHO shall cooperate and coordinate its activities, as appropriate, with other competent intergovernmental organizations or international bodies in the implementation of these Regulations, including through the conclusion of agreements and other similar arrangements. 2. In cases in which notification or verification of, or response to, an event is primarily within the competence of other intergovernmental organizations or international bodies, WHO shall coordinate its activities with such organizations or bodies in order to ensure the application of adequate measures for the protection of public health. 3. Notwithstanding the foregoing, nothing in these Regulations shall preclude or limit the provision by WHO of advice, support, or

technical or other assistance for public health purposes.

Regulation	**Article 15**	Category	counteracting the spread of threats
Keywords	temporary recommendations; health measures	Interventions	Surrendering to action

1. If it has been determined in accordance with Article 12 that a public health emergency of international concern is occurring, the Director-General shall issue temporary recommendations in accordance with the procedure set out in Article 49. Such temporary recommendations may be modified or extended as appropriate, including after it has been determined that a public health emergency of international concern has ended, at which time other temporary recommendations may be issued as necessary for the purpose of preventing or promptly detecting its recurrence. 2. Temporary recommendations may include health measures to be implemented by the State Party experiencing the public health emergency of international concern, or by other States Parties, regarding persons, baggage, cargo, containers, conveyances, goods and/or postal parcels to prevent or reduce the international spread of disease and avoid unnecessary interference with international traffic. 3. Temporary recommendations may be terminated in accordance with the procedure set out in Article 49 at any time and shall automatically expire three months after their issuance. They may be modified or extended for additional periods of up to three months. Temporary recommendations may not continue beyond the second World Health Assembly after the determination of the public health emergency of international concern to which they relate.

Regulation	**Article 16**	Category	counteracting the spread of threats
Keywords	standing recommendations; health measures	Interventions	Surrendering to action

WHO may make standing recommendations of appropriate health measures in accordance with Article 53 for routine or periodic application. Such measures may be applied by States Parties regarding persons, baggage, cargo, containers, conveyances, goods and/or postal parcels for specific, ongoing public health risks in order to prevent

or reduce the international spread of disease and avoid unnecessary interference with international traffic. WHO may, in accordance with Article 53, modify or terminate such recommendations, as appropriate.

Regulation	**Article 17**	Category	counteracting the spread of threats
Keywords	criteria for recommendations; health measures	Interventions	Surrendering to action

When issuing, modifying or terminating temporary or standing recommendations, the Director- General shall consider: (a) the views of the States Parties directly concerned; (b) the advice of the Emergency Committee or the Review Committee, as the case may be; (c) scientific principles as well as available scientific evidence and information; (d) health measures that, on the basis of a risk assessment appropriate to the circumstances, are not more restrictive of international traffic and trade and are not more intrusive to persons than reasonably available alternatives that would achieve the appropriate level of health protection; (e) relevant international standards and instruments; (f) activities undertaken by other relevant intergovernmental organizations and international bodies; and (g) other appropriate and specific information relevant to the event. With respect to temporary recommendations, the consideration by the Director-General of subparagraphs (e) and (f) of this Article may be subject to limitations imposed by urgent circumstances.

Regulation	**Article 18**	Category	counteracting the spread of threats
Keywords	recommendations; persons; baggage; cargo; containers; conveyances; goods; postal parcels; vectors; other prophylactics; vaccination; passengers; luggage; obtaining data	Interventions	Surrendering to action; Collecting data; Information and education; Retention

1. Recommendations issued by WHO to States Parties with respect to persons may include the following advice: – no specific health measures are advised; – review

travel history in affected areas; – review proof of medical examination and any laboratory analysis; – require medical examinations; – review proof of vaccination or other prophylaxis; – require vaccination or other prophylaxis; – place suspect persons under public health observation; – implement quarantine or other health measures for suspect persons; – implement isolation and treatment where necessary of affected persons; – implement tracing of contacts of suspect or affected persons; – refuse entry of suspect and affected persons; – refuse entry of unaffected persons to affected areas; and – implement exit screening and/or restrictions on persons from affected areas. 2. Recommendations issued by WHO to States Parties with respect to baggage, cargo, containers, conveyances, goods and postal parcels may include the following advice: – no specific health measures are advised; – review manifest and routing; – implement inspections; – review proof of measures taken on departure or in transit to eliminate infection or contamination; – implement treatment of the baggage, cargo, containers, conveyances, goods, postal parcels or human remains to remove infection or contamination, including vectors and reservoirs; – the use of specific health measures to ensure the safe handling and transport of human remains; – implement isolation or quarantine; – seizure and destruction of infected or contaminated or suspect baggage, cargo, containers, conveyances, goods or postal parcels under controlled conditions if no available treatment or process will otherwise be successful; and – refuse departure or entry.

Regulation	**Article 19**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	general obligations; point of entry; vectors	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

Each State Party shall, in addition to the other obligations provided for under these Regulations: (a) ensure that the capacities set forth in Annex 1 for designated points of entry are developed within the timeframe provided in paragraph 1 of Article 5 and paragraph 1 of Article 13; (b) identify the competent authorities at each designated point of entry in its territory; and (c) furnish to WHO, as far as practicable, when requested in response to a specific potential public health risk, relevant data concerning sources of infection or contamination, including vectors and reservoirs, at

its points of entry, which could result in international disease spread.

Regulation	**Article 21**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	ground crossings	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. Where justified for public health reasons, a State Party may designate ground crossings that shall develop the capacities provided in Annex 1, taking into consideration: (a) the volume and frequency of the various types of international traffic, as compared to other points of entry, at a State Party's ground crossings which might be designated; and (b) the public health risks existing in areas in which the international traffic originates, or through which it passes, prior to arrival at a particular ground crossing. 2. States Parties sharing common borders should consider: (a) entering into bilateral or multilateral agreements or arrangements concerning prevention or control of international transmission of disease at ground crossings in accordance with Article 57; and (b) joint designation of adjacent ground crossings for the capacities in Annex 1 in accordance with paragraph 1 of this Article.

Regulation	**Article 22**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	role of competent authorities; other prophylactics; vaccination; passengers; luggage; cargo; conveyance; vectors; obtaining data; contact tracing	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. The competent authorities shall: (a) be responsible for monitoring baggage, cargo, containers, conveyances, goods, postal parcels and human remains departing and arriving from affected areas, so that they are maintained in such a condition that they are free of sources of infection or contamination, including vectors and reservoirs; (b) ensure, as far as practicable, that facilities used by travellers at points of entry are maintained in a sanitary condition and are kept free of sources of infection or contamination, including vectors and reservoirs; (c) be responsible for the supervision of any deratting, disinfection, disinsection or decontamination of baggage, cargo, containers, conveyances, goods, postal parcels and human remains or sanitary measures for persons, as appropriate under these Regulations; (d) advise conveyance operators, as far in advance as possible, of their intent to apply control measures to a conveyance, and shall provide, where available, written information concerning the methods to be employed; (e) be responsible for the supervision of the removal and safe disposal of any contaminated water or food, human or animal dejecta, wastewater and any other contaminated matter from a conveyance; (f) take all practicable measures consistent with these Regulations to monitor and control the discharge by ships of sewage, refuse, ballast water and other potentially disease-causing matter which might contaminate the waters of a port, river, canal, strait, lake or other international waterway; (g) be responsible for supervision of service providers for services concerning travellers, baggage, cargo, containers, conveyances, goods, postal parcels and human remains at points of entry, including the conduct of inspections and medical examinations as necessary; (h) have effective contingency arrangements to deal with an unexpected public health event; and (i) communicate with the National IHR Focal Point on the relevant public health measures taken pursuant to these Regulations. 2. Health measures recommended by WHO for travellers, baggage, cargo, containers, conveyances, goods, postal parcels and human remains arriving from an affected area may be reapplied on arrival, if there are verifiable indications and/or evidence that the measures applied on departure from the affected area were unsuccessful. 3. Disinsection, deratting, disinfection, decontamination and other sanitary procedures shall be carried out so as to avoid injury and as far as possible discomfort to persons, or damage to the environment in a way which impacts on public health, or damage to baggage, cargo, containers, conveyances, goods and postal parcels.

Regulation	**Article 23**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	general provisions; health measures on arrival and departure; other	Interventions	Surrendering to action;Collecting data; Information and education;

prophylactics; vaccination;
passengers; luggage;
cargo; conveyance;
vectors; obtaining data

1. Subject to applicable international agreements and relevant articles of these Regulations, a State Party may require for public health purposes, on arrival or departure: (a) with regard to travellers: (i) information concerning the traveller's destination so that the traveller may be contacted; (ii) information concerning the traveller's itinerary to ascertain if there was any travel in or near an affected area or other possible contacts with infection or contamination prior to arrival, as well as review of the traveller's health documents if they are required under these Regulations; and/or (iii) a non-invasive medical examination which is the least intrusive examination that would achieve the public health objective; (b) inspection of baggage, cargo, containers, conveyances, goods, postal parcels and human remains. 2. On the basis of evidence of a public health risk obtained through the measures provided in paragraph 1 of this Article, or through other means, States Parties may apply additional health measures, in accordance with these Regulations, in particular, with regard to a suspect or affected traveller, on a case-by-case basis, the least intrusive and invasive medical examination that would achieve the public health objective of preventing the international spread of disease. 3. No medical examination, vaccination, prophylaxis or health measure under these Regulations shall be carried out on travellers without their prior express informed consent or that of their parents or guardians, except as provided in paragraph 2 of Article 31, and in accordance with the law and international obligations of the State Party. 4. Travellers to be vaccinated or offered prophylaxis pursuant to these Regulations, or their parents or guardians, shall be informed of any risk associated with vaccination or with non-vaccination and with the use or non-use of prophylaxis in accordance with the law and international obligations of the State Party. States Parties shall inform medical practitioners of these requirements in accordance with the law of the State Party. 5. Any medical examination, medical procedure, vaccination or other prophylaxis which involves a risk of disease transmission shall only be performed on, or administered to, a traveller in accordance with established national or international safety guidelines and standards so as to minimize such a risk.

Regulation	**Article 24**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats

Keywords	special provisions for conveyances and conveyance operators; conveyance; other prophylactics; passengers; luggage; cargo; vectors; obtaining data	Interventions	Surrendering to action; Collecting data; Information and education; Supervision over vectors

1. States Parties shall take all practicable measures consistent with these Regulations to ensure that conveyance operators: (a) comply with the health measures recommended by WHO and adopted by the State Party; (b) inform travellers of the health measures recommended by WHO and adopted by the State Party for application on board; and (c) permanently keep conveyances for which they are responsible free of sources of infection or contamination, including vectors and reservoirs. The application of measures to control sources of infection or contamination may be required if evidence is found. 2. Specific provisions pertaining to conveyances and conveyance operators under this Article are provided in Annex 4. Specific measures applicable to conveyances and conveyance operators with regard to vector-borne diseases are provided in Annex 5.

Regulation	**Article 26**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	civilian lorries; trains and coaches in transit; other prophylactics; conveyance	Interventions	Surrendering to action;

Subject to Articles 27 and 43 or unless authorized by applicable international agreements, no health measure shall be applied to a civilian lorry, train or coach not coming from an affected area which passes through a territory without embarking, disembarking, loading or discharging.

Regulation	**Article 27**	Category	detection of threats, counteracting the spread of threats

Keywords	affected conveyances; conveyance; other prophylactics; vaccination; passengers; luggage; cargo; vectors; obtaining data; contact tracing	Interventions	Surrendering to action;Collecting data; Information and education; Retention;

1. If clinical signs or symptoms and information based on fact or evidence of a public health risk, including sources of infection and contamination, are found on board a conveyance, the competent authority shall consider the conveyance as affected and may: (a) disinfect, decontaminate, disinsect or derat the conveyance, as appropriate, or cause these measures to be carried out under its supervision; and (b) decide in each case the technique employed to secure an adequate level of control of the public health risk as provided in these Regulations. Where there are methods or materials advised by WHO for these procedures, these should be employed, unless the competent authority determines that other methods are as safe and reliable. The competent authority may implement additional health measures, including isolation of the conveyances, as necessary, to prevent the spread of disease. Such additional measures should be reported to the National IHR Focal Point. 2. If the competent authority for the point of entry is not able to carry out the control measures required under this Article, the affected conveyance may nevertheless be allowed to depart, subject to the following conditions: (a) the competent authority shall, at the time of departure, inform the competent authority for the next known point of entry of the type of information referred to under subparagraph (b); and (b) in the case of a ship, the evidence found and the control measures required shall be noted in the Ship Sanitation Control Certificate. Any such conveyance shall be permitted to take on, under the supervision of the competent authority, fuel, water, food and supplies. 3. A conveyance that has been considered as affected shall cease to be regarded as such when the competent authority is satisfied that: (a) the measures provided in paragraph 1 of this Article have been effectively carried out; and (b) there are no conditions on board that could constitute a public health risk.

Regulation	**Article 29**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	civilian lorries; trains and coaches at points of entry; conveyance	Interventions	Surrendering to action

WHO, in consultation with States Parties, shall develop guiding principles for applying health measures to civilian lorries, trains and coaches at points of entry and passing through ground crossings.

Regulation	**Article 30**	Category	detection of threats, counteracting the spread of threats
Keywords	special provisions for travellers; travellers under public health observation; contact tracing	Interventions	Surrendering to action; An exchange of information

Subject to Article 43 or as authorized in applicable international agreements, a suspect traveller who on arrival is placed under public health observation may continue an international voyage, if the traveller does not pose an imminent public health risk and the State Party informs the competent authority of the point of entry at destination, if known, of the traveller's expected arrival. On arrival, the traveller shall report to that authority.

Regulation	**Article 31**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	health measures relating to entry of travellers; other prophylactics; vaccination; passengers	Interventions	Surrendering to action; Collecting data; Retention

1. Invasive medical examination, vaccination or other prophylaxis shall not be required as a condition of entry of any traveller to the territory of a State Party, except that, subject to Articles 32, 42 and 45, these Regulations do not preclude States Parties from requiring medical examination, vaccination or other prophylaxis or proof of vaccination or other prophylaxis: (a) when necessary to determine whether a public health risk exists; (b) as a condition of entry for any travellers seeking temporary or permanent residence; (c) as a condition of entry for any travellers pursuant to Article

43 or Annexes 6 and 7; or (d) which may be carried out pursuant to Article 23. 2. If a traveller for whom a State Party may require a medical examination, vaccination or other prophylaxis under paragraph 1 of this Article fails to consent to any such measure, or refuses to provide the information or the documents referred to in paragraph 1(a) of Article 23, the State Party concerned may, subject to Articles 32, 42 and 45, deny entry to that traveller. If there is evidence of an imminent public health risk, the State Party may, in accordance with its national law and to the extent necessary to control such a risk, compel the traveller to undergo or advise the traveller, pursuant to paragraph 3 of Article 23, to undergo: (a) the least invasive and intrusive medical examination that would achieve the public health objective; (b) vaccination or other prophylaxis; or (c) additional established health measures that prevent or control the spread of disease, including isolation, quarantine or placing the traveller under public health observation.

Regulation	**Article 32**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	treatment of travellers; other prophylactics; vaccination; passengers; obtaining data	Interventions	Surrendering to action; Collecting data; Retention

In implementing health measures under these Regulations, States Parties shall treat travellers with respect for their dignity, human rights and fundamental freedoms and minimize any discomfort or distress associated with such measures, including by: (a) treating all travellers with courtesy and respect; (b) taking into consideration the gender, sociocultural, ethnic or religious concerns of travellers; and (c) providing or arranging for adequate food and water, appropriate accommodation and clothing, protection for baggage and other possessions, appropriate medical treatment, means of necessary communication if possible in a language that they can understand and other appropriate assistance for travellers who are quarantined, isolated or subject to medical examinations or other procedures for public health purposes.

Regulation	**Article 33**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats

Keywords	special provisions for goods; goods in transit; cargo	Interventions	Surrendering to action;

Subject to Article 43 or unless authorized by applicable international agreements, goods, other than live animals, in transit without transhipment shall not be subject to health measures under these Regulations or detained for public health purposes.

Regulation	**Article 34**	Category	conducting preventive activities, detection of threats
Keywords	special provisions for containers and container loading areas; cargo; vectors	Interventions	Surrendering to action; Supervision over vectors

1. States Parties shall ensure, as far as practicable, that container shippers use international traffic containers that are kept free from sources of infection or contamination, including vectors and reservoirs, particularly during the course of packing. 2. States Parties shall ensure, as far as practicable, that container loading areas are kept free from sources of infection or contamination, including vectors and reservoirs. 3. Whenever, in the opinion of a State Party, the volume of international container traffic is sufficiently large, the competent authorities shall take all practicable measures consistent with these Regulations, including carrying out inspections, to assess the sanitary condition of container loading areas and containers in order to ensure that the obligations contained in these Regulations are implemented. 4. Facilities for the inspection and isolation of containers shall, as far as practicable, be available at container loading areas. 5. Container consignees and consignors shall make every effort to avoid cross-contamination when multiple-use loading of containers is employed.

Regulation	**Article 35**	Category	conducting preventive activities, detection of threats
Keywords	health documents; other prophylactics; passengers;	Interventions	Collecting data

cargo; obtaining data

No health documents, other than those provided for under these Regulations or in recommendations issued by WHO, shall be required in international traffic, provided however that this Article shall not apply to travellers seeking temporary or permanent residence, nor shall it apply to document requirements concerning the public health status of goods or cargo in international trade pursuant to applicable international agreements. The competent authority may request travellers to complete contact information forms and questionnaires on the health of travellers, provided that they meet the requirements set out in Article 23.

Regulation	**Article 36**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	certificates; other prophylactics; vaccination; passengers	Interventions	Collecting data; Retention

1. Vaccines and prophylaxis for travellers administered pursuant to these Regulations, or to recommendations and certificates relating thereto, shall conform to the provisions of Annex 6 and, when applicable, Annex 7 with regard to specific diseases.
2. A traveller in possession of a certificate of vaccination or other prophylaxis issued in conformity with Annex 6 and, when applicable, Annex 7, shall not be denied entry as a consequence of the disease to which the certificate refers, even if coming from an affected area, unless the competent authority has verifiable indications and/or evidence that the vaccination or other prophylaxis was not effective.

Regulation	**Article 40**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	charges for health measures regarding travellers; other prophylactics; vaccination; passengers; luggage;	Interventions	Surrendering to action

	conveyance; obtaining data; contact tracing

1. Except for travellers seeking temporary or permanent residence, and subject to paragraph 2 of this Article, no charge shall be made by a State Party pursuant to these Regulations for the following measures for the protection of public health: (a) any medical examination provided for in these Regulations, or any supplementary examination which may be required by that State Party to ascertain the health status of the traveller examined; (b) any vaccination or other prophylaxis provided to a traveller on arrival that is not a published requirement or is a requirement published less than 10 days prior to provision of the vaccination or other prophylaxis; (c) appropriate isolation or quarantine requirements of travellers; (d) any certificate issued to the traveller specifying the measures applied and the date of application; or (e) any health measures applied to baggage accompanying the traveller. 2. States Parties may charge for health measures other than those referred to in paragraph 1 of this Article, including those primarily for the benefit of the traveller. 3. Where charges are made for applying such health measures to travellers under these Regulations, there shall be in each State Party only one tariff for such charges and every charge shall: (a) conform to this tariff; (b) not exceed the actual cost of the service rendered; and (c) be levied without distinction as to the nationality, domicile or residence of the traveller concerned. 4. The tariff, and any amendment thereto, shall be published at least 10 days in advance of any levy thereunder. 5. Nothing in these Regulations shall preclude States Parties from seeking reimbursement for expenses incurred in providing the health measures in paragraph 1 of this Article: (a) from conveyance operators or owners with regard to their employees; or (b) from applicable insurance sources. 6. Under no circumstances shall travellers or conveyance operators be denied the ability to depart from the territory of a State Party pending payment of the charges referred to in paragraphs 1 or 2 of this Article.

Regulation	**Article 41**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	charges for baggage; cargo; containers; conveyance; goods or postal parcels; other prophylactics; luggage	Interventions	Surrendering to action

1. Where charges are made for applying health measures to baggage, cargo, containers, conveyances, goods or postal parcels under these Regulations, there shall be in each State Party only one tariff for such charges and every charge shall: (a) conform to this tariff; (b) not exceed the actual cost of the service rendered; and (c) be levied without distinction as to the nationality, flag, registry or ownership of the baggage, cargo, containers, conveyances, goods or postal parcels concerned. In particular, there shall be no distinction made between national and foreign baggage, cargo, containers, conveyances, goods or postal parcels. 2. The tariff, and any amendment thereto, shall be published at least 10 days in advance of any levy thereunder.

Regulation	**Article 42**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	general provisions; implementation of health measures; other prophylactics	Interventions	Surrendering to action

Health measures taken pursuant to these Regulations shall be initiated and completed without delay, and applied in a transparent and non-discriminatory manner.

Regulation	**Article 43**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	additional health measures; other prophylactics; passengers; luggage; cargo; conveyance; obtaining data	Interventions	Surrendering to action

1. These Regulations shall not preclude States Parties from implementing health measures, in accordance with their relevant national law and obligations under international law, in response to specific public health risks or public health

emergencies of international concern, which: (a) achieve the same or greater level of health protection than WHO recommendations; or (b) are otherwise prohibited under Article 25, Article 26, paragraphs 1 and 2 of Article 28, Article 30, paragraph 1(c) of Article 31 and Article 33, provided such measures are otherwise consistent with these Regulations. Such measures shall not be more restrictive of international traffic and not more invasive or intrusive to persons than reasonably available alternatives that would achieve the appropriate level of health protection. 2. In determining whether to implement the health measures referred to in paragraph 1 of this Article or additional health measures under paragraph 2 of Article 23, paragraph 1 of Article 27, paragraph 2 of Article 28 and paragraph 2(c) of Article 31, States Parties shall base their determinations upon: (a) scientific principles; (b) available scientific evidence of a risk to human health, or where such evidence is insufficient, the available information including from WHO and other relevant intergovernmental organizations and international bodies; and (c) any available specific guidance or advice from WHO. 3. A State Party implementing additional health measures referred to in paragraph 1 of this Article which significantly interfere with international traffic shall provide to WHO the public health rationale and relevant scientific information for it. WHO shall share this information with other States Parties and shall share information regarding the health measures implemented. For the purpose of this Article, significant interference generally means refusal of entry or departure of international travellers, baggage, cargo, containers, conveyances, goods, and the like, or their delay, for more than 24 hours. 4. After assessing information provided pursuant to paragraph 3 and 5 of this Article and other relevant information, WHO may request that the State Party concerned reconsider the application of the measures. 5. A State Party implementing additional health measures referred to in paragraphs 1 and 2 of this Article that significantly interfere with international traffic shall inform WHO, within 48 hours of implementation, of such measures and their health rationale unless these are covered by a temporary or standing recommendation. 6. A State Party implementing a health measure pursuant to paragraph 1 or 2 of this Article shall within three months review such a measure taking into account the advice of WHO and the criteria in paragraph 2 of this Article. 7. Without prejudice to its rights under Article 56, any State Party impacted by a measure taken pursuant to paragraph 1 or 2 of this Article may request the State Party implementing such a measure to consult with it. The purpose of such consultations is to clarify the scientific information and public health rationale underlying the measure and to find a mutually acceptable solution. 8. The provisions of this Article may apply to implementation of measures concerning travellers taking part in mass congregations.

Regulation	**Article 44**	Category	conducting preventive activities, detection of threats, counteracting the

			spread of threats
Keywords	collaboration and assistance; contact tracing	Interventions	An exchange of information

1. States Parties shall undertake to collaborate with each other, to the extent possible, in: (a) the detection and assessment of, and response to, events as provided under these Regulations; (b) the provision or facilitation of technical cooperation and logistical support, particularly in the development, strengthening and maintenance of the public health capacities required under these Regulations; (c) the mobilization of financial resources to facilitate implementation of their obligations under these Regulations; and (d) the formulation of proposed laws and other legal and administrative provisions for the implementation of these Regulations. 2. WHO shall collaborate with States Parties, upon request, to the extent possible, in: (a) the evaluation and assessment of their public health capacities in order to facilitate the effective implementation of these Regulations; (b) the provision or facilitation of technical cooperation and logistical support to States Parties; and (c) the mobilization of financial resources to support developing countries in building, strengthening and maintaining the capacities provided for in Annex 1. 3. Collaboration under this Article may be implemented through multiple channels, including bilaterally, through regional networks and the WHO regional offices, and through intergovernmental organizations and international bodies.

Regulation	**Article 45**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	treatment of personal data; contact tracing	Interventions	Collecting data; An exchange of information

1. Health information collected or received by a State Party pursuant to these Regulations from another State Party or from WHO which refers to an identified or identifiable person shall be kept confidential and processed anonymously as required by national law. 2. Notwithstanding paragraph 1, States Parties may disclose and process personal data where essential for the purposes of assessing and managing a public health risk, but State Parties, in accordance with national law, and WHO must ensure that the personal data are: (a) processed fairly and lawfully, and not further processed in a way incompatible with that purpose; (b) adequate, relevant and not excessive in relation to that purpose; (c) accurate and, where necessary, kept up to

date; every reasonable step must be taken to ensure that data which are inaccurate or incomplete are erased or rectified; and (d) not kept longer than necessary. 3. Upon request, WHO shall as far as practicable provide an individual with his or her personal data referred to in this Article in an intelligible form, without undue delay or expense and, when necessary, allow for correction.

Regulation	**Article 46**	Category	detection of threats, counteracting the spread of threats
Keywords	transport and handling of biological substances; reagents and materials for diagnostic purposes	Interventions	

States Parties shall, subject to national law and taking into account relevant international guidelines, facilitate the transport, entry, exit, processing and disposal of biological substances and diagnostic specimens, reagents and other diagnostic materials for verification and public health response purposes under these Regulations.

Regulation	**Article 57**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	relationship with other international agreements	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. States Parties recognize that the IHR and other relevant international agreements should be interpreted so as to be compatible. The provisions of the IHR shall not affect the rights and obligations of any State Party deriving from other international agreements. 2. Subject to paragraph 1 of this Article, nothing in these Regulations shall prevent States Parties having certain interests in common owing to their health, geographical, social or economic conditions, from concluding special treaties or

arrangements in order to facilitate the application of these Regulations, and in particular with regard to: (a) the direct and rapid exchange of public health information between neighbouring territories of different States; (b) the health measures to be applied to international coastal traffic and to international traffic in waters within their jurisdiction; (c) the health measures to be applied in contiguous territories of different States at their common frontier; (d) arrangements for carrying affected persons or affected human remains by means of transport specially adapted for the purpose; and (e) deratting, disinsection, disinfection, decontamination or other treatment designed to render goods free of disease-causing agents. 3. Without prejudice to their obligations under these Regulations, States Parties that are members of a regional economic integration organization shall apply in their mutual relations the common rules in force in that regional economic integration organization.

Regulation	**Annex 1 A.**	Category	detection of threats, counteracting the spread of threats
Keywords	core capacity requirements for surveillance and response	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. States Parties shall utilize existing national structures and resources to meet their core capacity requirements under these Regulations, including with regard to: (a) their surveillance, reporting, notification, verification, response and collaboration activities; and (b) their activities concerning designated airports, ports and ground crossings. 2. Each State Party shall assess, within two years following the entry into force of these Regulations for that State Party, the ability of existing national structures and resources to meet the minimum requirements described in this Annex. As a result of such assessment, States Parties shall develop and implement plans of action to ensure that these core capacities are present and functioning throughout their territories as set out in paragraph 1 of Article 5 and paragraph 1 of Article 13. 3. States Parties and WHO shall support assessments, planning and implementation processes under this Annex. 4. At the local community level and/or primary public health response level The capacities: (a) to detect events involving disease or death above expected levels for the particular time and place in all areas within the territory of the State Party; and (b) to report all available essential information immediately to the appropriate level of healthcare response. At the community level, reporting shall be to local community health-care institutions or the appropriate health personnel. At

the primary public health response level, reporting shall be to the intermediate or national response level, depending on organizational structures. For the purposes of this Annex, essential information includes the following: clinical descriptions, laboratory results, sources and type of risk, numbers of human cases and deaths, conditions affecting the spread of the disease and the health measures employed; and (c) to implement preliminary control measures immediately. 5. At the intermediate public health response levels The capacities: (a) to confirm the status of reported events and to support or implement additional control measures; and (b) to assess reported events immediately and, if found urgent, to report all essential information to the national level. For the purposes of this Annex, the criteria for urgent events include serious public health impact and/or unusual or unexpected nature with high potential for spread. 6. At the national level Assessment and notification. The capacities: (a) to assess all reports of urgent events within 48 hours; and (b) to notify WHO immediately through the National IHR Focal Point when the assessment indicates the event is notifiable pursuant to paragraph 1 of Article 6 and Annex 2 and to inform WHO as required pursuant to Article 7 and paragraph 2 of Article 9. Public health response. The capacities: (a) to determine rapidly the control measures required to prevent domestic and international spread; (b) to provide support through specialized staff, laboratory analysis of samples (domestically or through collaborating centres) and logistical assistance (e.g. equipment, supplies and transport); (c) to provide on-site assistance as required to supplement local investigations; (d) to provide a direct operational link with senior health and other officials to approve rapidly and implement containment and control measures; (e) to provide direct liaison with other relevant government ministries; (f) to provide, by the most efficient means of communication available, links with hospitals, clinics, airports, ports, ground crossings, laboratories and other key operational areas for the dissemination of information and recommendations received from WHO regarding events in the State Party's own territory and in the territories of other States Parties; (g) to establish, operate and maintain a national public health emergency response plan, including the creation of multidisciplinary/multisectoral teams to respond to events that may constitute a public health emergency of international concern; and (h) to provide the foregoing on a 24-hour basis.

Regulation	**Annex 1 B.**	Category	detection of threats, counteracting the spread of threats
Keywords	core capacity requirements for designated airports; ports and ground crossings; other prophylactics; passengers;	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of

	luggage; cargo; conveyance; vectors		information

1. At all times The capacities: (a) to provide access to (i) an appropriate medical service including diagnostic facilities located so as to allow the prompt assessment and care of ill travellers, and (ii) adequate staff, equipment and premises; (b) to provide access to equipment and personnel for the transport of ill travellers to an appropriate medical facility; (c) to provide trained personnel for the inspection of conveyances; (d) to ensure a safe environment for travellers using point of entry facilities, including potable water supplies, eating establishments, flight catering facilities, public washrooms, appropriate solid and liquid waste disposal services and other potential risk areas, by conducting inspection programmes, as appropriate; and (e) to provide as far as practicable a programme and trained personnel for the control of vectors and reservoirs in and near points of entry. 2. For responding to events that may constitute a public health emergency of international concern The capacities: (a) to provide appropriate public health emergency response by establishing and maintaining a public health emergency contingency plan, including the nomination of a coordinator and contact points for relevant point of entry, public health and other agencies and services; (b) to provide assessment of and care for affected travellers or animals by establishing arrangements with local medical and veterinary facilities for their isolation, treatment and other support services that may be required; (c) to provide appropriate space, separate from other travellers, to interview suspect or affected persons; (d) to provide for the assessment and, if required, quarantine of suspect travellers, preferably in facilities away from the point of entry; (e) to apply recommended measures to disinsect, derat, disinfect, decontaminate or otherwise treat baggage, cargo, containers, conveyances, goods or postal parcels including, when appropriate, at locations specially designated and equipped for this purpose; (f) to apply entry or exit controls for arriving and departing travellers; and (g) to provide access to specially designated equipment, and to trained personnel with appropriate personal protection, for the transfer of travellers who may carry infection or contamination.

Regulation	**Annex 2**	Category	detection of threats, counteracting the spread of threats
Keywords	decision instrument; contact tracing	Interventions	An exchange of information

Decision instrument for the assessment and notification of events that may constitute

a public health emergency of international concern.

Regulation	**Annex 4**	Category	detection of threats, counteracting the spread of threats
Keywords	technical requirements pertaining to conveyances and conveyance operators; conveyance; other prophylactics; passengers; luggage; cargo; vectors; obtaining data	Interventions	Surrendering to action; Collecting data; Information and education; Retention; An exchange of information

Section A Conveyance operators 1. Conveyance operators shall facilitate: (a) inspections of the cargo, containers and conveyance; (b) medical examinations of persons on board; (c) application of other health measures under these Regulations; and (d) provision of relevant public health information requested by the State Party. 2. Conveyance operators shall provide to the competent authority a valid Ship Sanitation Control Exemption Certificate or a Ship Sanitation Control Certificate or a Maritime Declaration of Health, or the Health Part of an Aircraft General Declaration, as required under these Regulations. Section B Conveyances 1. Control measures applied to baggage, cargo, containers, conveyances and goods under these Regulations shall be carried out so as to avoid as far as possible injury or discomfort to persons or damage to the baggage, cargo, containers, conveyances and goods. Whenever possible and appropriate, control measures shall be applied when the conveyance and holds are empty. 2. States Parties shall indicate in writing the measures applied to cargo, containers or conveyances, the parts treated, the methods employed, and the reasons for their application. This information shall be provided in writing to the person in charge of an aircraft and, in case of a ship, on the Ship Sanitation Control Certificate. For other cargo, containers or conveyances, States Parties shall issue such information in writing to consignors, consignees, carriers, the person in charge of the conveyance or their respective agents.

Regulation	**Annex 5**	Category	detection of threats, counteracting the spread of threats
Keywords	specific measures for	Interventions	Supervision over vectors

vector-borne diseases;
conveyance; vectors

1. WHO shall publish, on a regular basis, a list of areas where disinsection or other vector control measures are recommended for conveyances arriving from these areas. Determination of such areas shall be made pursuant to the procedures regarding temporary or standing recommendations, as appropriate. 2. Every conveyance leaving a point of entry situated in an area where vector control is recommended should be disinsected and kept free of vectors. When there are methods and materials advised by the Organization for these procedures, these should be employed. The presence of vectors on board conveyances and the control measures used to eradicate them shall be included: (a) in the case of aircraft, in the Health Part of the Aircraft General Declaration, unless this part of the Declaration is waived by the competent authority at the airport of arrival; (b) in the case of ships, on the Ship Sanitation Control Certificates; and (c) in the case of other conveyances, on a written proof of treatment issued to the consignor, consignee, carrier, the person in charge of the conveyance or their agent, respectively. 3. States Parties should accept disinsecting, deratting and other control measures for conveyances applied by other States if methods and materials advised by the Organization have been applied. 4. States Parties shall establish programmes to control vectors that may transport an infectious agent that constitutes a public health risk to a minimum distance of 400 metres from those areas of point of entry facilities that are used for operations involving travellers, conveyances, containers, cargo and postal parcels, with extension of the minimum distance if vectors with a greater range are present. 5. If a follow-up inspection is required to determine the success of the vector control measures applied, the competent authorities for the next known port or airport of call with a capacity to make such an inspection shall be informed of this requirement in advance by the competent authority advising such follow-up. In the case of ships, this shall be noted on the Ship Sanitation Control Certificate. 6. A conveyance may be regarded as suspect and should be inspected for vectors and reservoirs if: (a) it has a possible case of vector-borne disease on board; (b) a possible case of vector-borne disease has occurred on board during an international voyage; or (c) it has left an affected area within a period of time where on-board vectors could still carry disease. 7. A State Party should not prohibit the landing of an aircraft or berthing of a ship in its territory if the control measures provided for in paragraph 3 of this Annex or otherwise recommended by the Organization are applied. However, aircraft or ships coming from an affected area may be required to land at airports or divert to another port specified by the State Party for that purpose. 8. A State Party may apply vector control measures to a conveyance arriving from an area affected by a vector-borne disease if the vectors for the foregoing disease are present in its territory.

Regulation	**Annex 6**	Category	conducting preventive activities
Keywords	vaccination; prophylaxis and related certificates; other prophylactics	Interventions	Collecting data

1. Vaccines or other prophylaxis specified in Annex 7 or recommended under these Regulations shall be of suitable quality; those vaccines and prophylaxis designated by WHO shall be subject to its approval. Upon request, the State Party shall provide to WHO appropriate evidence of the suitability of vaccines and prophylaxis administered within its territory under these Regulations. 2. Persons undergoing vaccination or other prophylaxis under these Regulations shall be provided with an international certificate of vaccination or prophylaxis (hereinafter the "certificate") in the form specified in this Annex. No departure shall be made from the model of the certificate specified in this Annex. 3. Certificates under this Annex are valid only if the vaccine or prophylaxis used has been approved by WHO. 4. Certificates must be signed in the hand of the clinician, who shall be a medical practitioner or other authorized health worker, supervising the administration of the vaccine or prophylaxis. The certificate must also bear the official stamp of the administering centre; however, this shall not be an accepted substitute for the signature. 5. Certificates shall be fully completed in English or in French. They may also be completed in another language, in addition to either English or French. 6. Any amendment of this certificate, or erasure, or failure to complete any part of it, may render it invalid. 7. Certificates are individual and shall in no circumstances be used collectively. Separate certificates shall be issued for children. 8. A parent or guardian shall sign the certificate when the child is unable to write. The signature of an illiterate shall be indicated in the usual manner by the person's mark and the indication by another that this is the mark of the person concerned. 9. If the supervising clinician is of the opinion that the vaccination or prophylaxis is contraindicated on medical grounds, the supervising clinician shall provide the person with reasons, written in English or French, and where appropriate in another language in addition to English or French, underlying that opinion, which the competent authorities on arrival should take into account. The supervising clinician and competent authorities shall inform such persons of any risk associated with non-vaccination and with the non-use of prophylaxis in accordance with paragraph 4 of Article 23. 10. An equivalent document issued by the Armed Forces to an active member of those Forces shall be accepted in lieu of an international certificate in the form shown in this Annex if: (a) it embodies medical information substantially the same as that required by such form; and (b) it contains a statement in English or in French and where appropriate in another language in addition to English or French recording the nature and date of the vaccination or prophylaxis and to the effect that it is issued in accordance with this paragraph.

Regulation	**Annex 7**	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Keywords	requirements concerning vaccination or prophylaxis for specific diseases; other prophylactics; vaccination; vectors	Interventions	Collecting data

1. In addition to any recommendation concerning vaccination or prophylaxis, the following diseases are those specifically designated under these Regulations for which proof of vaccination or prophylaxis may be required for travellers as a condition of entry to a State Party: Vaccination against yellow fever. 2. Recommendations and requirements for vaccination against yellow fever: (a) For the purpose of this Annex: (i) the incubation period of yellow fever is six days; (ii) yellow fever vaccines approved by WHO provide protection against infection starting 10 days following the administration of the vaccine; (iii) this protection continues for the life of the person vaccinated; and (iv) the validity of a certificate of vaccination against yellow fever shall extend for the life of the person vaccinated, beginning 10 days after the date of vaccination. (b) Vaccination against yellow fever may be required of any traveller leaving an area where the Organization has determined that a risk of yellow fever transmission is present. (c) If a traveller is in possession of a certificate of vaccination against yellow fever which is not yet valid, the traveller may be permitted to depart, but the provisions of paragraph 2(h) of this Annex may be applied on arrival. (d) A traveller in possession of a valid certificate of vaccination against yellow fever shall not be treated as suspect, even if coming from an area where the Organization has determined that a risk of yellow fever transmission is present. (e) In accordance with paragraph 1 of Annex 6 the yellow fever vaccine used must be approved by the Organization. (f) States Parties shall designate specific yellow fever vaccination centres within their territories in order to ensure the quality and safety of the procedures and materials employed. (g) Every person employed at a point of entry in an area where the Organization has determined that a risk of yellow fever transmission is present, and every member of the crew of a conveyance using any such point of entry, shall be in possession of a valid certificate of vaccination against yellow fever. (h) A State Party, in whose territory vectors of yellow fever are present, may require a traveller from an area where the Organization has determined that a risk of yellow fever transmission is present, who is unable to produce a valid certificate of vaccination against yellow fever, to be quarantined until the certificate becomes valid, or until a period of not more than six days, reckoned from the date of last

possible exposure to infection, has elapsed, whichever occurs first. (i) Travellers who possess an exemption from yellow fever vaccination, signed by an authorized medical officer or an authorized health worker, may nevertheless be allowed entry, subject to the provisions of the foregoing paragraph of this Annex and to being provided with information regarding protection from yellow fever vectors. Should the travellers not be quarantined, they may be required to report any feverish or other symptoms to the competent authority and be placed under surveillance.

Annex E: EU detailed law regulations

This section includes EU law regulations which establish a core of regulations related to border crossing.

- *Decision no 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC*

Regulation: Article 1

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	subject matter; purpose	Interventions	

1. This Decision lays down rules on epidemiological surveillance, monitoring, early warning of, and combating serious cross-border threats to health, including preparedness and response planning related to those activities, in order to coordinate and complement national policies.
2. This Decision aims to support cooperation and coordination between the Member States in order to improve the prevention and control of the spread of severe human diseases across the borders of the Member States, and to combat other serious cross-border threats to health in order to contribute to a high level of public health protection in the Union.
3. This Decision also clarifies the methods of cooperation and coordination between the various actors at Union level.

Regulation: Article 2

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	scope	Interventions	

1. This Decision shall apply to public health measures in relation to the following categories of serious cross-border threats to health:
(a) threats of biological origin, consisting of:
(i) communicable diseases;
(ii) antimicrobial resistance and healthcare-associated infections related to communicable diseases (hereinafter 'related special health issues');
(iii) biotoxins or other harmful biological agents not related to communicable diseases;

(b) threats of chemical origin;
(c) threats of environmental origin;
(d) threats of unknown origin;
(e) events which may constitute public health emergencies of international concern under the IHR, provided that they fall under one of the categories of threats set out in points (a) to (d).
2. This Decision shall also apply to the epidemiological surveillance of communicable diseases and of related special health issues.
3. The provisions of this Decision are without prejudice to provisions of other Union acts governing specific aspects of monitoring, early warning of, the coordination of preparedness and response planning for, and the coordination of, combating serious cross-border threats to health, including measures setting quality and safety standards for specific goods and measures concerning specific economic activities.
4. In exceptional emergency situations, a Member State or the Commission may request response coordination within the HSC, as referred to in Article 11, for serious cross-border threats to health other than those covered in Article 2(1), if it is considered that public health measures taken previously have proven insufficient to ensure a high level of protection of human health.
5. The Commission shall, in liaison with the Member States, ensure coordination and information exchange between the mechanisms and structures established under this Decision and similar mechanisms and structures established at Union level or under the Euratom Treaty whose activities are relevant for preparedness and response planning, monitoring, early warning of, and combating serious cross-border threats to health.
6. Member States shall retain the right to maintain or introduce additional arrangements, procedures and measures for their national systems in the fields covered by this Decision, including arrangements provided for in existing or future bilateral or multilateral agreements or conventions, on condition that such additional arrangements, procedures and measures do not impair the application of this Decision.

Regulation: Article 3

Type of norm	def.	Category
Range of application	EU	
Keywords	definition;contact tracing; epidemiological surveillance; monitoring; serious cross-border threat to health	Interventions

For the purposes of this Decision, the following definitions shall apply:
(a) 'case definition' means a set of commonly agreed diagnostic criteria that have to be fulfilled in order to accurately identify cases of a targeted serious cross-border threat to health in a given population, while excluding the detection of unrelated threats;
(b) 'communicable disease' means an infectious disease caused by a contagious agent which is transmitted from person to person by direct contact with an infected individual or

by indirect means such as exposure to a vector, animal, fomite, product or environment, or exchange of fluid, which is contaminated with the contagious agent;
(c) 'contact tracing' means measures implemented in order to trace persons who have been exposed to a source of a serious cross-border threat to health, and who are in danger of developing or have developed a disease;
(d) 'epidemiological surveillance' means the systematic collection, recording, analysis, interpretation and dissemination of data and analysis on communicable diseases and related special health issues;
(e) 'monitoring' means the continuous observation, detection or review of changes in a condition, in a situation, or in activities, including a continuous function that uses systematic collection of data and analysis on specified indicators relating to serious cross-border threats to health;EN L 293/6 Official Journal of the European Union 5.11.2013
(f) 'public health measure' means a decision or an action which is aimed at preventing, monitoring or controlling the spread of diseases or contamination, combating severe risks to public health or mitigating their impact on public health;
(g) 'serious cross-border threat to health' means a life- threatening or otherwise serious hazard to health of biological, chemical, environmental or unknown origin which spreads or entails a significant risk of spreading across the national borders of Member States, and which may necessitate coordination at Union level in order to ensure a high level of human health protection.

Regulation: Article 4

Type of norm	hard, proc.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	preparedness and response planning; other prophylactics	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. Member States and the Commission shall consult each other within the HSC referred to in Article 17 with a view to coordinating their efforts to develop, strengthen and maintain their capacities for the monitoring, early warning and assessment of, and response to, serious cross-border threats to health. That consultation shall be aimed at:
(a) sharing best practice and experience in preparedness and response planning;
(b) promoting the interoperability of national preparedness planning;
(c) addressing the intersectoral dimension of preparedness and response planning at Union level; and
(d) supporting the implementation of core capacity requirements for surveillance and response as referred to in Articles 5 and 13 of the IHR.
2. For the purpose of paragraph 1, Member States shall by 7 November 2014 and every three years thereafter provide the Commission with an update on the latest situation with

regard to their preparedness and response planning at national level.
That information shall cover the following:
(a) identification of, and update on the status of the implementation of, the core capacity standards for preparedness and response planning as determined at national level for the health sector, as provided to the WHO in accordance with IHR;
(b) description of the measures or arrangements aimed at ensuring interoperability between the health sector and other sectors including the veterinary sector, that are identified as being critical in the case of an emergency, in particular:
(i) coordination structures in place for cross-sectoral incidents;
(ii) emergency operational centres (crisis centres);
(c) description of the business continuity plans, measures or arrangements aimed at ensuring the continuous delivery of critical services and products.
The obligation to provide the information referred to in points (b) and (c) shall only apply if such measures or arrangements are in place or are provided for as part of national preparedness and response planning.
3. For the purpose of paragraph 1, when substantially revising national preparedness planning, Member States shall inform the Commission in a timely manner of the main aspects of the revision of their preparedness planning at national level that are relevant to the objectives referred to in paragraph 1 and to the specific issues referred to in paragraph 2.
4. When receiving classified information transmitted pursuant to paragraphs 2 and 3 of this Article, the Commission and the HSC shall apply the rules set out in the Annex to Commission Decision 2001/844/EC, ECSC, Euratom of 29 November 2001 amending its internal Rules of Procedure.
Each Member State shall ensure that its national security regulations apply to all natural persons resident on its territory and all legal persons established on its territory that handle the information referred to in paragraphs 2 and 3 of this Article. Those national security regulations shall offer a degree of protection of classified information at least equivalent to that provided by the rules on security as set out in the Annex to Commission Decision 2001/844/EC, ECSC, Euratom and by Council Decision 2011/292/EU of 31 March 2011 on the security rules for protecting EU classified information.EN 5.11.2013 Official Journal of the European Union L 293/7
5. The Commission shall make the information received in accordance with paragraphs 2 and 3 available to the members of the HSC.
On the basis of that information, and for the purpose of paragraph 1, the Commission shall, in a timely manner, initiate discussion in the HSC, including, where appropriate, on the basis of synthesis or thematic progress reports.
6. The Commission shall, by means of implementing acts, adopt templates to be used by the Member States when providing the information referred to in paragraphs 2 and 3 in order to ensure its relevance to the objectives identified in paragraph 1 and its comparability.
Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 18(2).

Regulation: Article 6

Type of hard, proc. Category detection of threats,

norm			counteracting the spread of threats
Range of application	EU		
Keywords	epidemiological surveillance; contact tracing	Interventions	Collecting data; An exchange of information

1. A network for the epidemiological surveillance of the communicable diseases and of the related special health issues referred to in points (i) and (ii) of point (a) of Article 2(1), is hereby established. The network shall be operated and coordinated by the ECDC.
2. The epidemiological surveillance network shall bring into permanent communication the Commission, the ECDC, and the competent authorities responsible at national level for epidemiological surveillance.
3. The national competent authorities referred to in paragraph 2 shall communicate the following information to the participating authorities of the epidemiological surveillance network:
(a) comparable and compatible data and information in relation to the epidemiological surveillance of communicable diseases and related special health issues referred to in points (i) and (ii) of point (a) of Article 2(1);
(b) relevant information concerning the progression of epidemic situations;
(c) relevant information concerning unusual epidemic phenomena or new communicable diseases of unknown origin, including those in third countries.
4. When reporting information on epidemiological surveillance, the national competent authorities shall, where available, use the case definitions adopted in accordance with paragraph 5 for each communicable disease and related special health issue referred to in paragraph 1.
5. The Commission shall, by means of implementing acts, establish and update:
(a) the list of communicable diseases and related special health issues established according to the criteria set out in the Annex and referred to in points (i) and (ii) of point (a) of Article 2(1), in order to ensure coverage of communicable diseases and related special health issues by the epidemiological surveillance network;
(b) case definitions concerning each communicable disease and related special health issue subject to epidemiological surveillance, in order to ensure the comparability and compatibility at Union level of the collected data;
(c) procedures for the operation of the epidemiological surveillance network as developed in application of Articles 5, 10 and 11 of Regulation (EC) No 851/2004.
Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 18(2).
On duly justified imperative grounds of urgency related to the severity or novelty of a serious cross-border threat to health or to the rapidity of its spread between the Member States, the Commission may adopt the measures referred to in points (a) and (b) through immediately applicable implementing acts in accordance with the procedure referred to in Article 18(3).

Regulation: Article 7

Type of norm	hard, proc.	Category	detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	ad hoc monitoring; contact tracing	Interventions	An exchange of information

1. Following an alert notified pursuant to Article 9 concerning a threat to health as referred to in point (iii) of point (a) of Article 2(1) and in points (b), (c) or (d) of Article 2(1), the Member States shall, in liaison with the Commission and on the basis of the available information from their monitoring systems, inform each other through the EWRS and, if the urgency of the situation so requires, through the HSC about developments with regard to the threat concerned at national level.
2. The information transmitted pursuant to paragraph 1, shall include in particular any change in geographical distribution, spread and severity of the threat concerned and of the means of detection, if available.
3. The Commission shall, by means of implementing acts, adopt, where necessary, the case definitions to be used for ad hoc monitoring, in order to ensure the comparability and compatibility at Union level of the collected data.
Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 18(2).
On duly justified imperative grounds of urgency related to the severity of a serious cross-border threat to health or to the rapidity of its spread between the Member States, the Commission may adopt or update the case definitions referred to in the first subparagraph through immediately applicable implementing acts in accordance with the procedure referred to in Article 18(3).

Regulation: Article 8

Type of norm	hard, proc.	Category	detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	early warning; response system; contact tracing	Interventions	An exchange of information

1. A rapid alert system for notifying at Union level alerts in relation to serious cross-border threats to health, an 'Early Warning and Response System' (EWRS), is hereby established. The EWRS shall enable the Commission and the competent authorities responsible at national level to be in permanent communication for the purposes of alerting, assessing public health risks and determining the measures that may be required to protect public health.
2. The Commission shall, by means of implementing acts, adopt procedures concerning the information exchange in order to ensure the proper functioning of the EWRS and the uniform implementation of Articles 8 and 9 and to avoid overlap of activities or conflicting

actions with existing structures and mechanisms for monitoring, early warning and combating serious cross-border threats to health.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 18(2).

Regulation: Article 9

Type of norm	hard, proc.	Category	detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	alert notification; contact tracing	Interventions	An exchange of information

1. National competent authorities or the Commission shall notify an alert in the EWRS where the emergence or development of a serious cross-border threat to health fulfils the following criteria:

(a) it is unusual or unexpected for the given place and time, or it causes or may cause significant morbidity or mortality in humans, or it grows rapidly or may grow rapidly in scale, or it exceeds or may exceed national response capacity; and

(b) it affects or may affect more than one Member State; and

(c) it requires or may require a coordinated response at Union level.EN 5.11.2013 Official Journal of the European Union L 293/9

2. Where the national competent authorities notify the WHO of events that may constitute public health emergencies of international concern in accordance with Article 6 of the IHR, they shall at the latest simultaneously notify an alert in the EWRS, provided that the threat concerned falls within those referred to in Article 2(1) of this Decision.

3. When notifying an alert, the national competent authorities and the Commission shall promptly communicate through the EWRS any available relevant information in their possession that may be useful for coordinating the response such as:

(a) the type and origin of the agent;

(b) the date and place of the incident or outbreak;

(c) means of transmission or dissemination;

(d) toxicological data;

(e) detection and confirmation methods;

(f) public health risks;

(g) public health measures implemented or intended to be taken at national level;

(h) measures other than public health measures;

(i) personal data necessary for the purpose of contact tracing in accordance with Article 16;

(j) any other information relevant to the serious cross-border threat to health in question.

4. The Commission shall make available to the national competent authorities through the EWRS any information that may be useful for coordinating the response referred to in Article 11, including information related to serious cross- border threats to health and public health measures related to serious cross-border threats to health transmitted through rapid alert and information systems established under other provisions of Union

law or the Euratom Treaty.

Regulation: Article 10

Type of norm	hard, proc.	Category	detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	public health risk assessment	Interventions	An exchange of information

1. Where an alert is notified pursuant to Article 9, the Commission shall, where necessary for the coordination of the response at Union level and upon request of the HSC referred to in Article 17 or on its own initiative, make promptly available to the national competent authorities and to the HSC, through the EWRS, a risk assessment of the potential severity of the threat to public health, including possible public health measures. That risk assessment shall be carried out by:

(a) the ECDC in accordance with Article 7(1) of Regulation (EC) No 851/2004 in the case of a threat referred to in points (i) and (ii) of point (a) of Article 2(1) or point (d) of Article 2(1); and/or

(b) the European Food Safety Authority (EFSA) in accordance with Article 23 of Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (1) in the case of a threat referred to in Article 2 of this Decision where the threat falls under the mandate of the EFSA; and/or

(c) other relevant Union agencies.

2. Where the risk assessment needed is totally or partially outside the mandates of the agencies referred to in paragraph 1, and it is considered necessary for the coordination of the response at Union level, the Commission shall, upon request of the HSC or its own initiative, provide an ad hoc risk assessment.

The Commission shall make the risk assessment available to the national competent authorities promptly through the EWRS. Where the risk assessment is to be made public, the national competent authorities shall receive it prior to its publication.

The risk assessment shall take into account, if available, relevant information provided by other entities, in particular by the WHO in the case of a public health emergency of international concern.

3. The Commission shall ensure that information that may be relevant for the risk assessment is made available to the national competent authorities through the EWRS and to the HSC.

Regulation: Article 11

Type of norm	hard, proc.	Category	detection of threats, counteracting the spread of threats

Range of application	EU		
Keywords	coordination of response	Interventions	Retention; Surrendering to action; An exchange of information

1. Following an alert pursuant to Article 9, on a request from the Commission or a Member State and on the basis of the available information, including the information referred to in Article 9 and the risk assessments referred to in Article 10, Member States shall consult each other within the HSC and in liaison with the Commission with a view to coordinating:
(a) national responses to the serious cross-border threat to health, including where a public health emergency of international concern is declared in accordance with the IHR and falls within Article 2 of this Decision;
(b) risk and crisis communication, to be adapted to Member State needs and circumstances, aimed at providing consistent and coordinated information in the Union to the public and to healthcare professionals.
2. Where a Member State intends to adopt public health measures to combat a serious cross-border threat to health, it shall, before adopting those measures, inform and consult the other Member States and the Commission on the nature, purpose and scope of the measures, unless the need to protect public health is so urgent that the immediate adoption of the measures is necessary.
3. Where a Member State has to adopt, as a matter of urgency, public health measures in response to the appearance or resurgence of a serious cross-border threat to health, it shall, immediately upon adoption, inform the other Member States and the Commission on the nature, purpose and scope of those measures.
4. In the event of a serious cross-border threat to health overwhelming the national response capacities, an affected Member State may also request assistance from other Member States through the Community Civil Protection Mechanism established by Decision 2007/779/EC, Euratom.
5. The Commission shall, by means of implementing acts, adopt the procedures necessary for the uniform implementation of the information exchange, consultation and coordination provided for in paragraphs 1 to 3.
Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 18(2).

Regulation: Article 12

Type of norm	hard, proc.	Category	counteracting the spread of threats
Range of application	EU		
Keywords	recognition of emergency situations	Interventions	An exchange of information

1. The Commission may recognise a situation of public health emergency in relation to:
(a) epidemics of human influenza considered to have pandemic potential, where the Director-General of the WHO has been informed and has not yet adopted a decision

declaring a situation of pandemic influenza in accordance with the applicable rules of the WHO; or

(b) cases other than that referred to in point (a) where the Director-General of the WHO has been informed and has not yet adopted a decision declaring a public health emergency of international concern in accordance with the IHR, and where:

(i) the serious cross-border threat to health in question endangers public health at the Union level;

(ii) medical needs are unmet in relation to that threat, which means that no satisfactory method of diagnosis, prevention or treatment is authorised in the Union or, despite the existence of such a method, the authorisation of a medicinal product would nonetheless be of major therapeutic advantage to those affected.

2. The Commission shall adopt the measure referred to in paragraph 1 by means of implementing acts.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 18(2).

On duly justified imperative grounds of urgency related to the severity of a serious cross-border threat to health or to the rapidity of its spread among Member States, the Commission may recognise situations of public health emergency pursuant to paragraph 1 through immediately applicable implementing acts in accordance with the procedure referred to in Article 18(3).

3. The Commission shall inform the Director-General of the WHO of the adoption of the measures referred to in paragraph 1.

Regulation: Article 13

Type of norm	hard	Category	counteracting the spread of threats
Range of application	EU		
Keywords	Legal effects of recognition	Interventions	Surrendering to action

The recognition of an emergency situation pursuant to Article 12(1) shall have the sole legal effect of enabling point 2 of Article 2 of Regulation (EC) No 507/2006 to apply or, where the recognition specifically concerns epidemics of human influenza considered as having a pandemic potential, of enabling Article 21 of Regulation (EC) No 1234/2008 to apply.

Regulation: Article 14

Type of norm	hard, proc.	Category	counteracting the spread of threats
Range of application	EU		
Keywords	termination of the recognition	Interventions	Surrendering to action

The Commission shall, by means of implementing acts, terminate the recognition referred

to in Article 12(1) as soon as one of the applicable conditions laid down therein is no longer met.
Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 18(2).EN 5.11.2013 Official Journal of the European Union L 293/11
Termination of the recognition, as referred to in the first paragraph, shall not affect the validity of marketing authorisations granted on the basis of Regulation (EC) No 507/2006 to medicinal products referred to in point 2 of Article 2 thereof or granted in accordance with the procedure referred to in Article 21 of Regulation (EC) No 1234/2008.

Regulation: Article 15

Type of norm	proc.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	designation of national authorities and representatives	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. Each Member State shall designate, by 7 March 2014:
(a) the competent authorities responsible within the Member State for epidemiological surveillance as referred to in Article 6;
(b) the competent authority or authorities responsible at national level for notifying alerts and determining the measures required to protect public health, for the purposes of Articles 8, 9 and 10;
(c) one representative and an alternate in the HSC referred to in Article 17.
2. Member States shall notify the Commission and other Member States of the designations referred to in paragraph 1 and of any change thereof. In the event of such change, the Commission shall distribute immediately to the HSC an updated list of such designations.
3. The Commission shall make publicly available the updated list of the authorities designated in accordance with points (a) and (c) of paragraph 1, as well as the updated list of the authorities to which the representatives in the HSC belong.

Regulation: Article 16

Type of norm	proc.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	protection of personal	Interventions	Collecting data; An exchange

data; contact tracing of information

1. In the application of this Decision, personal data shall be processed in accordance with Directive 95/46/EC and Regulation (EC) No 45/2001. In particular, appropriate technical and organisational measures shall be taken to protect such personal data against accidental or illegal destruction, accidental loss, or unauthorised access and against any form of illegal processing.
2. The EWRS shall include a selective messaging functionality allowing personal data to be communicated only to national competent authorities involved in contact tracing measures. That selective messaging functionality shall be designed and operated so as to ensure safe and lawful exchange of personal data.
3. Where competent authorities implementing contact tracing measures communicate personal data necessary for contact tracing purposes through the EWRS pursuant to Article 9(3), they shall use the selective messaging functionality referred to in paragraph 2 of this Article and communicate the data only to the other Member States involved in the contact tracing measures.
4. When circulating the information referred to in paragraph 3, the competent authorities shall refer to the alert communicated previously through the EWRS.
5. Messages containing personal data shall automatically be erased from the selective message functionality 12 months after the date of their posting.
6. Where a competent authority establishes that notification of personal data made by it pursuant to Article 9(3) has subsequently proved to be in breach of Directive 95/46/EC because that notification was unnecessary for the implementation of the contact tracing measures at issue, it shall inform immediately the Member States to which that notification was transmitted.
7. In relation to their responsibilities to notify and rectify personal data through the EWRS, the national competent authorities shall be regarded as controllers within the meaning of point (d) of Article 2 of Directive 95/46/EC.
8. In relation to its responsibilities concerning storage of personal data, the Commission shall be regarded as a controller within the meaning of point (d) of Article 2 of Regulation (EC) No 45/2001.
9. The Commission shall adopt:
(a) guidelines aimed at ensuring that the day-by-day operation of the EWRS complies with Directive 95/46/EC and Regulation (EC) No 45/2001;
(b) a recommendation providing an indicative list of the personal data that may be exchanged for the purpose of the coordination of contact tracing measures.

Regulation: Article 17

Type of norm	proc.		Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU			
Keywords	Health Committee; HSC	Security	Interventions	Collecting data; Information and education; Retention;

			Surrendering to action; Supervision over vectors; An exchange of information

1. A Health Security Committee, composed of representatives of the Member States designated under point (c) of Article 15(1), is hereby established.
2. The HSC shall have the following tasks:
(a) supporting the exchange of information between the Member States and the Commission on the experience acquired with regard to the implementation of this Decision;
(b) coordination in liaison with the Commission of the preparedness and response planning of the Member States in accordance with Article 4;
(c) coordination in liaison with the Commission of the risk and crisis communication and responses of the Member States to serious cross-border threats to health, in accordance with Article 11.
3. The HSC shall be chaired by a representative of the Commission. The HSC shall meet at regular intervals and whenever the situation requires, on a request from the Commission or a Member State.
4. The secretariat shall be provided by the Commission.
5. The HSC shall adopt, by a majority of two thirds of its members, its rules of procedure. Those rules of procedure shall establish working arrangements, in particular with regard to:
(a) the procedures for plenary meetings at high level and working groups;
(b) the participation of experts in plenary meetings, the status of observers, including from third countries;
(c) the arrangements for the HSC to examine the relevance to its mandate of a matter submitted to it and the possibility of recommending referral of that matter to a body competent under a provision of another act of the Union or under the Euratom Treaty; those arrangements shall not affect the obligations of the Member States under Articles 4 and 11 of this Decision.

Regulation: Article 18

Type of norm	proc.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	committee procedure	Interventions	Collecting data; Information and education; Retention; Surrendering to action; Supervision over vectors; An exchange of information

1. The Commission shall be assisted by a committee on serious cross-border threats to health. That Committee shall be a committee within the meaning of Article 3(2) of Regulation (EU) No 182/2011.

2. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.
Where the Committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third subparagraph of Article 5(4) of Regulation (EU) No 182/2011 shall apply.
3. Where reference is made to this paragraph, Article 8 of Regulation (EU) No 182/2011, in conjunction with Article 5 thereof, shall apply.

Regulation: Article 19

Type of norm	proc.	Category	conducting preventive activities
Range of application	EU		
Keywords	reports	Interventions	Collecting data; Information and education; An exchange of information

The Commission shall submit to the European Parliament and the Council by 7 November 2015, and every three years thereafter a report on the implementation of this Decision. The report shall include, in particular, an assessment of the operation of the EWRS and of the epidemiological surveillance network, as well as information on how the mechanisms and structures established under this Decision complement other alert systems at Union level and under the Euratom Treaty to protect public health effectively, while avoiding structural duplications. The Commission may accompany the report with proposals to modify the relevant Union provisions.

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· *Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC*

Regulation: Article 6

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Lawfulness of processing; obtaining data; contact tracing	Interventions	Collecting data; An exchange of information

1.Processing shall be lawful only if and to the extent that at least one of the following

applies: (a) the data subject has given consent to the processing of his or her personal data for one or more specific purposes; (b) processing is necessary for the performance of a contract to which the data subject is party or in order to take steps at the request of the data subject prior to entering into a contract; (c) processing is necessary for compliance with a legal obligation to which the controller is subject; (d) processing is necessary in order to protect the vital interests of the data subject or of another natural person; (e) processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller; (f) processing is necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data, in particular where the data subject is a child. Point (f) of the first subparagraph shall not apply to processing carried out by public authorities in the performance of their tasks. 2.Member States may maintain or introduce more specific provisions to adapt the application of the rules of this Regulation with regard to processing for compliance with points (c) and (e) of paragraph 1 by determining more precisely specific requirements for the processing and other measures to ensure lawful and fair processing including for other specific processing situations as provided for in Chapter IX. 3.The basis for the processing referred to in point (c) and (e) of paragraph 1 shall be laid down by: (a) Union law; or (b) Member State law to which the controller is subject. The purpose of the processing shall be determined in that legal basis or, as regards the processing referred to in point (e) of paragraph 1, shall be necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller. That legal basis may contain specific provisions to adapt the application of rules of this Regulation, inter alia: the general conditions governing the lawfulness of processing by the controller; the types of data which are subject to the processing; the data subjects concerned; the entities to, and the purposes for which, the personal data may be disclosed; the purpose limitation; storage periods; and processing operations and processing procedures, including measures to ensure lawful and fair processing such as those for other specific processing situations as provided for in Chapter IX. The Union or the Member State law shall meet an objective of public interest and be proportionate to the legitimate aim pursued. 4.Where the processing for a purpose other than that for which the personal data have been collected is not based on the data subject's consent or on a Union or Member State law which constitutes a necessary and proportionate measure in a democratic society to safeguard the objectives referred to in Article 23(1), the controller shall, in order to ascertain whether processing for another purpose is compatible with the purpose for which the personal data are initially collected, take into account, inter alia: (a) any link between the purposes for which the personal data have been collected and the purposes of the intended further processing; (b) the context in which the personal data have been collected, in particular regarding the relationship between data subjects and the controller; (c) the nature of the personal data, in particular whether special categories of personal data are processed, pursuant to Article 9, or whether personal data related to criminal convictions and offences are processed, pursuant to Article 10; (d) the possible consequences of the intended further processing for data subjects; (e) the existence of appropriate safeguards, which may include encryption or pseudonymisation.

Regulation: Article 9

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Processing of special categories of personal data; obtaining data; contact tracing	Interventions	Collecting data; An exchange of information

1.Processing of personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation shall be prohibited. 2.Paragraph 1 shall not apply if one of the following applies: (a) the data subject has given explicit consent to the processing of those personal data for one or more specified purposes, except where Union or Member State law provide that the prohibition referred to in paragraph 1 may not be lifted by the data subject; (b) processing is necessary for the purposes of carrying out the obligations and exercising specific rights of the controller or of the data subject in the field of employment and social security and social protection law in so far as it is authorised by Union or Member State law or a collective agreement pursuant to Member State law providing for appropriate safeguards for the fundamental rights and the interests of the data subject; (c) processing is necessary to protect the vital interests of the data subject or of another natural person where the data subject is physically or legally incapable of giving consent; (d) processing is carried out in the course of its legitimate activities with appropriate safeguards by a foundation, association or any other not-for-profit body with a political, philosophical, religious or trade union aim and on condition that the processing relates solely to the members or to former members of the body or to persons who have regular contact with it in connection with its purposes and that the personal data are not disclosed outside that body without the consent of the data subjects; (e) processing relates to personal data which are manifestly made public by the data subject; (f) processing is necessary for the establishment, exercise or defence of legal claims or whenever courts are acting in their judicial capacity; (g) processing is necessary for reasons of substantial public interest, on the basis of Union or Member State law which shall be proportionate to the aim pursued, respect the essence of the right to data protection and provide for suitable and specific measures to safeguard the fundamental rights and the interests of the data subject; (h) processing is necessary for the purposes of preventive or occupational medicine, for the assessment of the working capacity of the employee, medical diagnosis, the provision of health or social care or treatment or the management of health or social care systems and services on the basis of Union or Member State law or pursuant to contract with a health professional and subject to the conditions and safeguards referred to in paragraph 3; (i) processing is necessary for reasons of public interest in the area of public health, such as protecting against serious cross-border threats to health or ensuring high standards of quality and safety of health care and of medicinal products or medical devices, on the basis

of Union or Member State law which provides for suitable and specific measures to safeguard the rights and freedoms of the data subject, in particular professional secrecy; j) processing is necessary for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes in accordance with Article 89(1) based on Union or Member State law which shall be proportionate to the aim pursued, respect the essence of the right to data protection and provide for suitable and specific measures to safeguard the fundamental rights and the interests of the data subject. 3.Personal data referred to in paragraph 1 may be processed for the purposes referred to in point (h) of paragraph 2 when those data are processed by or under the responsibility of a professional subject to the obligation of professional secrecy under Union or Member State law or rules established by national competent bodies or by another person also subject to an obligation of secrecy under Union or Member State law or rules established by national competent bodies. 4.Member States may maintain or introduce further conditions, including limitations, with regard to the processing of genetic data, biometric data or data concerning health.

Regulation: Article 13

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Information to be provided where personal data are collected from the data subject; obtaining data; contact tracing	Interventions	Collecting data; An exchange of information

1.Where personal data relating to a data subject are collected from the data subject, the controller shall, at the time when personal data are obtained, provide the data subject with all of the following information: (a) the identity and the contact details of the controller and, where applicable, of the controller's representative; (b) the contact details of the data protection officer, where applicable; (c) the purposes of the processing for which the personal data are intended as well as the legal basis for the processing; 4.5.2016 L 119/40 Official Journal of the European Union EN
(d) where the processing is based on point (f) of Article 6(1), the legitimate interests pursued by the controller or by a third party; (e) the recipients or categories of recipients of the personal data, if any; (f) where applicable, the fact that the controller intends to transfer personal data to a third country or international organisation and the existence or absence of an adequacy decision by the Commission, or in the case of transfers referred to in Article 46 or 47, or the second subparagraph of Article 49(1), reference to the appropriate or suitable safeguards and the means by which to obtain a copy of them or where they have been made available. 2.In addition to the information referred to in paragraph 1, the controller shall, at the time when personal data are obtained, provide the data subject with the following further information necessary to ensure fair and transparent processing: (a) the period for which the personal data will be stored, or if that

is not possible, the criteria used to determine that period; (b) the existence of the right to request from the controller access to and rectification or erasure of personal data or restriction of processing concerning the data subject or to object to processing as well as the right to data portability; (c) where the processing is based on point (a) of Article 6(1) or point (a) of Article 9(2), the existence of the right to withdraw consent at any time, without affecting the lawfulness of processing based on consent before its withdrawal; (d) the right to lodge a complaint with a supervisory authority; (e) whether the provision of personal data is a statutory or contractual requirement, or a requirement necessary to enter into a contract, as well as whether the data subject is obliged to provide the personal data and of the possible consequences of failure to provide such data; (f) the existence of automated decision-making, including profiling, referred to in Article 22(1) and (4) and, at least in those cases, meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing for the data subject. 3.Where the controller intends to further process the personal data for a purpose other than that for which the personal data were collected, the controller shall provide the data subject prior to that further processing with information on that other purpose and with any relevant further information as referred to in paragraph 2. 4.Paragraphs 1, 2 and 3 shall not apply where and insofar as the data subject already has the information.

Regulation: Article 14

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Information to be provided where personal data have not been obtained from the data subject; obtaining data; contact tracing	Interventions	Collecting data; An exchange of information

1.Where personal data have not been obtained from the data subject, the controller shall provide the data subject with the following information: (a) the identity and the contact details of the controller and, where applicable, of the controller's representative; (b) the contact details of the data protection officer, where applicable; (c) the purposes of the processing for which the personal data are intended as well as the legal basis for the processing; (d) the categories of personal data concerned; (e) the recipients or categories of recipients of the personal data, if any; (f)where applicable, that the controller intends to transfer personal data to a recipient in a third country or international organisation and the existence or absence of an adequacy decision by the Commission, or in the case of transfers referred to in Article 46 or 47, or the second subparagraph of Article 49(1), reference to the appropriate or suitable safeguards and the means to obtain a copy of them or where they have been made available. 2.In addition to the information referred to in paragraph 1, the controller shall provide the data subject with the following information necessary to ensure fair and transparent processing in respect of the data subject: (a) the

period for which the personal data will be stored, or if that is not possible, the criteria used to determine that period; (b) where the processing is based on point (f) of Article 6(1), the legitimate interests pursued by the controller or by a third party; (c) the existence of the right to request from the controller access to and rectification or erasure of personal data or restriction of processing concerning the data subject and to object to processing as well as the right to data portability; (d) where processing is based on point (a) of Article 6(1) or point (a) of Article 9(2), the existence of the right to withdraw consent at any time, without affecting the lawfulness of processing based on consent before its withdrawal; (e) the right to lodge a complaint with a supervisory authority; (f) from which source the personal data originate, and if applicable, whether it came from publicly accessible sources; (g) the existence of automated decision-making, including profiling, referred to in Article 22(1) and (4) and, at least in those cases, meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing for the data subject. 3.The controller shall provide the information referred to in paragraphs 1 and 2: (a) within a reasonable period after obtaining the personal data, but at the latest within one month, having regard to the specific circumstances in which the personal data are processed; (b) if the personal data are to be used for communication with the data subject, at the latest at the time of the first communication to that data subject; or (c) if a disclosure to another recipient is envisaged, at the latest when the personal data are first disclosed. 4.Where the controller intends to further process the personal data for a purpose other than that for which the personal data were obtained, the controller shall provide the data subject prior to that further processing with information on that other purpose and with any relevant further information as referred to in paragraph 2. 5.Paragraphs 1 to 4 shall not apply where and insofar as: (a) the data subject already has the information; (b) the provision of such information proves impossible or would involve a disproportionate effort, in particular for processing for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes, subject to the conditions and safeguards referred to in Article 89(1) or in so far as the obligation referred to in paragraph 1 of this Article is likely to render impossible or seriously impair the achievement of the objectives of that processing. In such cases the controller shall take appropriate measures to protect the data subject's rights and freedoms and legitimate interests, including making the information publicly available; (c) obtaining or disclosure is expressly laid down by Union or Member State law to which the controller is subject and which provides appropriate measures to protect the data subject's legitimate interests; or (d) where the personal data must remain confidential subject to an obligation of professional secrecy regulated by Union or Member State law, including a statutory obligation of secrecy.

Regulation: Article 23

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Restrictions; obtaining	Interventions	Collecting data; An exchange

	data; contact tracing		of information

1.Union or Member State law to which the data controller or processor is subject may restrict by way of a legislative measure the scope of the obligations and rights provided for in Articles 12 to 22 and Article 34, as well as Article 5 in so far as its provisions correspond to the rights and obligations provided for in Articles 12 to 22, when such a restriction respects the essence of the fundamental rights and freedoms and is a necessary and proportionate measure in a democratic society to safeguard: (a) national security; (b) defence; (c) public security; 4.5.2016 L 119/46 Official Journal of the European Union EN (d) the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, including the safeguarding against and the prevention of threats to public security; (e) other important objectives of general public interest of the Union or of a Member State, in particular an important economic or financial interest of the Union or of a Member State, including monetary, budgetary and taxation a matters, public health and social security; (f) the protection of judicial independence and judicial proceedings; (g) the prevention, investigation, detection and prosecution of breaches of ethics for regulated professions; (h) a monitoring, inspection or regulatory function connected, even occasionally, to the exercise of official authority in the cases referred to in points (a) to (e) and (g); (i) the protection of the data subject or the rights and freedoms of others; (j) the enforcement of civil law claims. 2.In particular, any legislative measure referred to in paragraph 1 shall contain specific provisions at least, where relevant, as to: (a) the purposes of the processing or categories of processing; (b) the categories of personal data; (c) the scope of the restrictions introduced; (d) the safeguards to prevent abuse or unlawful access or transfer; (e) the specification of the controller or categories of controllers; (f) the storage periods and the applicable safeguards taking into account the nature, scope and purposes of the processing or categories of processing; (g) the risks to the rights and freedoms of data subjects; and (h) the right of data subjects to be informed about the restriction, unless that may be prejudicial to the purpose of the restriction.

Regulation: Article 36

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Prior consultation	Interventions	

1.The controller shall consult the supervisory authority prior to processing where a data protection impact assessment under Article 35 indicates that the processing would result in a high risk in the absence of measures taken by the controller to mitigate the risk. 2.Where the supervisory authority is of the opinion that the intended processing referred to in paragraph 1 would infringe this Regulation, in particular where the controller has insufficiently identified or mitigated the risk, the supervisory authority shall, within period of up to eight weeks of receipt of the request for consultation, provide written advice to the controller and, where applicable to the processor, and may use any of its powers referred

to in Article 58. That period may be extended by six weeks, taking into account the complexity of the intended processing. The supervisory authority shall inform the controller and, where applicable, the processor, of any such extension within one month of receipt of the request for consultation together with the reasons for the delay. Those periods may be suspended until the supervisory authority has obtained information it has requested for the purposes of the consultation. 3.When consulting the supervisory authority pursuant to paragraph 1, the controller shall provide the supervisory authority with: (a) where applicable, the respective responsibilities of the controller, joint controllers and processors involved in the processing, in particular for processing within a group of undertakings; (b) the purposes and means of the intended processing; (c) the measures and safeguards provided to protect the rights and freedoms of data subjects pursuant to this Regulation; (d) where applicable, the contact details of the data protection officer;
(e) the data protection impact assessment provided for in Article 35; and (f) any other information requested by the supervisory authority. 4.Member States shall consult the supervisory authority during the preparation of a proposal for a legislative measure to be adopted by a national parliament, or of a regulatory measure based on such a legislative measure, which relates to processing. 5.Notwithstanding paragraph 1, Member State law may require controllers to consult with, and obtain prior authorisation from, the supervisory authority in relation to processing by a controller for the performance of a task carried out by the controller in the public interest, including processing in relation to social protection and public health.

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· *Regulation (EU) 2016/399 of the European Parliament and of the Council of 9 March 2016 on a Union Code on the rules governing the movement of persons across borders (Schengen Borders Code)*

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Regulation: Article 2

Type of norm	def.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	definition; borders; threat to public health	Interventions	

'threat to public health' means any disease with epidemic potential as defined by the International Health Regulations of the World Health Organization and other infectious diseases or contagious parasitic diseases if they are the subject of protection provisions applying to nationals of the Member States.

Regulation: Article 6

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Entry conditions for third-country nationals; other prophylactics	Interventions	Collecting data; Retention

1. For intended stays on the territory of the Member States of a duration of no more than 90 days in any 180-day period, which entails considering the 180-day period preceding each day of stay, the entry conditions for third-country nationals shall be the following:
(a) they are in possession of a valid travel document entitling the holder to cross the border satisfying the following criteria:
(i) its validity shall extend at least three months after the intended date of departure from the territory of the Member States. In a justified case of emergency, this obligation may be waived;
(ii) it shall have been issued within the previous 10 years;
(b) they are in possession of a valid visa, if required pursuant to Council Regulation (EC) No 539/2001 (1), except where they hold a valid residence permit or a valid long-stay visa;
(c) they justify the purpose and conditions of the intended stay, and they have sufficient means of subsistence, both for the duration of the intended stay and for the return to their country of origin or transit to a third country into which they are certain to be admitted, or are in a position to acquire such means lawfully;
(d) they are not persons for whom an alert has been issued in the SIS for the purposes of refusing entry;
(e) they are not considered to be a threat to public policy, internal security, public health or the international relations of any of the Member States, in particular where no alert has been issued in Member States' national data bases for the purposes of refusing entry on the same grounds.
2. For the purposes of implementing paragraph 1, the date of entry shall be considered as the first day of stay on the territory of the Member States and the date of exit shall be considered as the last day of stay on the territory of the Member States. Periods of stay authorised under a residence permit or a long-stay visa shall not be taken into account in the calculation of the duration of stay on the territory of the Member States.
3. A non-exhaustive list of supporting documents which the border guard may request from the third-country national in order to verify the fulfilment of the conditions set out in paragraph 1 (c) is included in Annex I.
4. Means of subsistence shall be assessed in accordance with the duration and the purpose of the stay and by reference to average prices in the Member State(s) concerned for board and lodging in budget accommodation, multiplied by the number of days stayed.
Reference amounts set by the Member States shall be notified to the Commission in accordance with Article 39.

The assessment of sufficient means of subsistence may be based on the cash, travellers' cheques and credit cards in the third-country national's possession. Declarations of sponsorship, where such declarations are provided for by national law and letters of guarantee from hosts, as defined by national law, where the third-country national is staying with a host, may also constitute evidence of sufficient means of subsistence.

5. By way of derogation from paragraph 1:

(a) third-country nationals who do not fulfil all the conditions laid down in paragraph 1 but who hold a residence permit or a long-stay visa shall be authorised to enter the territory of the other Member States for transit purposes so that they may reach the territory of the Member State which issued the residence permit or the long-stay visa, unless their names are on the national list of alerts of the Member State whose external borders they are seeking to cross and the alert is accompanied by instructions to refuse entry or transit;

(b) third-country nationals who fulfil the conditions laid down in paragraph 1, except for that laid down in point (b), and who present themselves at the border may be authorised to enter the territory of the Member States, if a visa is issued at the border in accordance with Articles 35 and 36 of Regulation (EC) No 810/2009 of the European Parliament and of the Council (1).

Member States shall compile statistics on visas issued at the border in accordance with Article 46 of Regulation (EC) No 810/2009 and Annex XII thereto.

If it is not possible to affix a visa in the document, it shall, exceptionally, be affixed on a separate sheet inserted in the document. In such a case, the uniform format for forms for affixing the visa, laid down by Council Regulation (EC) No 333/2002 (2), shall be used;

(c) third-country nationals who do not fulfil one or more of the conditions laid down in paragraph 1 may be authorised by a Member State to enter its territory on humanitarian grounds, on grounds of national interest or because of international obligations. Where the third-country national concerned is the subject of an alert as referred to in paragraph 1(d), the Member State authorising him or her to enter its territory shall inform the other Member States accordingly.

Regulation: Article 8

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Border checks on persons; other prophylactics; passengers; luggage; conveyance	Interventions	Collecting data; Retention

1. Cross-border movement at external borders shall be subject to checks by border guards. Checks shall be carried out in accordance with this chapter.

The checks may also cover the means of transport and objects in the possession of the persons crossing the border. The law of the Member State concerned shall apply to any

searches which are carried out.

2. All persons shall undergo a minimum check in order to establish their identities on the basis of the production or presentation of their travel documents. Such a minimum check shall consist of a rapid and straightforward verification, where appropriate by using technical devices and by consulting, in the relevant databases, information exclusively on stolen, misappropriated, lost and invalidated documents, of the validity of the document authorising the legitimate holder to cross the border and of the presence of signs of falsification or counterfeiting.

The minimum check referred to in the first subparagraph shall be the rule for persons enjoying the right of free movement under Union law.

However, on a non-systematic basis, when carrying out minimum checks on persons enjoying the right of free movement under Union law, border guards may consult national and European databases in order to ensure that such persons do not represent a genuine, present and sufficiently serious threat to the internal security, public policy, international relations of the Member States or a threat to the public health.

The consequences of such consultations shall not jeopardise the right of entry of persons enjoying the right of free movement under Union law into the territory of the Member State concerned as laid down in Directive 2004/38/EC.

3. On entry and exit, third-country nationals shall be subject to thorough checks as follows:

(a) thorough checks on entry shall comprise verification of the conditions governing entry laid down in Article 6(1) and, where applicable, of documents authorising residence and the pursuit of a professional activity. This shall include a detailed examination covering the following aspects:

(i) verification that the third-country national is in possession of a document which is valid for crossing the border and which has not expired, and that the document is accompanied, where applicable, by the requisite visa or residence permit;

(ii) thorough scrutiny of the travel document for signs of falsification or counterfeiting;

(iii) examination of the entry and exit stamps on the travel document of the third-country national concerned, in order to verify, by comparing the dates of entry and exit, that the person has not already exceeded the maximum duration of authorised stay in the territory of the Member States;

(iv) verification regarding the point of departure and the destination of the third-country national concerned and the purpose of the intended stay, checking, if necessary, the corresponding supporting documents;

(v) verification that the third-country national concerned has sufficient means of subsistence for the duration and purpose of the intended stay, for his or her return to the country of origin or transit to a third country into which he or she is certain to be admitted, or that he or she is in a position to acquire such means lawfully;

(vi) verification that the third-country national concerned, his or her means of transport and the objects he or she is transporting are not likely to jeopardise the public policy, internal security, public health or international relations of any of the Member States. Such verification shall include direct consultation of the data and alerts on persons and, where necessary, objects included in the SIS and in national data files and the action to be performed, if any, as a result of an alert;

(b) if the third country national holds a visa referred to in Article 6(1)(b), the thorough checks on entry shall also comprise verification of the identity of the holder of the visa and

of the authenticity of the visa, by consulting the Visa Information System (VIS) in accordance with Article 18 of Regulation (EC) No 767/2008;

(c) by way of derogation, the VIS may be consulted using the number of the visa sticker in all cases and, on a random basis, the number of the visa sticker in combination with the verification of fingerprints where:

(i) traffic of such intensity arises that the waiting time at the border crossing point becomes excessive;

(ii) all resources have already been exhausted as regards staff, facilities and organisation; and

(iii) on the basis of an assessment there is no risk related to internal security and illegal immigration.

However, in all cases where there is doubt as to the identity of the holder of the visa and/or the authenticity of the visa, the VIS shall be consulted systematically using the number of the visa sticker in combination with the verification of fingerprints.

This derogation may be applied only at the border crossing point concerned for as long as the conditions referred to in points (i), (ii) and (iii) are met;

(d) the decision to consult the VIS in accordance with point (c) shall be taken by the border guard in command at the border crossing point or at a higher level.

The Member State concerned shall immediately notify the other Member States and the Commission of any such decision;

(e) each Member State shall transmit once a year a report on the application of point (c) to the European Parliament and the Commission, which shall include the number of third-country nationals who were checked in the VIS using the number of the visa sticker only and the length of the waiting time referred to in point (c)(i);

(f) points (c) and (d) shall apply for a maximum period of three years, beginning three years after the VIS has started operations. The Commission shall, before the end of the second year of application of points (c) and (d), transmit to the European Parliament and to the Council an evaluation of their implementation. On the basis of that evaluation, the European Parliament or the Council may invite the Commission to propose appropriate amendments to this Regulation;

(g) thorough checks on exit shall comprise:

(i) verification that the third-country national is in possession of a document valid for crossing the border;

(ii) verification of the travel document for signs of falsification or counterfeiting;

(iii) whenever possible, verification that the third-country national is not considered to be a threat to public policy, internal security or the international relations of any of the Member States;

(h) in addition to the checks referred to in point (g) thorough checks on exit may also comprise:

(i) verification that the person is in possession of a valid visa, if required pursuant to Regulation (EC) No 539/2001, except where he or she holds a valid residence permit; such verification may comprise consultation of the VIS in accordance with Article 18 of Regulation (EC) No 767/2008;

(ii) verification that the person did not exceed the maximum duration of authorised stay in the territory of the Member States;

(iii) consultation of alerts on persons and objects included in the SIS and reports in national data files;

(i) for the purpose of identification of any person who may not fulfil, or who may no longer fulfil, the conditions for entry, stay or residence on the territory of the Member States, the VIS may be consulted in accordance with Article 20 of Regulation (EC) No 767/2008.

4. Where facilities exist and if requested by the third-country national, such thorough checks shall be carried out in a private area.

5. Without prejudice to the second subparagraph, third-country nationals subject to a thorough second line check shall be given written information in a language which they understand or may reasonably be presumed to understand, or in another effective way, on the purpose of, and the procedure for, such a check.

This information shall be available in all the official languages of the Union and in the language(s) of the country or countries bordering the Member State concerned and shall indicate that the third-country national may request the name or service identification number of the border guards carrying out the thorough second line check, the name of the border crossing point and the date on which the border was crossed.

6. Checks on a person enjoying the right of free movement under Union law shall be carried out in accordance with Directive 2004/38/EC.

7. Detailed rules governing the information to be registered are laid down in Annex II.

8. Where Article 5(2)(a) or (b) applies, Member States may also provide derogations from the rules set out in this Article.

Regulation: Article 14

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Refusal of entry	Interventions	Collecting data; Retention

1. A third-country national who does not fulfil all the entry conditions laid down in Article 6(1) and does not belong to the categories of persons referred to in Article 6(5) shall be refused entry to the territories of the Member States. This shall be without prejudice to the application of special provisions concerning the right of asylum and to international protection or the issue of long-stay visas.

2. Entry may only be refused by a substantiated decision stating the precise reasons for the refusal. The decision shall be taken by an authority empowered by national law. It shall take effect immediately.

The substantiated decision stating the precise reasons for the refusal shall be given by means of a standard form, as set out in Annex V, Part B, filled in by the authority empowered by national law to refuse entry. The completed standard form shall be handed to the third-country national concerned, who shall acknowledge receipt of the decision to refuse entry by means of that form.

3. Persons refused entry shall have the right to appeal. Appeals shall be conducted in accordance with national law. A written indication of contact points able to provide information on representatives competent to act on behalf of the third-country national in

accordance with national law shall also be given to the third-country national.
Lodging such an appeal shall not have suspensive effect on a decision to refuse entry.
Without prejudice to any compensation granted in accordance with national law, the third-country national concerned shall, where the appeal concludes that the decision to refuse entry was ill-founded, be entitled to correction of the cancelled entry stamp, and any other cancellations or additions which have been made, by the Member State which refused entry.
4. The border guards shall ensure that a third-country national refused entry does not enter the territory of the Member State concerned.
5. Member States shall collect statistics on the number of persons refused entry, the grounds for refusal, the nationality of the persons who were refused entry and the type of border (land, air or sea) at which they were refused entry and submit them yearly to the Commission (Eurostat) in accordance with Regulation (EC) No 862/2007 of the European Parliament and of the Council (1).
6. Detailed rules governing refusal of entry are given in Part A of Annex V.

Regulation: Article 17

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Cooperation between Member States	Interventions	An exchange of information

1. The Member States shall assist each other and shall maintain close and constant cooperation with a view to the effective implementation of border control, in accordance with Articles 7 to 16. They shall exchange all relevant information.
2. Operational cooperation between Member States in the field of management of external borders shall be coordinated by the Agency.
3. Without prejudice to the competences of the Agency, Member States may continue operational cooperation with other Member States and/or third countries at external borders, including the exchange of liaison officers, where such cooperation complements the action of the Agency.
Member States shall refrain from any activity which could jeopardise the functioning of the Agency or the attainment of its objectives.
Member States shall report to the Agency on the operational cooperation referred to in the first subparagraph.
4. Member States shall provide for training on the rules for border control and on fundamental rights. In that regard, account shall be taken of the common training standards as established and further developed by the Agency.

Regulation: Article 21

Type of norm	hard	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Measures at external borders and support by the Agency serious deficiencies relating to external border control	Interventions	Surrendering to action

1. Where serious deficiencies in the carrying out of external border control are identified in an evaluation report drawn up pursuant to Article 14 of Regulation (EU) No 1053/2013, and with a view to ensuring compliance with the recommendations referred to in Article 15 of that Regulation, the Commission may recommend, by means of an implementing act, that the evaluated Member State take certain specific measures, which may include one or both of the following:
(a) initiating the deployment of European border guard teams in accordance with Regulation (EC) No 2007/2004;
(b) submitting its strategic plans, based on a risk assessment, including information on the deployment of personnel and equipment, to the Agency for its opinion thereon.
That implementing act shall be adopted in accordance with the examination procedure referred to in Article 38(2).
2. The Commission shall inform the committee established pursuant to Article 38(1) on a regular basis of the progress in the implementation of the measures referred to in paragraph 1 of this Article and on its impact on the deficiencies identified.
It shall also inform the European Parliament and the Council.
3. Where an evaluation report as referred to in paragraph 1 has concluded that the evaluated Member State is seriously neglecting its obligations and must therefore report on the implementation of the relevant action plan within three months in accordance with Article 16(4) of Regulation (EU) No 1053/2013, and where, following that three-month period, the Commission finds that the situation persists, it may trigger the application of the procedure provided for in Article 29 of this Regulation where all the conditions for doing so are fulfilled.

Regulation: Article 22

Type of norm	hard	Category	
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Serious deficiencies relating to external border control; internal borders	Interventions	

Internal borders may be crossed at any point without a border check on persons, irrespective of their nationality, being carried out.

Regulation: Article 25

Type of norm	hard	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Temporary reintroduction of border control at internal borders; General framework for the temporary reintroduction of border control at internal borders	Interventions	Surrendering to action

1. Where, in the area without internal border control, there is a serious threat to public policy or internal security in a Member State, that Member State may exceptionally reintroduce border control at all or specific parts of its internal borders for a limited period of up to 30 days or for the foreseeable duration of the serious threat if its duration exceeds 30 days. The scope and duration of the temporary reintroduction of border control at internal borders shall not exceed what is strictly necessary to respond to the serious threat.

2. Border control at internal borders shall only be reintroduced as a last resort, and in accordance with Articles 27, 28 and 29. The criteria referred to, respectively, in Articles 26 and 30 shall be taken into account in each case where a decision on the reintroduction of border control at internal borders is considered pursuant, respectively, to Article 27, 28 or 29.

3. If the serious threat to public policy or internal security in the Member State concerned persists beyond the period provided for in paragraph 1 of this Article, that Member State may prolong border control at its internal borders, taking account of the criteria referred to in Article 26 and in accordance with Article 27, on the same grounds as those referred to in paragraph 1 of this Article and, taking into account any new elements, for renewable periods of up to 30 days.

4. The total period during which border control is reintroduced at internal borders, including any prolongation provided for under paragraph 3 of this Article, shall not exceed six months. Where there are exceptional circumstances as referred to in Article 29, that total period may be extended to a maximum length of two years, in accordance with paragraph 1 of that Article.

Regulation: Article 26

Type of norm	hard	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Criteria for the temporary reintroduction of border control at internal borders	Interventions	Surrendering to action

Where a Member State decides, as a last resort, on the temporary reintroduction of border control at one or more of its internal borders or at parts thereof, or decides to prolong such reintroduction, in accordance with Article 25 or Article 28(1), it shall assess the extent to which such a measure is likely to adequately remedy the threat to public policy or internal security, and shall assess the proportionality of the measure in relation to that threat. In making such an assessment, the Member State shall, in particular, take the following into account:
(a) the likely impact of any threats to its public policy or internal security, including following terrorist incidents or threats and including those posed by organised crime;
(b) the likely impact of such a measure on free movement of persons within the area without internal border control.

Regulation: Article 27

Type of norm	proc.	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Procedure for the temporary reintroduction of border control at internal borders	Interventions	Surrendering to action

1. Where a Member State plans to reintroduce border control at internal borders under Article 25, it shall notify the other Member States and the Commission at the latest four weeks before the planned reintroduction, or within a shorter period where the circumstances giving rise to the need to reintroduce border control at internal borders become known less than four weeks before the planned reintroduction. To that end, the Member State shall supply the following information:
(a) the reasons for the proposed reintroduction, including all relevant data detailing the events that constitute a serious threat to its public policy or internal security;
(b) the scope of the proposed reintroduction, specifying at which part or parts of the internal borders border control is to be reintroduced;
(c) the names of the authorised crossing-points;

(d) the date and duration of the planned reintroduction;
(e) where appropriate, the measures to be taken by the other Member States.
A notification under the first subparagraph may also be submitted jointly by two or more Member States.
If necessary, the Commission may request additional information from the Member State(s) concerned.
2. The information referred to in paragraph 1 shall be submitted to the European Parliament and to the Council at the same time as it is notified to the other Member States and to the Commission pursuant to that paragraph.
3. Member States making a notification under paragraph 1 may, where necessary and in accordance with national law, decide to classify parts of the information.
Such classification shall not preclude information from being made available by the Commission to the European Parliament. The transmission and handling of information and documents transmitted to the European Parliament under this Article shall comply with rules concerning the forwarding and handling of classified information which are applicable between the European Parliament and the Commission.
4. Following notification by a Member State under paragraph 1 and with a view to consultation provided for in paragraph 5, the Commission or any other Member State may, without prejudice to Article 72 TFEU, issue an opinion.
If, based on the information contained in the notification or on any additional information it has received, the Commission has concerns as regards the necessity or proportionality of the planned reintroduction of border control at internal borders, or if it considers that a consultation on some aspect of the notification would be appropriate, it shall issue an opinion to that effect.
5. The information referred to in paragraph 1 and any Commission or Member State opinion under paragraph 4 shall be the subject of consultation, including, where appropriate, joint meetings between the Member State planning to reintroduce border control at internal borders, the other Member States, especially those directly affected by such measures, and the Commission, with a view to organising, where appropriate, mutual cooperation between the Member States and to examining the proportionality of the measures to the events giving rise to the reintroduction of border control and the threat to public policy or internal security.
6. The consultation referred to in paragraph 5 shall take place at least ten days before the date planned for the reintroduction of border control.

Regulation: Article 28

Type of norm	proc.	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Specific procedure for cases requiring immediate action; internal borders	Interventions	Surrendering to action

1. Where a serious threat to public policy or internal security in a Member State requires immediate action to be taken, the Member State concerned may, on an exceptional basis, immediately reintroduce border control at internal borders, for a limited period of up to ten days.
2. Where a Member State reintroduces border control at internal borders, it shall at the same time notify the other Member States and the Commission accordingly, and shall supply the information referred to in Article 27(1), including the reasons that justify the use of the procedure set out in this Article. The Commission may consult the other Member States immediately upon receipt of the notification.
3. If the serious threat to public policy or internal security persists beyond the period provided for in paragraph 1 of this Article, the Member State may decide to prolong the border control at internal borders for renewable periods of up to 20 days. In doing so, the Member State concerned shall take into account the criteria referred to in Article 26, including an updated assessment of the necessity and the proportionality of the measure, and shall take into account any new elements.
In the event of such a prolongation, the provisions of Article 27(4) and (5) shall apply mutatis mutandis, and the consultation shall take place without delay after the decision to prolong has been notified to the Commission and to the Member States.
4. Without prejudice to Article 25(4), the total period during which border control is reintroduced at internal borders, on the basis of the initial period under paragraph 1 of this Article and any prolongations under paragraph 3 of this Article, shall not exceed two months.
5. The Commission shall inform the European Parliament without delay of notifications made under this Article.

Regulation: Article 29

Type of norm	proc.	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Specific procedure where exceptional circumstances put the overall functioning of the area without internal border control at risk	Interventions	Surrendering to action

1. In exceptional circumstances where the overall functioning of the area without internal border control is put at risk as a result of persistent serious deficiencies relating to external border control as referred to in Article 21, and insofar as
those circumstances constitute a serious threat to public policy or internal security within the area without internal border control or within parts thereof, border control at internal borders may be reintroduced in accordance with paragraph 2 of this Article for a period of up to six months. That period may be prolonged, no more than three times, for a further period of up to six months if the exceptional circumstances persist.

2. The Council may, as a last resort and as a measure to protect the common interests within the area without internal border control, where all other measures, in particular those referred to in Article 21(1), are ineffective in mitigating the serious threat identified, recommend that one or more Member States decide to reintroduce border control at all or at specific parts of their internal borders. The Council's recommendation shall be based on a proposal from the Commission. The Member States may request the Commission to submit such a proposal to the Council for a recommendation.

In its recommendation, the Council shall at least indicate the information referred to in Article 27(1)(a) to (e).

The Council may recommend a prolongation in accordance with the conditions and procedure set out in this Article.

Before a Member State reintroduces border control at all or at specific parts of its internal borders under this paragraph, it shall notify the other Member States, the European Parliament and the Commission accordingly.

3. In the event that the recommendation referred to in paragraph 2 is not implemented by a Member State, that Member State shall without delay inform the Commission in writing of its reasons.

In such a case, the Commission shall present a report to the European Parliament and to the Council assessing the reasons provided by the Member State concerned and the consequences for protecting the common interests of the area without internal border control.

4. On duly justified grounds of urgency relating to situations where the circumstances giving rise to the need to prolong border control at internal borders in accordance with paragraph 2 become known less than 10 days before the end of the preceding reintroduction period, the Commission may adopt any necessary recommendations by means of immediately applicable implementing acts in accordance with the procedure referred to in Article 38(3). Within 14 days of the adoption of such recommendations, the Commission shall submit to the Council a proposal for a recommendation in accordance with paragraph 2 of this Article.

5. This Article shall be without prejudice to measures that may be adopted by the Member States in the event of a serious threat to public policy or internal security under Articles 25, 27 and 28.

Regulation: Article 30

Type of norm	hard	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Criteria for the temporary reintroduction of border control at internal borders where exceptional circumstances put the overall functioning of the	Interventions	Surrendering to action

area without internal border control at risk

1. Where, as a last resort, the Council recommends in accordance with Article 29(2) the temporary reintroduction of border control at one or more internal borders or at parts thereof, it shall assess the extent to which such a measure is likely to adequately remedy the threat to public policy or internal security within the area without internal border control, and shall assess the proportionality of the measure in relation to that threat. That assessment shall be based on the detailed information submitted by the Member State(s) concerned and by the Commission and any other relevant information, including any information obtained pursuant to paragraph 2 of this Article. In making such an assessment, the following considerations shall in particular be taken into account:
(a) the availability of technical or financial support measures which could be or have been resorted to at national or Union level, or both, including assistance by Union bodies, offices or agencies, such as the Agency, the European Asylum Support Office, established by Regulation (EU) No 439/2010 of the European Parliament and of the Council (1) or the European Police Office ('Europol'), established by Decision 2009/371/JHA, and the extent to which such measures are likely to adequately remedy the threat to public policy or internal security within the area without internal border control;
(b) the current and likely future impact of any serious deficiencies relating to external border control identified in the context of the evaluations carried out pursuant to Regulation (EU) No 1053/2013 and the extent to which such serious deficiencies constitute a serious threat to public policy or internal security within the area without internal border control;
(c) the likely impact of the reintroduction of border control on the free movement of persons within the area without internal border control.
2. Before adopting a proposal for a Council recommendation, in accordance with Article 29(2), the Commission may:
(a) request Member States, the Agency, Europol or other Union bodies, offices or agencies to provide it with further information;
(b) carry out on-site visits, with the support of experts from Member States and of the Agency, Europol or any other relevant Union body, office or agency, in order to obtain or verify information relevant for that recommendation.

Regulation: Article 31

Type of norm	hard	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Informing the European Parliament and the Council	Interventions	An exchange of information

The Commission and the Member State(s) concerned shall inform the European Parliament and the Council as soon as possible of any reasons which might trigger the application of

Article 21 and Articles 25 to 30.

Regulation: Article 32

Type of norm	hard	Category	detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Provisions to be applied where border control is reintroduced at internal borders; other prophylactics	Interventions	

Where border control at internal borders is reintroduced, the relevant provisions of Title II shall apply mutatis mutandis.

Regulation: ANNEX II

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Registration of information	Interventions	Collecting data

At all border crossing points, all service information and any other particularly important information shall be registered manually or electronically. The information to be registered shall include in particular:
(a) the names of the border guard responsible locally for border checks and of the other officers in each team;
(b) relaxation of checks on persons applied in accordance with Article 9;
(c) the issuing, at the border, of documents in place of passports and of visas;
(d) persons apprehended and complaints (criminal offences and administrative breaches);
(e) persons refused entry in accordance with Article 14 (grounds for refusal and nationalities);
(f) the security codes of entry and exit stamps, the identity of border guards to whom a given stamp is assigned at any given time or shift and the information relating to lost and stolen stamps;
(g) complaints from persons subject to checks;
(h) other particularly important police or judicial measures;
(i) particular occurrences.

Regulation: ANNEX V

Type of norm	proc.	Category	counteracting the spread of threats
Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein		
Keywords	Procedures for refusing entry at the border	Interventions	Retention

1. When refusing entry, the competent border guard shall:
(a) fill in the standard form for refusing entry, as shown in Part B. The third-country national concerned shall sign the form and shall be given a copy of the signed form. Where the third-country national refuses to sign, the border guard shall indicate this refusal in the form under the section 'comments';
(b) affix an entry stamp on the passport, cancelled by a cross in indelible black ink, and write opposite it on the right- hand side, also in indelible ink, the letter(s) corresponding to the reason(s) for refusing entry, the list of which is given on the abovementioned standard form for refusing entry;
(c) annul or revoke the visas, as appropriate, in accordance with the conditions laid down in Article 34 of Regulation (EC) No 810/2009;
(d) record every refusal of entry in a register or on a list stating the identity and nationality of the third-country national concerned, the references of the document authorising the third-country national to cross the border and the reason for, and date of, refusal of entry.
2. If a third-country national who has been refused entry is brought to the border by a carrier, the authority responsible locally shall:
(a) order the carrier to take charge of the third-country national and transport him or her without delay to the third country from which he or she was brought, to the third country which issued the document authorising him or her to cross the border, or to any other third country where he or she is guaranteed admittance, or to find means of onward transportation in accordance with Article 26 of the Schengen Convention and Council Directive 2001/51/EC (1);
(b) pending onward transportation, take appropriate measures, in compliance with national law and having regard to local circumstances, to prevent third-country nationals who have been refused entry from entering illegally.
3. If there are grounds both for refusing entry to a third-country national and arresting him or her, the border guard shall contact the authorities responsible to decide on the action to be taken in accordance with national law.

Regulation: ANNEX VI

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats

Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein
Keywords	Specific rules for the various types of border and the various means of transport used for crossing the Member States' external borders Interventions

1. Land borders

1.1. Checks on road traffic

1.1.1. To ensure effective checks on persons, while ensuring the safety and smooth flow of road traffic, movements at border crossing points shall be regulated in an appropriate manner. Where necessary, Member States may conclude bilateral agreements to channel and block traffic. They shall inform the Commission thereof pursuant to Article 42.

1.1.2. At land borders, Member States may, where they deem appropriate and if circumstances allow, install or operate separate lanes at certain border crossing points, in accordance with Article 10.

Separate lanes may be dispensed with at any time by the Member States' competent authorities, in exceptional circumstances and where traffic and infrastructure conditions so require.

Member States may cooperate with neighbouring countries with a view to the installation of separate lanes at external border crossing points.

1.1.3. As a general rule, persons travelling in vehicles may remain inside them during checks. However, if circumstances so require, persons may be requested to alight from their vehicles. Thorough checks will be carried out, if local circumstances allow, in areas designated for that purpose. In the interests of staff safety, checks will be carried out, where possible, by two border guards.

1.1.4. Shared border crossing points

1.1.4.1. Member States may conclude or maintain bilateral agreements with neighbouring third countries concerning the establishment of shared border crossing points, at which Member State border guards and third-country border guards carry out exit and entry checks one after another in accordance with their national law on the territory of the other party. Shared border crossing points may be located either on the territory of a Member State territory or on the territory of a third country.

1.1.4.2. Shared border crossing points located on Member State territory: bilateral agreements establishing shared border crossing points located on Member State territory shall contain an authorisation for third-country border guards to exercise their tasks in the Member State, respecting the following principles:

(a) International protection: a third-country national asking for international protection on Member State territory shall be given access to relevant Member State procedures in accordance with the Union asylum acquis.

(b) Arrest of a person or seizure of property: if third-country border guards become aware of facts justifying the arrest or placing under protection of a person or seizure of property, they shall inform Member State authorities of those facts and Member State authorities shall ensure an appropriate follow-up in accordance with national, Union and international

law, independently of the nationality of the concerned person.

(c) Persons enjoying the right of free movement under Union law entering Union territory: third-country border guards shall not prevent persons enjoying the right of free movement under Union law from entering Union territory. If there are reasons justifying refusal of exit from the third country concerned, third-country border guards shall inform Member State authorities of those reasons and Member State authorities shall ensure an appropriate follow-up in accordance with national, Union and international law.

1.1.4.3. Shared border crossing points located on third-country territory: bilateral agreements establishing shared border crossing points located on third-country territory shall contain an authorisation for Member State border guards to perform their tasks in the third country. For the purpose of this Regulation, any check carried out by Member State border guards in a shared border crossing point located on the territory of a third country shall be deemed to be carried out on the territory of the Member State concerned. Member State border guards shall exercise their tasks in accordance with this Regulation and respecting the following principles:

(a) International protection: a third-country national who has passed exit control by third-country border guards and subsequently asks Member State border guards present in the third country for international protection, shall be given access to relevant Member State procedures in accordance with Union asylum acquis. Third- country authorities shall accept the transfer of the person concerned into Member State territory.

(b) Arrest of a person or seizure of property: if Member State border guards become aware of facts justifying the arrest or placing under protection of a person or seizure of property, they shall act in accordance with national, Union and international law. Third-country authorities shall accept a transfer of the person or object concerned into Member State territory.

(c) Access to IT systems: Member State border guards shall be able to use information systems processing personal data in accordance with Article 8. Member States shall be allowed to establish the technical and organisational security measures required by Union law to protect personal data against accidental or unlawful destruction or accidental loss, alteration, unauthorised disclosure or access, including access by third-country authorities.

1.1.4.4. Before concluding or amending any bilateral agreement on shared border crossing points with a neighbouring third country, the Member State concerned shall consult the Commission as to the compatibility of the agreement with Union law. Pre-existing bilateral agreements shall be notified to the Commission by 20 January 2014.

If the Commission considers the agreement to be incompatible with Union law, it shall notify the Member State concerned. The Member State shall take all appropriate steps to amend the agreement within a reasonable period in such a way as to eliminate the incompatibilities established.

1.2. Checks on rail traffic

1.2.1. Checks shall be carried out both on train passengers and on railway staff on trains crossing external borders, including those on goods trains or empty trains. Member States may conclude bilateral or multilateral agreements on how to conduct those checks respecting the principles set out in point 1.1.4. Those checks shall be carried out in one of the following ways:

— in the first station of arrival or last station of departure on the territory of a Member State;

— on board the train, during transit between the last station of departure in a third

country and the first station of arrival on the territory of a Member State or vice versa;
— in the last station of departure or the first station of arrival on the territory of a third country.
1.2.2. In addition, in order to facilitate rail traffic flows of high-speed passenger trains, the Member States on the itinerary of these trains from third countries may also decide, by common agreement with third countries concerned respecting the principles set out in point 1.1.4., to carry out entry checks on persons on trains from third countries in either one of the following ways:
— in the stations in a third country where persons board the train;
— in the stations where persons disembark within the territory of the Member States;
— on board the train during transit between stations on the territory of a third country and stations on the territory of the Member States, provided that the persons stay on board the train.
1.2.3. With respect to high-speed trains from third countries making several stops in the territory of the Member States, if the rail transport carrier is in a position to board passengers exclusively for the remaining part of the journey within the territory of the Member States, such passengers shall be subject to entry checks either on the train or at the station of destination except where checks have been carried out pursuant to points 1.2.1 or 1.2.2 first indent.
Persons who wish to take the train exclusively for the remaining part of the journey within the territory of the Member States shall receive clear notification prior to the train's departure that they will be subject to entry checks during the journey or at the station of destination.
1.2.4. When travelling in the opposite direction, the persons on board the train shall be subject to exit checks under similar arrangements.
1.2.5. The border guard may order the cavities of carriages to be inspected if necessary with the assistance of the train inspector, to ensure that persons or objects subject to border checks are not concealed in them.
1.2.6. Where there are reasons to believe that persons who have been reported or are suspected of having committed an offence, or third-country nationals intending to enter illegally, are hiding on a train, the border guard, if he or she cannot act in accordance with his national provisions, shall notify the Member States towards or within whose territory the train is moving.

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· *Regulation (EU) 2017/2225 of the European Parliament and of the Council of 30 November 2017 amending Regulation (EU) 2016/399 as regards the use of the Entry/Exit System*

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Regulation: Article 8a

Type of norm	proc.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats

Range of application	EU States, except for: Bulgaria, Croatia, Cyprus, Ireland, Romania and the United Kingdom and non-EU States: Iceland, Norway, Switzerland and Liechtenstein.		
Keywords	Use of self-service systems and e-gates for the border crossing by persons whose border crossing is subject to a registration in the EES	Interventions	Retention

1. Persons whose border crossing is subject to a registration in the EES in accordance with Article 6a may be permitted to use a self-service system for the carrying out of their border checks, where all of the following conditions are fulfilled:
(a) the travel document contains an electronic storage medium (chip) and the authenticity and integrity of the chip data are confirmed using the complete valid certificate chain;
(b) the travel document contains a facial image recorded in the electronic storage medium (chip) which can be technically accessed by the self-service system so as to verify the identity of the holder of the travel document, by comparing that facial image with his or her live facial image; and
(c) the person is already enrolled or pre-enrolled in the EES.
2. Where the conditions laid down in paragraph 1 of this Article are met, the border checks on entry provided for in Article 8(2) and Article 8(3)(a) and (b) and the border checks on exit provided for in Article 8(2) and Article 8(3)(g) and (h) may be carried out through a self-service system. When carried out through an automated border control system, the border checks on exit shall include the checks provided for in Article 8(3)(h). Where a person is granted access to a national facilitation programme established by a Member State pursuant to Article 8d, the border checks carried out through a self-service system on entry may omit the examination of the aspects referred to in Article 8(3)(a)(iv) and (v) when that person crosses the external borders of that Member State or the external borders of a Member State which has concluded an agreement with the Member State which granted the access as referred to under Article 8d(9).3. On entry and exit, the results of the border checks carried out through the self-service system shall be made available to a border guard. That border guard shall monitor the results of border checks and, taking into account those results, authorise the entry or exit or, otherwise, refer the person to a border guard who shall proceed with further checks.
4. The person in question shall be referred to a border guard pursuant to paragraph 3 in any of the following situations:
(a) where one or more of the conditions listed under paragraph 1 are not fulfilled;
(b) where the checks on entry or exit provided for in paragraph 2 reveal that one or several of the entry or exit conditions are not met;
(c) where the results of the checks on entry or exit provided for in paragraph 2 put into question the identity of the person or when they reveal that the person is considered to be a threat to the internal security, public policy or international relations of any Member State or to public health;
(d) in the case of doubt;
(e) where no e-gates are available.
5. In addition to the situations referred to in paragraph 4, the border guard supervising the border crossing may decide, based on other reasons, to refer the person using the self-

service system to a border guard.
6. Persons whose border crossing is subject to a registration in the EES in accordance with Article 6a(1) and who used a self-service system for the carrying out of their border checks may be authorised to use an e-gate. Where an e-gate is used, the corresponding registration of the entry/exit record and the linking of that record to the corresponding individual file pursuant to Article 14 of Regulation (EU) 2017/2226 shall be carried out when crossing the border through the e-gate. Where the e-gate and the self-service system are physically separated, a verification of the identity of the user shall take place at the e-gate in order to verify that the person using the e-gate corresponds to the person who used the self-service system. The verification shall be carried out by using at least one biometric identifier.
7. Where the conditions listed in point (a) or (b) of paragraph 1 of this Article, or in both, are not fulfilled, part of the border checks on entry pursuant to Article 8(3)(a) and (b) and part of the border checks on exit pursuant to Article 8(3)(g) and (h) may be carried out through a self-service system. The border guard may perform only those verifications pursuant to Article 8(3)(a) and (b) and Article 8(3)(g) and (h) that could not be carried out through the self-service system. In addition, the border guard shall verify that the travel document used at the self-service system corresponds to the one held by the person standing before that border guard.
8. Self-service systems and e-gates shall be operated under the supervision of a border guard who shall be in charge of detecting any inappropriate, fraudulent or abnormal use of the self-service system, e-gate, or both
9. This Article is without prejudice to the possibility for Member States to allow for the use of self-service systems, e-gates, or both, for border crossings by Union citizens, by citizens of a European Free Trade Association State of the European Economic Area, by citizens of Switzerland and by third-country nationals whose border crossing is not subject to a registration in the EES.

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· *Commission Implementing Decision (EU) 2017/253 of 13 February 2017 laying down procedures for the notification of alerts as part of the early warning and response system established in relation to serious cross-border threats to health and for the information exchange, consultation and coordination of responses to such threats pursuant to Decision No 1082/2013/EU of the European Parliament and of the Council*

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Regulation: Article 1

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of	EU		

application			
Keywords	EWRS competent authorities; contact tracing	Interventions	An exchange of information

1. The Commission shall grant to the EWRS competent authorities, designated in accordance with Article 15(1)(b) of
Decision No 1082/2013/EU, access to the early warning and response system established pursuant to Article 8 of
Decision No 1082/2013/EU.
2. Member States shall ensure that effective communication channels are established between the EWRS competent
authorities and any other relevant competent authorities within their jurisdiction in order to promptly identify serious
cross-border threats to health fulfilling the criteria laid down in Article 9(1) and (2) of Decision No 1082/2013/EU.

Regulation: Article 2

Type of norm	proc.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Alert notifications in the EWRS	Interventions	An exchange of information

1. Where a Member State or the Commission becomes aware of the emergence or development of a serious crossborder threat to health within the meaning of Article 9(1) of Decision No 1082/2013/EU, it shall introduce the alert referred to in that Article without delay and in any event no later than 24 hours from when it first became aware of the threat.
2. The Member State or the Commission may inform the Health Security Committee ('HSC') of the introduction of an alert.
3. The notification obligation referred to in paragraph 1, shall not affect the notification obligation laid down in Article 9(2) of Decision No 1082/2013/EU.
4. The fact that not all relevant information, as indicated in Article 9(3) of that Decision, may be available shall not delay the notification of an alert.
5. The alert referred to in paragraph 1 shall specify how the criteria laid down in Article 9(1) of Decision No 1082/2013/EU are fulfilled.
6. Where, following an alert notification, a Member State or the Commission wishes to communicate available relevant information for coordination purposes pursuant to Article 9(3) of Decision No 1082/2013/EU, it shall use the ad hoc functionality of the EWRS to post a 'comment' in reply to the initial notification message.

Regulation: Article 3

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Other Union rapid alert and information systems	Interventions	An exchange of information

1. The alert notification referred to in Article 2(1) shall specify whether the threat identified has previously been notified through other alert or information systems at Union level or under the Euratom Treaty.
2. Where a serious cross-border threat to health is communicated through more than one Union alert or information system, the Commission shall indicate through the EWRS the lead system for the specific type of information exchange.
3. For the purposes of this Article, other alert and information systems at Union level or under the Euratom Treaty shall include the systems set out in the Annex.

Regulation: Article 4

Type of norm	proc.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Coordination of national responses to serious cross-border threats to health	Interventions	An exchange of information

1. Where a request for consultation is made under Article 11(1)(a) of Decision No 1082/2013/EU for the purposes of coordinating the response to a serious cross-border threat to health, the Commission shall arrange for the consultation to be held within the HSC within 2 working days of the request depending on the urgency related to the severity of that threat.
2. The Commission shall inform the HSC of the request and make available to the HSC any information relevant to the threat in addition to that already communicated through the EWRS.
3. Member States shall also provide in writing any available information relevant to the threat, in addition to that already communicated through the EWRS including public health measures, or other measures, that have been taken or are intended to be taken.
4. The HSC shall examine all the information available relating to the particular threat, including alert notifications, risk assessments, and other information communicated by Member States or the Commission either through the EWRS or the HSC, including information about public health measures that have been taken or are intended to be taken. Such an examination shall be concluded without delay.

5. Members States when considering or taking public health measures to combat serious cross-border threats to health shall take account of the outcome of examination carried out within the framework of the consultation of the HSC.

Regulation: Article 5

Type of norm	proc.	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Risk and crisis communication	Interventions	An exchange of information

1. Following a request for consultation under Article 11(1)(b) of Decision No 1082/2013/EU, Member States shall consult each other within the HSC and develop and suggest the content and form of risk and crisis communications to be provided by the Member States to the general public and/or to healthcare professionals. Member States may adapt the communications according to their needs and circumstances.
2. Member States that have already conveyed risk and crisis communications relating to a serious cross-border threat to health shall inform the HSC and the Commission, in writing, of the content of such communications.

Regulation: Annex

Type of norm	hard	Category	conducting preventive activities, detection of threats, counteracting the spread of threats
Range of application	EU		
Keywords	Non-exhaustive list of alert and Information Systems at union level to be progressively linked with EWRS	Interventions	An exchange of information

This Annex lists rapid alert and information systems which are currently in place at Union level or under the Euratom Treaty and which may be relevant for receiving alerts of and information on events which are or may pose a serious cross border threat to health:
— Animal Disease Notification System (ADNS), to register and document the situation of important infectious animal diseases;
— Commission's cross sectoral warning system (ARGUS), a Commission internal Rapid Alert System allowing all Commission Directorate-Generals to share key information in the event of an emergency/crisis and to enable internal coordination;
— Common Emergency Communication and Information System (CECIS), for civil

protection and marine pollution accidents;
— European Community Urgent Radiological Information Exchange (ECURIE), to notify counter-measures to protect against the effects of a radiological or nuclear accident;
— Major Accident Reporting System (EMARS), to facilitate the exchange of lessons learned from accidents and near misses involving dangerous substances in order to improve chemical accident prevention and mitigation of potential consequences;
— European Notification System for Plant Health Interceptions (EUROPHYT), dealing with interceptions for plant health reasons of consignments of plants and plant products imported into the Union or being traded within the Union;
— Rapid Alert for Blood and Blood Components (RAB), for the exchange of information to prevent or contain crossborder incidents linked to blood transfusions;
— Rapid Alert System for Non-food Dangerous Products (RAPEX), for the exchange of information on products posing a risk to health and safety of consumers;
— Rapid Alert System for Food and Feed (RASFF) platform, for the notification of risks to human health deriving from food or feed;
— Rapid Alert for Tissues and Cells (RATC) platform for the exchange of information and measures related to human tissues or cells transferred across borders for patients;
— European Information Network on Drugs and Drug Addiction (Reitox), to collect and report information on the drug phenomenon across Europe.

Annex F: EU general law regulations

Commission Implementing Decision (EU) 2018/945 of 22 June 2018 on the communicable diseases and related special health issues to be covered by epidemiological surveillance as well as relevant case definitions

Source of law	Commission Implementing Decision (EU)	Year and place of publication	2018, OJ L 170/1
Category	Commission Implementing Decision (EU)		
Type of norm	hard		
Range of application	EU		
Keywords	monitoring; disease	Interventions	surrendering to action

The updated list of diseases threatening public health that have emerged or re-emerged more recently in accordance with the criteria provided in the Annex to Decision No 1082/2013/EU for selection of communicable diseases and related special health issues to be covered by epidemiological surveillance

Commission Recommendation (EU) 2017/1140 of 23 June 2017 on personal data that may be exchanged through the Early Warning and Response System (EWRS) established pursuant to Decision No 1082/2013/EU of the European Parliament and of the Council for the purposes of the coordination of contact tracing measures in relation to serious cross-border threats to health (notified under document C(2017) 4197)

Source of law	Commission Recommendation (EU)	Year and place of publication	2017, OJ L 164/65
Category	Commission Recommendation (EU)		
Type of norm	soft		
Range of application	EU		
Keywords	personal data exchange; EWRS	Interventions	an exchange of information

An indicative list of personal data that may be exchanged for the purpose of coordination of

contact tracing measures.

Commission Implementing Decision of 25 July 2014 implementing Decision No 1082/2013/EU of the European Parliament and of the Council with regard to the template for providing the information on preparedness and response planning in relation to serious cross-border threats to health (notified under document C(2014) 5180)

Source of law	Commission Implementing Decision (EU)	Year and place of publication	2014, OJ L 223/25
Category	Commission Implementing Decision (EU)		
Type of norm	hard		
Range of application	EU		
Keywords	monitoring; disease	Interventions	surrendering to action

Annex to this Decision sets out the template to be used by the Member States when providing the information on their preparedness and response planning in relation to serious cross border threats to health according to Article 4(2) and (3) of Decision No 1082/2013/EU.

Commission Recommendation of 6 February 2012 on data protection guidelines for the Early Warning and Response System (EWRS) (notified under document C(2012) 568)

Source of law	Commission Recommendation (EU)	Year and place of publication	2012, OJ L 36/314
Category	Commission Recommendation (EU)		
Type of norm	soft		
Range of application	EU		
Keywords	personal data exchange; EWRS	Interventions	an exchange of information, collecting data

Data protection guidelines for the early warning and response system (EWRS)

Regulation (EU) No 1052/2013 of the European Parliament and of the Council of

22 October 2013 establishing the European Border Surveillance System (Eurosur)

Source of law	Regulation (EU)	Year and place of publication	2013, OJ L 295/11
Category	Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords	monitoring; disease; personal data; exchange of information; immigrants; cooperation	Interventions	retention, surrendering to action

The establishment of a European Border Surveillance System ('EUROSUR') is necessary in order to strengthen the exchange of information and the operational cooperation between national authorities of Member States as well as with the European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union established by Council Regulation (EC) No 2007/2004 ('the Agency'). EUROSUR will provide those authorities and the Agency with the infrastructure and tools needed to improve their situational awareness and reaction capability at the external borders of the Member States of the Union ('external borders') for the purpose of detecting, preventing and combating illegal immigration and cross-border crime and contributing to ensuring the protection and saving the lives of migrants. This Regulation includes provisions on cooperation with neighbouring third countries, because well-structured and permanent exchange of information and cooperation with those countries, in particular in the Mediterranean region, are key factors for achieving the objectives of EUROSUR. Member States and the Agency shall give priority to the persons in need of urgent medical assistance.

Regulation (EU) No 604/2013 of the European Parliament and of the Council of 26 June 2013 establishing the criteria and mechanisms for determining the Member State responsible for examining an application for international protection lodged in one of the Member States by a third-country national or a stateless person

Source of law	Regulation (EU)	Year and place of publication	2013, OJ L 180/31
Category	Regulation (EU)		

Type of norm	hard		
Range of application	EU		
Keywords	cooperation; exchange of information	Interventions	retention, surrendering to action

This Regulation lays down the criteria and mechanisms for determining the Member State responsible for examining an application for international protection lodged in one of the Member States by a third-country national or a stateless person. Set up rules of cooperation and data exchange, including information about persons health.

Directive 2011/95/EU of the European Parliament and of the Council of 13 December 2011 on standards for the qualification of third-country nationals or stateless persons as beneficiaries of international protection, for a uniform status for refugees or for persons eligible for subsidiary protection, and for the content of the protection granted

Source of law	Directive	Year and place of publication	2011, OJ L 337/9
Category	Directive		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	retention

The purpose of this Directive is to lay down standards for the qualification of third-country nationals or stateless persons as beneficiaries of international protection, for a uniform status for refugees or for persons eligible for subsidiary protection, and for the content of the protection-granted. Access to healthcare, including both physical and mental healthcare, should be ensured to beneficiaries of international protection.

Directive 2013/33/EU of the European Parliament and of the Council of 26 June 2013 laying down standards for the reception of applicants for international protection

Source of law	Directive	Year and place of publication	2013, OJ 180/96
Category	Directive		

Type of norm	hard		
Range of application	EU		
Keywords		Interventions	retention

The purpose of this Directive is to lay down standards for the reception of applicants for international protection ('applicants') in Member States. This Directive sets--up standards of accesibility to healthcare system for applicants and regulates rules of a detention (based on national security or public order).

Directive 2008/115/EC of the European Parliament and of the Council of 16 December 2008 on common standards and procedures in Member States for returning illegally staying third-country nationals

Source of law	Directive	Year and place of publication	2008, OJ L 348/98
Category	Directive		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	retention, surrendering to action

This Directive sets out common standards and procedures to be applied in Member States for returning illegally staying third-country nationals, in accordance with fundamental rights as general principles of Community law as well as international law, including refugee protection and human rights obligations.

Council Recommendation of 7 December 2018 on strengthened cooperation against vaccine-preventable diseases

Source of law	Council Recommendation	Year and place of publication	2018, OJ C 466/1
Category	Council Recommendation		
Type of norm	soft		
Range of application	EU		
Keywords	monitoring; disease; conducting	Interventions	surrendering to action

preventive activities

The actions put forward in this Recommendation aim to increase public health security, reduce inequalities between Member States, and increase the security of vaccine supply within the Internal Market. They complement and reinforce national policies and actions in all Member States while taking into account their different starting points as regards immunisation policies, institutional set-up, regional differences, and healthcare capacities.

Regulation (EU) 2016/1953 of the European Parliament and of the Council of 26 October 2016 on the establishment of a European travel document for the return of illegally staying third-country nationals, and repealing the Council Recommendation of 30 November 1994

Source of law	Regulation (EU)	Year and place of publication	2016, OJ L 311/13
Category	Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	retention

This Regulation establishes a uniform European travel document for the return of illegally staying third-country nationals (European travel document for return), in particular its format, security features and technical specifications. It repeals the current standard travel document for the return of third-country nationals, established by the Council Recommendation of 30 November 1994 and strenghtens regulations resulting from 2008/115/EC Directive.

Regulation (EU) 2016/429 of the European Parliament and of the Council of 9 March 2016 on transmissible animal diseases and amending and repealing certain acts in the area of animal health ('Animal Health Law')

Source of law	Regulation (EU)	Year and place of publication	2016, OJ L 84/1
Category	Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords	monitoring; disease; conducting preventive	Interventions	retention, supervision over vectors, collecting data

activities

This Regulation lays down rules for the prevention and control of animal diseases which are transmissible to animals or to humans.

Commission Implementing Regulation (EU) 2018/1882 of 3 December 2018 on the application of certain disease prevention and control rules to categories of listed diseases and establishing a list of species and groups of species posing a considerable risk for the spread of those listed diseases

Source of law	Commision Implementing Regulation (EU)	Year and place of publication	2018, OJ L 308/21
Category	Commision Implementing Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	retention, supervision over vectors, collecting data

Regulation (EU) 2016/429 lays down rules for the prevention and control of diseases which are transmissible to animals or humans, including rules for the prioritisation and categorisation of listed diseases that are of concern at Union level. Article 5 of Regulation (EU) 2016/429 provides that disease-specific rules for the prevention and control of diseases apply to the listed diseases, as referred to in that Article and in Annex II to that Regulation. Annex II to Regulation (EU) 2016/429 was amended by Commission Delegated Regulation (EU) 2018/1629, and those amendments apply from 21 April 2021.

Agreement on the Application of Sanitary and Phytosanitary Measures (WTO-GATT 1994)

Source of law	Agreement	Year and place of publication	1994, OJ L 336/40
Category	Agreement		
Type of norm	soft		
Range of application	EU		
Keywords	monitoring; conducting preventive activities	Interventions	retention, supervision over vectors, surrendering to action

This Agreement applies to all sanitary and phytosanitary measures which may, directly or indirectly, affect international trade. Such measures shall be developed and applied in accordance with the provisions of this Agreement.

Council Directive 89/662/EEC of 11 December 1989 concerning veterinary checks in intra-Community trade with a view to the completion of the internal market

Source of law	Directive	Year and place of publication	1989,
Category	Directive		
Type of norm	soft		
Range of application	EU		
Keywords		Interventions	retention, supervision over vectors, surrendering to action

Member States shall ensure that the veterinary checks to be carried out on products of animal origin which are covered by the Directives land which are intended for trade are no longer carried out at frontiers but are carried out in accordance with this Directive.

Council Directive 91/496/EEC of 15 July 1991 laying down the principles governing the organization of veterinary checks on animals entering the Community from third countries and amending Directives 89/662/EEC, 90/425/EEC and 90/675/EEC

Source of law	Directive	Year and place of publication	1991, OJ L 268
Category	Directive		
Type of norm	soft		
Range of application	EU		
Keywords	monitoring; conducting preventive activities	Interventions	retention, surrendering to action

This Directive shallapply to veterinary checks in respect of animals from third countries entering the Community. It shall not apply to veterinary checks on family pets accompanying travellers for non-commercial purposes, other than equidae. Date of end of validity: 13/12/2019; Repealed and replaced by 32017R0625.

Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products, amending Regulations (EC) No 999/2001, (EC) No 396/2005, (EC) No 1069/2009, (EC) No 1107/2009, (EU) No 1151/2012, (EU) No 652/2014, (EU) 2016/429 and (EU) 2016/2031 of the European Parliament and of the Council, Council Regulations (EC) No 1/2005 and (EC) No 1099/2009 and Council Directives 98/58/EC, 1999/74/EC, 2007/43/EC, 2008/119/EC and 2008/120/EC, and repealing Regulations (EC) No 854/2004 and (EC) No 882/2004 of the European Parliament and of the Council, Council Directives 89/608/EEC, 89/662/EEC, 90/425/EEC, 91/496/EEC, 96/23/EC, 96/93/EC and 97/78/EC and Council Decision 92/438/EEC (Official Controls Regulation)

Source of law	Regulation (EU)	Year and place of publication	2017, OJ L 95/1
Category Type of norm	Regulation (EU) hard		
Range of application	EU		
Keywords		Interventions	information and education

This Regulation lays down rules for the performance of official controls and other official activities by the competent authorities of the Member States in the areas of prevention and minimisation of risks to human and animal health arising from animal by-products and derived products. This Regulation shall also apply to official controls performed for the verification of compliance with requirements laid down in the rules referred to in paragraph 2 where those requirements are applicable to animals and goods entering the Union or to be exported from the Union.

Regulation (EU) No 576/2013 of the European Parliament and of the Council of 12 June 2013 on the non-commercial movement of pet animals and repealing Regulation (EC) No 998/2003

Source of law	Regulation (EU)	Year and place of publication	2013, OJ L 178/1
Category Type of norm	Regulation (EU) hard		
Range of	EU		

application			
Keywords		Interventions	information and education, retention

This Regulation lays down the animal health requirements applicable to the non-commercial movement of pet animals and the rules for compliance checks on such movement. It shall apply to the non-commercial movement of pet animals into a Member State from another Member State or from a territory or a third country.

Commission Implementing Regulation (EU) No 577/2013 of 28 June 2013 on the model identification documents for the non-commercial movement of dogs, cats and ferrets, the establishment of lists of territories and third countries and the format, layout and language requirements of the declarations attesting compliance with certain conditions provided for in Regulation (EU) No 576/2013 of the European Parliament and of the Council Text with EEA relevance

Source of law	Commision Implementing Regulation (EU)	Year and place of publication	2013, OJ L 178/109
Category	Commision Implementing Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	information and education, retention

This Regulation defines important technical matters connected with 576/2013.

Council Directive 97/78/EC of 18 December 1997 laying down the principles governing the organisation of veterinary checks on products entering the Community from third countries

Source of law	Directive	Year and place of publication	1997, OJ L 24
Category	Directive		
Type of norm	soft		
Range of application	EU		

Keywords		Interventions	retention, surrendering to action

This regulation lays down rules for veterinary checks on products from third countries introduced into one of the territories listed in Annex I.Date of end of validity: 13/12/2019; Repealed and replaced by 32017R0625.

Regulation (EC) No 1069/2009 of the European Parliament and of the Council of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 1774/2002 (Animal by-products Regulation)

Source of law	Regulation (EU)	Year and place of publication	2009, OJ L 300/1
Category Type of norm	Regulation (EU) hard		
Range of application	EU		
Keywords		Interventions	surrendering to action

This Regulation lays down public health and animal health rules for animal by-products and derived products, in order to prevent and minimise risks to public and animal health arising from those products, and in particular to protect the safety of the food and feed chain.

Commission Regulation (EC) No 136/2004 of 22 January 2004 laying down procedures for veterinary checks at Community border inspection posts on products imported from third countries

Source of law	Regulation (EU)	Year and place of publication	2004, OJ L 21
Category Type of norm	Regulation (EU) hard		
Range of application	EU		
Keywords		Interventions	retention, surrendering to action

This regulation lays down procedures for veterinary checks at Community border inspection posts on products imported from third countries. The measures in this Regulation replace

those laid down in Decision 93/13/EEC, which was adopted an the basis of the 97/78/EC Directive.

Regulation (EC) No 853/2004 of the European Parliament and of the Council of 29 April 2004 laying down specific hygiene rules for food of animal origin

Source of law	Regulation (EU)	Year and place of publication	2004, OJ L 139/55
Category	Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	retention, surrendering to action

This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators. They shall apply to unprocessed and processed products of animal origin.

Council Directive 2002/99/EC of 16 December 2002 laying down the animal health rules governing the production, processing, distribution and introduction of products of animal origin for human consumption

Source of law	Directive	Year and place of publication	2002, OJ L 13
Category	Directive		
Type of norm	soft		
Range of application	EU		
Keywords		Interventions	information and education

This Directive lays down the general animal health rules governing all stages of the production, processing and distribution within the Community and the introduction from third countries of products of animal origin and products obtained therefrom intended for human consumption.

Regulation (EC) No 851/2004 of the European Parliament and of the Council of 21 april 2004 establishing a European Centre for disease prevention and control

Source of law	Regulation (EU)	Year and place of publication	2004, OJ L 142/1
Category	Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	surrendering to action

This Regulation establishes an independent European agency for disease prevention and control, its mission, tasks and organisation - European Centre for Disease Prevention and Control.

Regulation (EU) 2017/2226 of the European Parliament and of the Council of 30 November 2017 establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third-country nationals crossing the external borders of the Member States and determining the conditions for access to the EES for law enforcement purposes, and amending the Convention implementing the Schengen Agreement and Regulations (EC) No 767/2008 and (EU) No 1077/2011

Source of law	Regulation (EU)	Year and place of publication	2017, OJ L 327/20
Category	Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	collecting data, an exchange of information

This Regulation establishes an 'Entry/Exit System' (EES) for the recording and storage of the date, time and place of entry and exit of third–country nationals crossing the borders of the Member States at which the EES is operated.

Commission Regulation (EC) No 206/2009 of 5 March 2009 on the introduction into the Community of personal consignments of products of animal origin and amending Regulation (EC) No 136/2004 (Text with EEA relevance)

Source of law	Regulation (EU)	Year and	2009, OJ L 77/1

		place of publication	
Category	Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	infortmation and education, retention

This Regulation lays down rules concerning the introduction into the Community of personal consignments of products of animal origin of a non commercial character which form part of travellers' luggage, or are sent as small consignments to private persons, or are ordered remotely (for example, by mail, by telephone or via the Internet) and delivered to the consumer.

Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community

Source of law	Directive	Year and place of publication	2000, OJ L 169
Category	Directive		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	supervision over vectors

This Directive concerns protective measures against the introduction into the Member States from other Member States or third countries of organisms which are harmful to plants or plant products.

Exchange of letters between the European Communities and the World Health Organization (WHO) laying down the procedure for cooperation between the two organizations - Memorandum defining the arrangements for cooperation between the World Health Organization and the European Communities

Source of law	Year and place of publication	1982, OJ L 300
Category		

Type of norm	soft
Range of application	European Communities and the World Health Organization
Keywords	Interventions surrendering to action

Memorandum defining the arrangements for cooperation between the World Health Organization and the European Communities the procedure for cooperation between the two organizations

Communication from the Commission to the European Parliament and the Council The EU Internal Security Strategy in Action: Five steps towards a more secure Europe

Source of law	Communication from the Commission to the European Parliament and the Council	Year and place of publication	2010, COM/2010/0673 final
Category	Communication from the Commission to the European Parliament and the Council		
Type of norm	soft		
Range of application			
Keywords	conducting preventive activities, detection of threats, counteracting the spread of threats	Interventions	Internal Security Strategy

OBJECTIVE 5: Increase Europe's resilience to crises and disasters

The EU is exposed to an array of potential crises and disasters, such as those associated with climate change and those caused by terrorist and cyber attacks on critical infrastructure, hostile or accidental releases of disease agents and pathogens, sudden flu outbreaks and failures in infrastructure. These cross-sectoral threats call for improvements to long-standing crisis and disaster management practices in terms of efficiency and coherence. They require both solidarity in response, and responsibility in prevention and preparedness with an emphasis on better risk assessment and risk management at EU level of all potential hazards.

Regulation (EU) 2018/1240 of the European Parliament and of the Council of 12 September 2018 establishing a European Travel Information and Authorisation System (ETIAS) and amending Regulations (EU) No 1077/2011, (EU) No 515/2014, (EU) 2016/399, (EU) 2016/1624 and (EU) 2017/2226

Source of law	Regulation (EU)	Year and place of publication	2018, L 236/1
Category	Regulation (EU)		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	retention, information and education

This Regulation establishes a 'European Travel Information and Authorisation System' (ETIAS) for third-country nationals exempt from the requirement to be in possession of a visa when crossing the external borders ('the visa requirement') enabling consideration of whether the presence of those third-country nationals in the territory of the Member States would pose a security, illegal immigration or high epidemic risk. For this purpose, a travel authorisation and the conditions and procedures to issue or refuse it are introduced.

Consolidated version of the Treaty on the Functioning of the European Union

Source of law	Treaty	Year and place of publication	2012, OJ C 326
Category	Treaty		
Type of norm	hard		
Range of application	EU		
Keywords		Interventions	information and education

The Treaty of Lisbon has enhanced the importance of health policy, stipulating that 'a high level of human health protection shall be ensured in the definition and implementation of all Community policies and activities'. This objective is to be achieved through Community support to Member States and by fostering cooperation. Primary responsibility for health protection and, in particular, the healthcare systems continues to lie with the Member States. However, the EU has an important role to play in improving public health, preventing and managing diseases, mitigating sources of danger to human health, and harmonising health strategies between Member States.

Regulation (EC) No 1338/2008 of the European Parliament and of the Council of 16 December 2008 on Community statistics on public health and health and safety

at work

Source of law	Regulation (EU)	Year and place of publication	2008, OJ L 354
Category Type of norm	Regulation (EU) hard		
Range of application	EU		
Keywords	public health definition	Interventions	collecting data, an exchange of information

This Regulation establishes a common framework for the systematic production of Community statistics on public health and health and safety at work. The statistics shall be produced in compliance with standards on impartiality, reliability, objectivity, cost-effectiveness and statistical confidentiality.

Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC

Source of law	Regulation (EU)	Year and place of publication	2018, OJ L 295
Category Type of norm	Regulation (EU) hard		
Range of application	EU		
Keywords		Interventions	retention

This Regulation lays down rules relating to the protection of natural persons with regard to the processing of personal data by the Union institutions and bodies and rules relating to the free movement of personal data between them or to other recipients established in the Union.