PANDHUB

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D5.1 – Review of communication flows

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Summary

The present document aims at reviewing the communication flow and the organisation to manage pandemic risk in transport hubs.

The health crisis management information flows and the various actors are already well defined and organised thanks to the implementation of IHR at all levels from the national level up to the European and international level. The operational management of the health crisis stays under the responsibility of the members states. European and international bodies are informed in case of potential serious cases and in case of potential serious cross border issues.

At national level, each identified point of entry has to appoint a specific focal point refering to the national IHR focal point. The information flow and the logic of alert triggering are well described for ports and airports. Regarding urban transportation however, the information flow is less clear, the transport organizations usually have their own crisis management cells. But regarding specific potential health crisis, they directly rely on the national health authorities.

At European level, these communication exchanges are especially relying on the EWRS system operated by ECDC. Additional tools have recently been developed through two specific European networks resulting from the European projects AIRSAN and SHIPSAN. It is not clear however if there are specific information exchanges at European level between transport hubs, especially for instance between the main European train stations.

The document reviews as well all the existing guidelines.

The communication tools to support the informations flows will be detailed in the deliverable D5.2.

Abbreviations

ACI	Airports Council International
BTWC	Biological and Toxin Weapons Convention
CAPSCA	Cooperative Agreement for Preventing the Spread of Communicable Diseases through Air Travel
CCA	Crisis Coordination Arrangements
CDC	United States Centers for Disease Control and Prevention
CLSI	Clinical and Laboratory Standards Institute
ECDC	European Centre for Disease Prevention and Control
EIS IHR	Event Information Site
EMRO WHO	Regional Office for the Eastern Mediterranean
EWRS	Early Warning Response System
EURO WHO	Regional Office for Europe
IATA	The International Air Transport Association
ICAO	International Civil Aviation Organization
IHR	International Health Regulations
IPC	Infection Prevention and Control
NFP	National IHR Focal Point
NSS	National Surveillance and Response Strengthening Team
PAGnet	Public Health and Ports, Airports and Ground Crossings Network
PHEIC	Public Health Emergency of International Concern
PoE	Points of Entry
REACT	Reaction to Emergency Alerts Using Voice and Clustering Technologies
RPI	Regulations, Procedures and Information Team
TEPHINET	Training Programmes in Epidemiology and Public Health Intervention Network
WER	Weekly Epidemiological Record
WHO	World Health Organization

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1   Introduction

Transport hubs need to be prepared for various types of hazards that can cause major impacts to the transportation system. These hazards can be caused by natural phenomena like extreme weather conditions or geological factors, or they can be intentional man-made disasters. To be able to manage such hazards, basic emergency management infrastructure and all-hazard preparedness approach are essential for transport organisations. The all-hazard preparedness plan is also a basis for managing high threat pathogen incidents.

The scale of the high threat pathogen incidence depends on the original cause of the event. A naturally occurring pandemic will affect, in addition to transportation systems, other essential community services/critical infrastructures /key essential areas like health, defence, law and order, finance, telecommunications, energy, food and water. The effects of a man-made incident depend on capabilities of the perpetrator like the agent and dispersion method used.

In such health crisis situations, rapid and efficient communication between the different stakeholders and crisis management actors is essential including internal and external communication of transport hubs.

2   Goal

The purpose of WP5 is identify and complement tools to support efficient and rapid communication between all the stakeholders involved in the prevention and management of pandemics or highly dangerous pathogens in transport hubs.

The present document aims at describing the main information flows involving transport hubs in case of health crisis. The document describes the general rules and guidelines and the main communication flows from the international level down to the national level.

3   Health crisis management – International and European regulations

3.1 International framework – IHR, implementation in Transport hubs

The **IHR** (International Health Regulations**)** are a framework aimed at helping countries to minimize the impact and spread of public health threats. As an international treaty, the IHR is legally binding on all state parties, including the twenty-eight EU Members. The revised IHR introduced the concept of public health emergencies of international concern in order to cover existing, new, and old diseases, including health crises due to non-infectious diseases.

Countries are using the IHR framework to prevent and control global health threats while keeping international travel and trade as open as possible.

The IHR (2005) requires state parties to meet specific core capacity requirements for surveillance and response in order to early detect, investigate and respond to all public health risks. This mechanism, known as Early Warning and Response (EWAR), is based on the collection and the dissemination of pertinent information to competent authorities who can take appropriate measures.

Part IV of IHR2005 and annex 1B of IHR2005 describes the rules for points of entry and provides in annex 8 the model of maritime declaration of health and in annex 8 the health

part of the aircraft general declaration. Article 22, in particular, describes the role of competent authorities. **The communication with the national IHR focal point on relevant public health measures is part of the role of the competent authorities of points of entry**.

The document "**Coordinated public health surveillance between points of entry and national health surveillance systems. Advising principles**" (WHO 2014)) describes how to contribute to the implementation of IHR core capacities by **strengthening communication and coordination between points of entry** (including transport hubs) **and the national health surveillance systems**. This document describes in particular the measures and steps for strengthening the coordination between Points of Entry and the national health surveillance system and highlights the need for establishing information flow circuits. The recommended information flows are described in section 4.

Besides IHR, 2 other international regulations relate to public health surveillance in points of entry:

- The Convention on International Civil Aviation issued by the International Civil Aviation Organization and the Air Traffic Management document describing in particular how a suspected communicable disease aboard an aircraft should be reported by the pilot-in command and the air traffic control, which comply with IHR provisions for aircraft and airports and include models of the General Declaration, the Passenger Manifest, and the Public Health Passenger Locator Form (Evans 2009).

- The terrestrial animal health code of the work organisation for animal health.

3.2 EU regulations for health crisis management

EU Legislation on Serious Public Health Crises: Decision No. 1082/2013/EU on Serious Cross-Border Threats to Health

This decision aims at providing 4 major benefits:

- To strengthen preparedness planning

- To improve risk assessment and management of cross-border health threats

- To establish the necessary arrangements for the development and implementation of a joint procurement of medical countermeasures

- To enhance the coordination of response at EU level by providing a solid legal mandate to the Health Security Committee. The Decision gives the Health Security Committee a solid legal footing in co-ordinating preparedness. In case of crisis, the HSC is able to decide quickly on the coordination of national responses, communication messages to the public and to the healthcare professionals.

EU Counterterrorism acts: Directives, Decisions, Regulations. related to combating terrorism-Council Framework Decision of 13 June 2002.

3.3 Other reference documents specific to transport hubs or transportation

General documents for points of entries
PAGnet - WHO documents – Guides and other documents for implementation of IHR at points of entries in particular: - The document "Coordinated public health surveillance between points of entry and national health surveillance systems" (WHO 2014) - Handbook for inspection of ships and issuance of ship sanitation certificates (WHO 2011)
Documents specific to civil aviation
CAPSCA — Cooperative agreements for preventing the spread of communicable diseases through air travel, under the leadership of the ICAO (International Civil Aviation Organization)
Airport preparedness guidelines for outbreaks of communicable disease Issued by ACI and ICAO (ACI 2009, RevisedRevised April 2009)
ACI - Best practice paper: business continuity management framework and case studies for health-related disruptions at airports (ACI 2012)
Reference documents on ground public transportation
Public transportation documents NCHRP (2014). A Guide for Public Transportation Pandemic Planning and Response. Transportation Research Board, Report 769
APTA The American Public Transportation Association 2009. Recommended Practice for a Pandemic Flu Response Plan
Homeland Security 2007: Pandemic Influenza - Preparedness, Response, and Recovery. Guide for critical infrastructure and key resources Annex: Mass Transit Sub-Sector

Guidelines set by the airport preparedness guidelines for outbreaks of communicable diseases (ACI / ICAO)

The **responsibility** for management of the risk of communicable diseases at airports **rests primarily with the local/regional/national public health authority and the relevant airport operator** (guidance on the role of the "competent authorities" at airports is given in the International Health Regulations (2005) article 22).

The guidelines describe that each country should have a national rapid communication network involving stakeholders in the aviation industry e.g. airport authorities, public health and airport medical service providers, ground handling agents, air traffic control, airlines and general aviation; other stakeholders e.g. public health agencies, security, police, ground transport, retail, immigration, customs etc; and the public.

4   Communication flows for the management of health crisis

4.1 At International level

IHR guidelines - Overview of the information flows and the links with transport hubs

The rules of communication are formalised at national level and depend on countries. The WHO document "Coordinated public health surveillance between points of entry and national health surveillance systems – Advising principles" provides an example of possible communication flows as shown in the next figure.
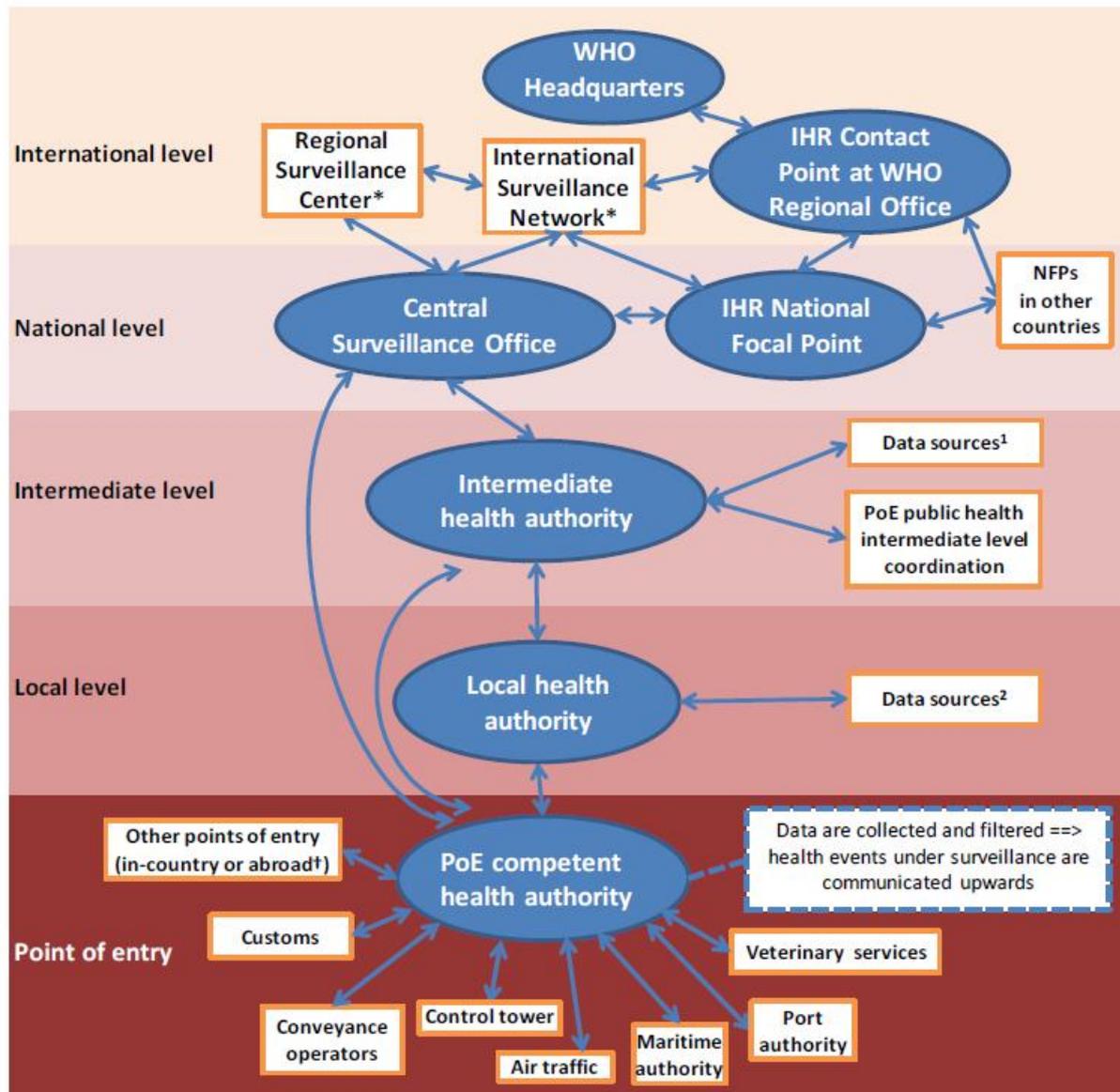

Figure 1: Example of surveillance data flow between points of entries and national health surveillance systems (extracted from WHO 2014"

This document recommends having in each country:
- A **health data coordinator at the point of entry** responsible for public health surveillance in the point of entry e.g. in a transport hub, responsible for centralising the relevant public health information, ensuring a unique channel of data exchanges with the national health surveillance systems and other actors, and responsible for

triage and communication of only the relevant health information. This coordinator may be from the ministry of health or from a health agency.
- A **national level coordinator of border public health data** collecting data from all coordinators of all points of entry and responsible for the national Focal Point of IHR for the country.

This document highlights as well the need to implement feedback to the point of entry and describes the need to have communications between points of entry in the event of a public health risk (for instance between departing one and arrival one) recommending to establish well in advance communication administrative arrangements between points of entries.

WHO recommends implementing a national plan for coordinated public health surveillance between points of entries and the national health surveillance system.

International networks and communication guidelines

4.1.1.1   International network for management of health crises

Global health Security Initiative (GHSI) – this initiative is an international partnership of like-minded countries to strengthen health preparedness and the global response to threats of CBRN substances and pandemic influenza. The GHSI structure comprises a ministerial forum which meets annually to discuss the work programme and flag up any emerging or current health security challenges. With the World Health Organisation, it is developing a road map for joint work on several topics including on IHR and on emergency preparedness.

4.1.1.2   WHO networks for coordination of actions for ports, airports and ground crossing

PAGnet is a network that brings together public health officials responsible for port health and key partners to coordinate public health activities at ports, airports and ground crossings. It is a WHO web-based network for the prevention, detection and control of international spread of disease and its agents through international travel and transport. It includes the organisation of conferences and meetings, access to guidance and tools and community identification.

WHO Travel and Transport Task Force (2014) implemented for the Ebola crisis – For the Ebola crisis, to support the global efforts to contain the spread of the disease and provide a coordinated international response for the travel and tourism sector, the heads of WHO, the International Civil Aviation Organization (ICAO), the World Tourism Organization (UNWTO), Airports Council International (ACI), International Air Transport Association (IATA) and the World Travel and Tourism Council (WTTC) decided to activate a Travel and Transport Task Force to monitor the situation and provide timely information to the travel and tourism sector as well as to travellers. The aim was to facilitate a coordinated and consistent approach to the provision of information for the air and maritime travel and transport sectors.

The Travel and Transport Task Force is working to:

- Develop guidance on exit screening recommendations for affected countries
- Provide a set of considerations and steps for planning entry screening at point of entry for countries that wish to introduce this as part of their preparedness plan
- Inform the aviation and maritime sectors on procedures for caring safely for travellers who are suspected to be infected with Ebola on board an aircraft or ship, or at arrival points
- Provide information on Ebola to travellers arriving at or leaving airports, ports or other transit points
- Develop protocols for the passenger shipping sector
- Collect data and work with authorities to reduce restrictions to port arrivals and ship and aeroplane movements.

4.1.1.3 International networks and communication guidelines specific for civil aviation

CAPSCA — Cooperative agreements for preventing the spread of communicable diseases through air travel, under the leadership of the ICAO (International Civil Aviation Organization) and in coordination with WHO and other partners aims to help reduce the risk of spread of communicable diseases through air travel by means of cooperative arrangements between participating states. The benefits of CASPCA include improved communication and coordination.

ACI and ICAO have issued the airport **preparedness guidelines for outbreaks of communicable disease** (ACI 2009). In those guidelines the responsibilities, communication, screening and handling of inbound aircrafts carrying suspected cases of high hazard infectious disease are dealt with. This document describes in particular that the following **communication links** should be established:

o Internal: local public health authority, airport medical service providers, airlines, handling agents, air traffic management, local hospital(s), emergency medical services, police, customs, immigration, security, airport retailers, information/customer relations services, other stakeholders as necessary;

o External: travellers (before reaching the airport and in the terminal building), travel agents, international organizations involved with migration, other airports in same State/region, other airports outside State/region, media.

ACI also published the document: **"Best practice paper: business continuity management framework and case studies for health-related disruptions at airports".** This document recommends the implementation of a crisis management strategy including plans to enable fast and effective communication and recommends the implementation of communication plans.

4.1.1.4 Communication guidelines specific for ports

As a complement to WHO with PAGnet, IMO (the international maritime organisation) issues special guidance and information on recommended protection measures in case of risks, in cooperation with WHO. For instance IMO was part of the Travel and Transport Task Force on Ebola.

4.1.1.5 Networks and communication guidelines specific for public transportation

International Association of Public Transport – L'Union internationale des transports Publics

UITP provides services / training to support the establishment of contingency plans including recommendations on how to implement awareness campaigns to limit the spread and measures / communication to protect the staff.

Other related reference guidelines are the guidelines published by the American Public Transportation Association (APTA) and the US based Transportation Research Board for pandemic reponse.

American Public Transportation Association (APTA) – Recommended Practice for a Pandemic Flu Response Plan

APTA has created a Recommended Practice for a Pandemic Flu Response Plan (APTA 2009). The document is a guide for transit agencies developing a Pandemic Flu Response Plan. The response plan is intended to be the primary reference guide during a flu pandemic, but is suggested to be used in conjunction with a transit agency's all-hazards Continuity of Operations Plan (COOP) to provide for comprehensive planning.

The report suggests that **transit agencies first identify alert phases** of the flu pandemic (e.g., the six phases of flu pandemic as defined by the World Health Organization) that will trigger specific actions. In addition, the guide suggests also developing meaningful subphases to the transit agency which can be used to trigger different levels of response.

Communications, in the form of information and educational programs is an essential part of a response plan. Communications can be divided into internal (communication to employees) and external (communication to the riding public). APTA suggestions for the internal communications are presented in the table below.

Table 1. Internal communications during pandemic recommend by APTA (2009)

Alert Phase	Actions	Responsibility
1.a	– Update the district's Injury and Illness Program Plan (IIPP) with a section on precautions against pandemic flues. – Distribute personal hygiene information through the Safety Reminders Program.	Safety Department
1.b	– Develop articles on employee personal hygiene and precautions against pandemic flues. – Publish articles in various district publications.	Media and Public Affairs and Marketing departments
1.c	– Disseminate articles developed in 1.b through Lotus Notes emails, the district website and other forms of outreach. – Partner with public health departments, especially their Risk Communication Message and Education sections, to acquire timely information, and to coordinate appropriate news releases to employees and riding public.	Media and Public Affairs Department
1.d	– Develop a training video and poster(s) on hygiene and precautionary measures against viruses both at work and in the home. – Commence disseminating the video and poster(s) to district departments. – Place pertinent information on the district website.	Media and Public Affairs Department, with support from Safety Department as needed
1.e, 2.b, 3.a and beyond	– Develop and deliver a more formal awareness program that includes personal visits to employee work locations to disseminate facts and to address concerns. This will commence with briefings to managers and unions to solicit their support. – Continue to update employees with status reports of the virus condition, using all appropriate means of distribution.	Safety Department, Media and Public Affairs Department, select executive and department managers

Transportation Research Board (TRB) - A Guide for Public Transportation Pandemic Planning and Response

The US-based Transportation Research Board has issued a report entitled "A Guide for Public Transportation Pandemic Planning and Response" (TRB 2014). The report is designed to assist transportation organizations as they prepare for pandemics and other infectious diseases, such as seasonal flu. It outlines broad guidance on dealing with pandemic preparedness planning and provides information, tools, tips, and guidance on where to find up-to-date recommendations from federal agencies and other resources, prior to and during a pandemic. Regarding communication, the document in particular provides the following guidelines:

Transportation organizations that are part of a local emergency management system *should review their communications capabilities* and equipment (telephone, e-mail, satellite phone, dynamic message signs) as part of the pandemic planning process. *This information should be shared with other response agencies, such as emergency management and public health*. Exchanging comprehensive, timely, and relevant information has benefits for the organization and the overall emergency management system.

Transportation organizations should:

- *Develop strategies to receive emergency management and public health information such as situation reports and health alerts.*
- *Be prepared to share emergency management and public health information, as appropriate. Such information would be shared **with staff** for planning and response purposes. Information would be shared **with customers** to further explain steps the transportation agency may plan to take in response to the pandemic.*
- *Be prepared to **communicate information to emergency management and public health agencies.** Such information may include: levels of ridership, absenteeism, readiness, personnel and needs for equipment and supplies for response operations, and anticipated changes in service.*

4.2   At European level

Communication to and from the EC for health crisis management

The competence to take public health measures is under the responsibility of the member states. They are responsible for implementing these specific health measures but also to inform other countries in coordination with the Commission services.

At European level, the Commission ensures the communication between EU governments to harmonize and coordinate the responses. All types of threats have to be reported according the **Commission's Health Security Initiative**.

At EU level, the national health ministries of each country have to report to the following bodies / systems:

- The **Health Security Committee** (HSC) to exchange information on serious cross border health threats and to coordinate the response.

- The **network for the surveillance and control of communicable diseases for epidemiological surveillance**

- **The Early Warning and Response System** (EWRS - ECDC) & ECDC.

The Health Security Committee

Originally set up at the request of EU health ministers in 2001 as an informal advisory group on health security, the role of HSC was strengthened following the decision 1082/2013/EU. The full composition of HSC was achieved by June 2014. The HSC is chaired by a representative of the Commission and meets on average twice a year physically and on ad hoc basis through audio meetings. Ad hoc audio meetings are called by the Commission or by HSC to discuss **coordination in case of serious cross-border health threats**.

The priority issues discussed by HSC are the **detection and communication, threat and risk assessment, preparedness, scientific advice, crisis management and testing of plans** with development of protocols, guidelines and exercises, and cooperation supporting IHR by creating links between alert systems.

According to the recent report on the implementation of decision N01082/2013/EU, the HSC recently (02/2015) agreed to set up a **permanent communicators' network** and a **permanent working group on preparedness.**

- **Communicator's network –** this group gathers communicators from national risk management authorities, the Commission and EU agencies. Within EU, the network helps communicators to cooperate with each others: during a crisis to share information in the early stages and coordinate common strategies and

messages to the public and for the longer term to exchange bed practice on health risks / crisis communication. At a global level, the network enables the EU to rapidly spread information worldwide, by connecting with existing communicators' networks under the Global Health Security Initiative and the WHO network under the International Health Regulations (IHR).

· **Working group on preparedness and response planning -** In addition to the permanent working group, the commission set up a dedicated EUSurvey website for secure exchange of information on the national preparedness plans. The first survey indicates that the countries have implemented the IHR core capacities also involving other sectors. The survey however revealed **that business continuity plans for the points of entry were not consistently reported to be in place**. The suggested actions by the member states include **facilitating in-country networking of stakeholders and implementing a shared IT platform to facilitate information flow between stakeholders.**

Network for epidemiological surveillance / ECDC

The epidemiological surveillance network is a network between the Commission, ECDC and members states' competent authorities for the epidemiological surveillance of communicable diseases and of related special issues. The network is operated and coordinated by ECDC. Through this network ECDC coordinate EU surveillance in coordination with national focal points for surveillance and disease group-specific national focal points. The main reporting tool is EWRS described below. Additional tools for data sources include the European Surveillance System (TESSy) and the MediSys system providing monitoring reports on threats based on data / activities from news and social media.

Early Warning and Response System (EWRS)

The purpose of EWRS is to enable the commission and competent national authorities to be in permanent communication to alert, assess risk and determine the required measures. It is a web-based system linking the Commission, the public health authorities in Member States responsible for measures to control communicable diseases and the European Centre for Diseases Prevention and Control (ECDC).The scope of the system originally only focused on communicable diseases has been extended to notifications regarding all serious cross-border threats to health including threats of biological, chemical, environmental and unknown origin. The latest version of EWRS allows access to other Commission services and EU bodies responsible for risk management and risk assessment in other areas than those specifically covered by the Public Health Directorate of the Directorate General for Health and Food Safety of the EC, including biologicals other than communicable diseases and health security.

The national competent authorities can use EWRS to notify alerts in case of a serious cross-border threat and to send information. Depending on the alert level, the alert can trigger the **Health Emergency Operation Facility (HEOF) of the Health Threat Unit** of the DG for Health and Food Safety. Rapid risk assessment is provided by ECDC. HEOF is aimed at supporting communication and coordination. It includes a crisis room and communication centre, early warning and reponse systems (EWR, RAS-BICHAT Rapid Alert System for Biological Threats - Rapid Alert System on Biological and Chemical Attack / RAS-CHEM, Medisys and a situation awareness tool called HEDIS).

Coordination on civil protection side

Emergency Response Coordination Centre

National civil protection authorities also report to the **Emergency Response Coordination Centre (ERCC)** (former MIC), according to EU-CCA (Crisis Coordination Arrangements) defining rules for interactions between EU institutions and affected EU States during a crisis, and EU-ICMA defining integrated EU arrangements for crisis management with cross-border

effects. At internal Commission level, the rapid alert system ARGUS is an internal communication network, which brings together all relevant Commission services to coordinate efforts, evaluate the best options for action and decide on the appropriate response measures during an emergency.

Transport ministries are consulted as part of the coordination of the EC plan for the implementation of the control measures.

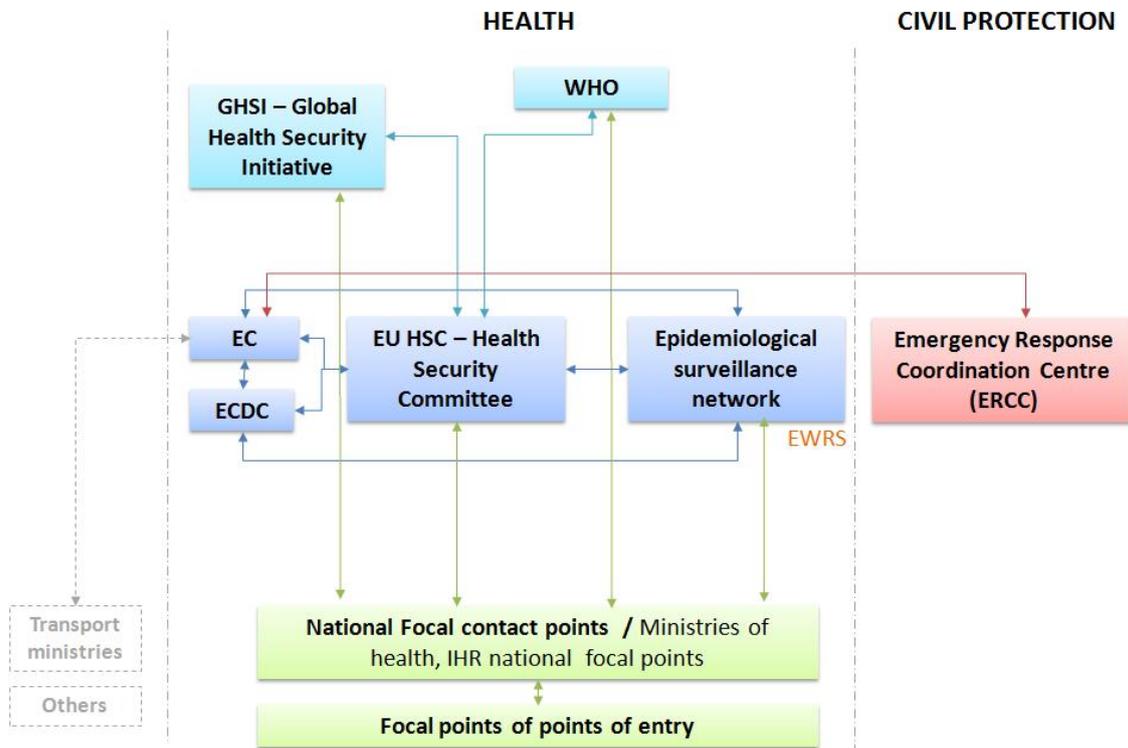Figure 2 provides a simplified view of the resulting information flows between these various bodies.

Figure 2: Simplified view of information flow from national focal points to European bodies and international organisations

Specific European communication networks and guidelines for transport

European Transport Safety organisations - The European Safety agencies for the different transportation modes are: EASA - European Aviation Safety Agency (EASA), ERA – The European Railway Agency promoting safety and interoperability and EMSA – the European Maritime Safety Agency. No specific guidelines for pandemics response plans (others than the ones already mentioned in previous section at international level) were found from these agencies.

The AIRSAN network – The AIRSAN project (www.airsan.eu) was a coordinated action in the aviation sector to control public health threats, coordinated by the Robert Koch Institute. Although not focused on specific measures on airports, the project has in particular developed an AIRSAN network and a tested set of AIRSAN guidance documents. The aim of the AIRSAN Network is to bring together the public health and the aviation sector, i.e. local and national public health authorities, national civil aviation authorities, airport and airline management and medical services. As of December 2015, more than 100 individuals have registered as members of the AIRSAN Network. They represent more than 30 different countries and major relevant international organizations. The project has as well developed an AIRSAN communication platform to support information exchange within the network. The AIRSAN project resulted in the publication of two guidance documents: one on remote risk

assessment and management of communicable disease events on board on aircraft and one on contact tracing.

· Guidelines on remote risk assessment and management of communicable disease events on board on aircraft – The document provides operational guidelines in case a traveller is identified **on board** with a suspect communicable disease. The document targets primarily cabin crew and health authorities but also pilots, airlines, airport operators, civil aviation authorities, medical first responders and the travelling public. The document describes in particular a remote risk assessment flow chart as described in Figure 3.
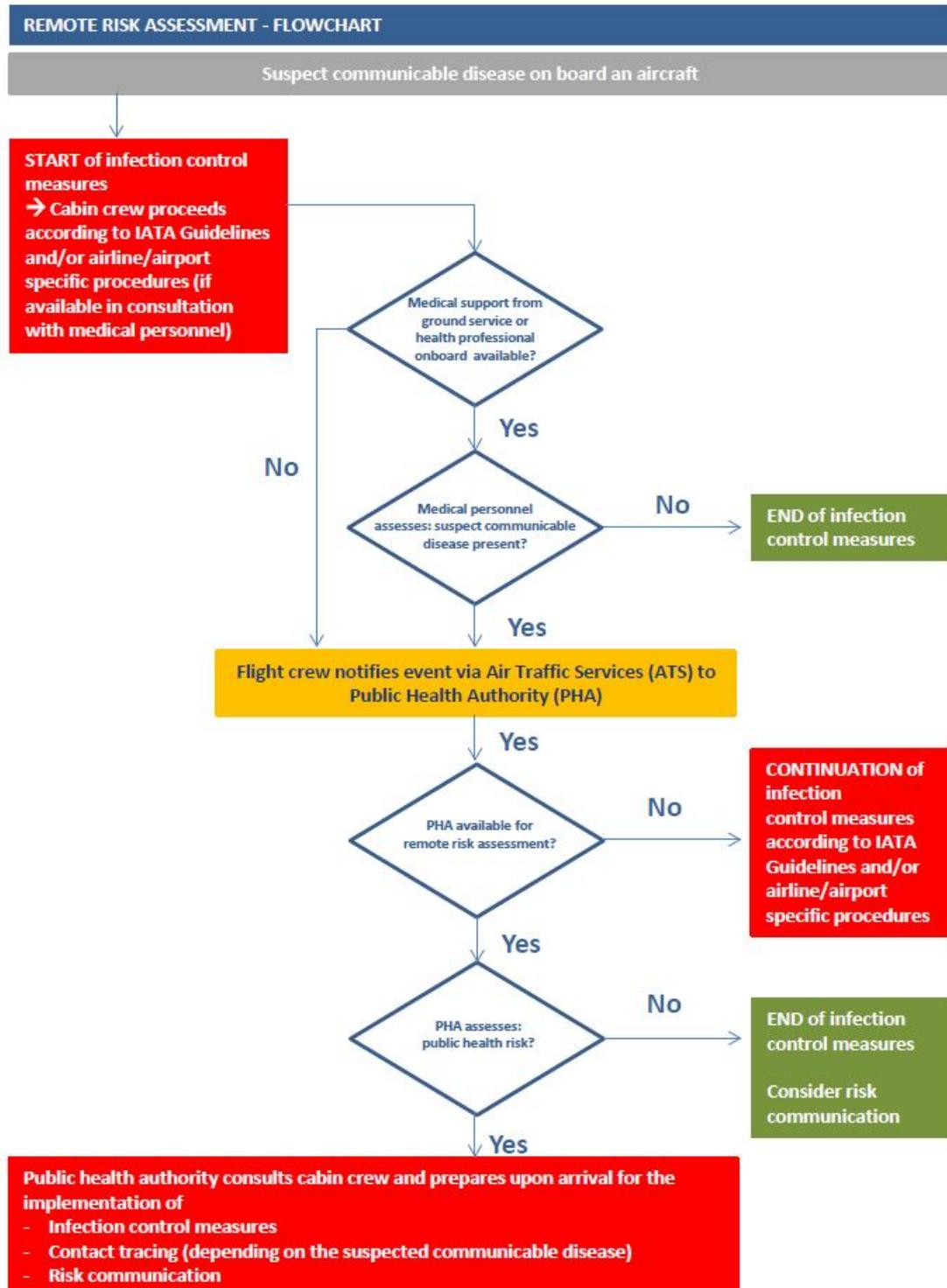

Figure 3: AIRSAN remote risk assessment flow chart

The SHIPSAN project and network

The SHIPSAN ACT is a European Joint Action funded by the European Commission under the Health Programme (2008-2013) where 32 partners from 24 European countries participate. The duration of the EU SHIPSAN ACT Joint Action is 39 months (February 2013-April 2016).

The EU SHIPSAN ACT Joint Action deals with the impact on maritime transport of health threats due to biological, chemical and radiological agents, including communicable diseases and supports the implementation of International Health Regulations 2005.
This project includes a tool to support communication exchange called SHIPSAN ACT Information System (SIS). This information system includes: a communication network platform facilitating ship-to-port, port-to-ship, port-to-port and port-to-national authority communication; an information system for recording and issuing Ship Sanitation Certificates under the International Health Regulations 2005 for all types of ships sailing in European Union and a database for recording inspections conducted according to the European Manual for Hygiene Standards and Communicable Diseases Surveillance on Passenger Ships.

Communication networks between transport hubs?

No specific information was found on specific communication networks at European levels between transport hubs. There are possibly specific action plans of transportation companies covering European lines such as for Thalys and Eurostar.

4.3 Examples of communication flows at National level

The following sections describe examples of communication flows at national level for England and France.

4.3.1 Example of England

4.3.1.1   English organisation & national information flows for health crisis management

In a health crisis in England, the Department of Health, working with its agency Public Health England if appropriate, will lead on communication in support of the lead Minister for that department.   However, where an emergency has wide ranging impacts or gives rise to considerable public and media interest, a News Co-ordination Cell (NCC) will be activated[1]. The NCC will advise the lead department on media handling, compile and maintain a "top lines brief", brief the central government emergency committee COBR and establish a cross-government media centre. In a CBRN incident the UK government Home Office department will lead. Health, through DH, will continue to provide spokespeople and media releases on the health aspects of the crisis to inform the public.

Upward flows of information into DH will be on a periodic basis dependent on the need as identified by the nature of the crisis and the need defined by Government. In a pandemic influenza outbreak for example daily reporting would be expected from the acute settings through NHS England of the number of cases being treated and through Public Health England for the surveillance information being gathered and collated from the primary care setting.

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[1] Responding to Emergencies The UK Central Government Response Concept of Operations https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192425/CONOPs_incl_r evised_chapter_24_Apr-13.pdf

4.3.1.2   Specific flows related to transport hubs

Face to face interviews were conducted with Virgin trains, a UK private train operating company, and Transport for London, a local government body responsible for public transport in the London metropolitan area to understand how their communication networks with staff and passengers works on a day to day basis and how in a crisis communication would be used to convey information to those that needed it. The following information was taken from those interviews.

Communication in the UK rail industry – Virgin trains as an example of a UK based passenger train operating company.

4.3.1.2.1   Background

Since the mid-1990s the UK rail industry has been operated by a number of private companies. Whilst Network Rail, a state owned company, own the track and infrastructure and have responsibility for running some stations such as the London mainline hubs and other larger stations in the UK, passenger services are franchised to a number of different train operating companies (TOCs). Where two or more TOCs share a train line then the responsibility for running the individual stations on that line is divided between the TOCs. This fragmentation of the rail industry presents more of a challenge if we are looking for a consistent and coherent one size fits all method of communicating with passengers and staff as there are likely to be differences between different companies.

4.3.1.2.2   Virgin trains

Virgin trains have a franchise to operate on the Intercity West coast mainline which connects London with central and North West England (Birmingham, Manchester, Liverpool) and beyond to the Scottish cities of Glasgow and Edinburgh. Annual passenger numbers for 2014/15 are 34.5 million passenger journeys. Virgin trains operate out of Euston station in London. The station is run by Network rail and London Midland train services, another TOC, also operate out of this station and run many of the stations on the Virgin trains route up to the Midlands. In total Virgin trains call at 42 stations but only operate 17 of them. Euston also has an underground station.

Methods of communication to the public can be broadly split into 2, with immediate response (Website, twitter, facebook) and reactive (call centre, live chat, email).

Virgin carry a limited database of passenger contact information (email address) as only approximately 20% of bookings are made online through their system. There are a range of other companies that offer on-line bookings, the biggest being Trainline, who have approximately 80% of the online train booking market. Virgin also offer wifi access on their trains, free to 1st class travellers and by payment in standard class. There is a need to log on and provide some contact information to access the wifi and this provides another limited database of passenger contact information.

The Virgin trains representative was of the opinion that the future of communication with passengers and staff was very much driven by digital developments, apps in particular. For example, twitter traffic had increased by 50% in a year and this was purely organic growth without any promotion by the company.

4.3.1.2.3   Communication in a metropolitan transport operating organisation – Transport for London

Transport for London (TfL) is a complex transport operating company responsible for public transport in the Greater London area of ~8 million inhabitants based on the 2011 census and which is increased further on a week day by up to 800,000 commuters (2008 figures) . TfL has responsibility for London overground train services, London underground, London buses, Docklands light railway and Thames river services either running these services directly or

with certain elements of the operation franchised to private companies. There are also other major initiatives and smaller transport activities, so the above list is not exhaustive. Some transport hubs from which TfL operate are extremely complex as they consist of overland and underground train stations as well as bus termini. An example of one of the most complex is Stratford . Despite being a complex business, TfL is not a 24/7 business and whilst it has a duty press office it does not have an out of hours on call service.

In 2007 it was estimated that there were approximately 7.6 million trips (including those by combined modes of transport) per day in Greater London on all forms of public transport. There are three ways to pay: buying a ticket in advance of a journey, using top-up payment cards (called Oyster cards on the TfL network), or immediate payment at points of entry by contactless cards. In terms of tracking passengers, only Oyster currently offers the potential to track individual journeys. Contactless, which was first introduced in September 2014, is too new at present and, although journey-tracking technology exists, there is still work to do in this area before the data becomes accessible.

In excess of 60 million oyster cards have been issued in the first 10 years of this scheme (2003-13). In 2013, Oyster cards were used in excess of 3.3 million times per weekday. There are 4.5 million Oyster cards registered with TfL which means that the journeys made with these cards can be attributed to the registered individual. On the underground and DLR, Oyster cards are used to enter and exit the transport system so journeys can be followed from beginning to end. On buses Oyster is only used at the commencement of a journey so the final destination is unknown.

On average, more journeys are made on buses (3.3 million per day) than on the underground (2.2 million)1. The London bus network is franchised out to various operators. As there are minor issues on the road network in Greater London continually which may impact on bus travel, communication between franchisees control centres, depots, garages and individual buses is well developed and rehearsed. Drivers are in constant radio contact with controllers. Automatic number recognition cameras are also commonplace across London and so the position of individual moving buses can be established quickly if required. Therefore in an emergency situation buses can be contacted quickly.

On the underground communication is slightly more complex. There is a centralised control centre, the London Underground Control Centre (LUCC), where every Underground line is managed. Communications to staff in an emergency could be by text or voicemail message direct to individuals. It is possible to subdivide groups contacted e.g. frontline, back office, etc. The public can be contacted in a variety of ways. Line status information is automatically updated in all stations. These automatic updates are provided to 450 different apps. Staff are able to communicate directly with the public through tannoys and whiteboards, a basic but effective information system the public are familiar with. Many staff are also trained as customer advisors so are used to speaking to the public and providing information and help. TfL also uses social media and has 500,000 twitter followers and a number of widely used hashtags, some general and some specific to different transport alternatives. The public are also able to contact TfL through dedicated call centres and there is a website. Email is used extensively to contact customers too.

TfL is a trusted brand. There are a number of outreach activities through "ambassadors" who develop and maintain links into the local community and schools. TfL also has established links with larger stakeholders such as major companies, who can be used to act as an amplifier of messages.

TfL is a Category 2 responder under the Civil Contingencies act with a duty to assess, plan for, and advise in event of any emergency. When a passenger is ill on a train the procedure is well rehearsed and understood. Most staff are first aid trained. Trains do not stop in tunnels but pull into the next station where the passenger disembarks if possible and the train carries on. Radios in trains work underground so drivers are contactable at all times. CCTV is also prevalent on the underground but if it not available, drivers carry smart devices

so are able to send photographs of an incident if necessary. Emergency scenarios are well rehearsed although TfL staff have not had any CBRN training for 10 years. A number of deep tunnel rescue exercises have been carried out by the Emergency services with TfL in that time however.

4.3.1.2.4 Conclusion

The public transport system in the UK is extremely complex and diverse with a range of operators occupying the space. However, having considered these two examples, it is clear, purely from a commercial point of view, that having strong communication strategies and the hardware to implement them in place is of high importance. Both companies noted that the future was an expansion of social media and that is where they would be expending some effort.

For the purposes of this project a number of observations can be made. Whilst it is incomplete, there is information in the form of passenger databases which, in an emergency, could be made accessible to the health community for the purposes of contacting individuals. Over time this coverage is likely to improve as technology becomes more integral to people's lives, more widely distributed and accessible. For now one avenue to explore is the ability to access Trainline™ data in an emergency, as it was noted earlier that they take a significant number of the UKs bookings on rail services and, as it is an online service, they collect contact information. Another consideration and an output for the project is that both Virgin and TfL would value access to Public Health information and ideally contact with the appropriate organisation in the event of an emergency such as the PANDHUB consortium is considering in this project.

4.3.2 Example of France

4.3.2.1   French organisation & national information flows for health crisis management

French general organizations in case of epidemic or biological risk (EBR)

Organization of patients care in case of exceptional sanitary situation (ESS) is developed in a governmental plan, named ORSAN (Organisation de la Réponse Sanitaire). Instruction N° DGS/DUS/SGMAS/2014/153 du 15 mai 2014, Ministry of social affairs and health. This tool aims to prepare the increase in importance of health system in case of ESS, to predefine the patient's course of care. Inside this dispositive, the EBRC national network has to assure the "trade" animation of the referent hospital for the biological risk, and to coordinate the "practical experience" expertise between hospitals and health authorities.

The French national surveillance institute

Its missions are surveillance of health state of the population and its evolution, alert health authorities in case of sanitary risk in the field of infectious diseases, health-environment, health-work, chronic diseases, and traumas, realise and coordinate epidemiological investigations.

Aims of the EBRC network (COREB in French)

Alerts about emerging infectious diseases (EID), or epidemic and biological risk (EBR), may lead to various degrees of disorganization inside health structures: in SAMU-Center 15 (medical regulation of emergency calls) in case of influx of calls, in general practitioners and hospital medical wards in case of influx of patients, and in the society in case of vital dysfunctions, fear engendered, or economic effects. In response to these alerts, medical procedures helping practitioners who are primarily involved in the care of the patients are necessary as soon as possible. Hypothesis is that mid-long term future of an epidemic depends widely from adequate and coherent coordination of individual care and collective measures, decisions and actions undertaken at the early phase of alert. That's why providing

to first line health care workers a rapid EBRs operational expertise and procedures seems to be necessary.

The necessity of a French EBR network was born in 2003, between infectious disease specialists and emergency specialists, following the anthrax alert in 2001 and the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003. This joint desire to work together was reinforced with preparation to pandemic flu in 2006, and then the EBR Coordination (**EBRC**) group was created as a dedicated unit in 2009 (in French: **COREB Coordination Opérationnelle du Risque Epidemique et Biologique**). It appeared as a willing, from emergency care doctors, to benefit from the infectious expertise as soon as possible, in condition of an emerging phenomenon. In 2012, the French Infectious Disease Society (FIDS) missioned a national EBR task force to help and contribute to the care of patients and coordinate ID and emergency specialists response to EBR, conjugating individual and collective dimensions. And in 2014 a part of the EBRC network was integrated in the ORSAN device, the "national EBRC".

This operational multidisciplinary network has the objective to monitor, alert, and response when an EBR occurs, providing support to emergency departments, pre hospital emergency medical services, and primary care doctors. Each time an alert triggers, the **Procedures-working group** (one of the two WG composing the network), in collaboration with the steering committee, decides whether to generate a specific procedure or not. This decision is also discussed with the national experts in epidemiology and microbiology: epidemiologists of the National Surveillance Institute, and microbiologist of the National Reference Centre (CNR) for the corresponding pathogen. Each procedure is submitted to discussion and comments, then to validation and endorsed, if agreement, by the steering committee and whole FIDS EBRC group, the epidemiologists from National Surveillance Institute, and the representatives of the pertinent scientific partner societies (emergency, paediatric, anesthesiology-reanimation, hygiene). Then, the procedure is sent to heath authorities and published online on infectiologie.com, and a press release is sent to the GPs Newspaper. This coherent and reliable expertise for the care of the first patient give quickly a support for emergency departments and prehospital medicine, first line GPs, and health authorities.
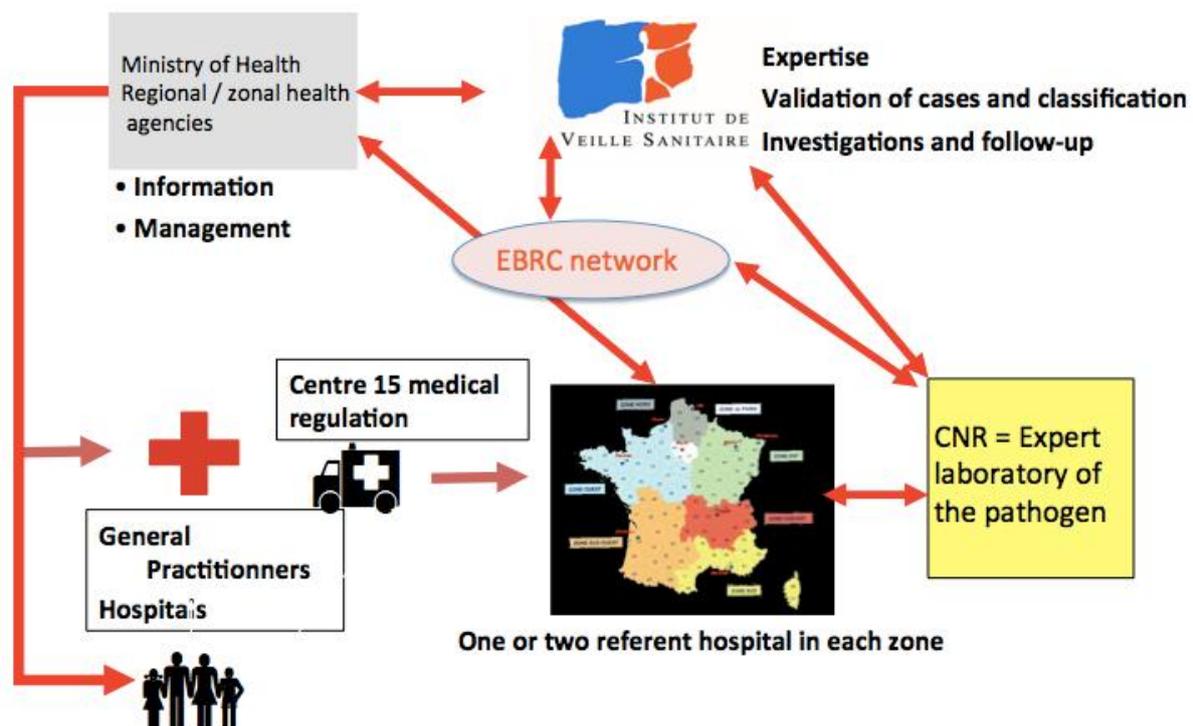

Figure 4: National information flow in France

4.3.2.2 Specific guidelines for points of entries

In France, the ministry of health has published a methodological guide for the elaboration of intervention plans for health emergencies at points of entries ("Elaboration du plan d'intervention pour les urgences de santé publique pour les points d'entrée"), as part of the ORSEC plan (Organisation de la réponse de sécurité civile) to manage public health threats with a possible international impact, in complementarity with the specific ORSEC plans ORSEC aéroport and ORSEC maritime.

This guide recommends a **functional coordinator to be appointed for each point of entry**. He is responsible for the information exchange between the point of entry and the authorities (préfet and ARS (health authorities)). It describes as well **models for information flows from ships or aircraft to points of entries and to the authorities**.

The model of information flow is described as follows and illustrated in the following figures:

For aircrafts

In case of a public risk onboard on aircraft:
-   Information exchange from the captain to the aiport authorities to SAMU
-   Filling of the specific form for aircraft declarations (DGA – Déclaration Générale de l'aéronef)
-   Transmission of DHA from captain to functional coordinator of the airport or medical services.
-   Transmission from medical service, functional coordinator of the aiport or from SAMU to health authorities (ARS) the event requires notification.
-   Health management procedure for the patient transmitted from the medical service to the aircraft captain.

For boats

Information flow for the notification of the health status on-board the ship
-   The captain fills the health maritime declaration (DMS) (based on model of IHR, annex 8). Form sent to the port authorities 24 hours before entry into the port.
-   Depending on the event, if required, the port authorities notify the event to the health authorities (ARS).
-   The health authorities (ARS) inform the prefet.

Information flow for the information regarding health event
-   Information exchange from the ship captain to the port authorities and/or to CROSS (Centre régional opérationnel de surveillance et de sauvetage)
-   Information exchange from port authorities or CROSS to CCMM (Centre de consultation médicales maritimes)
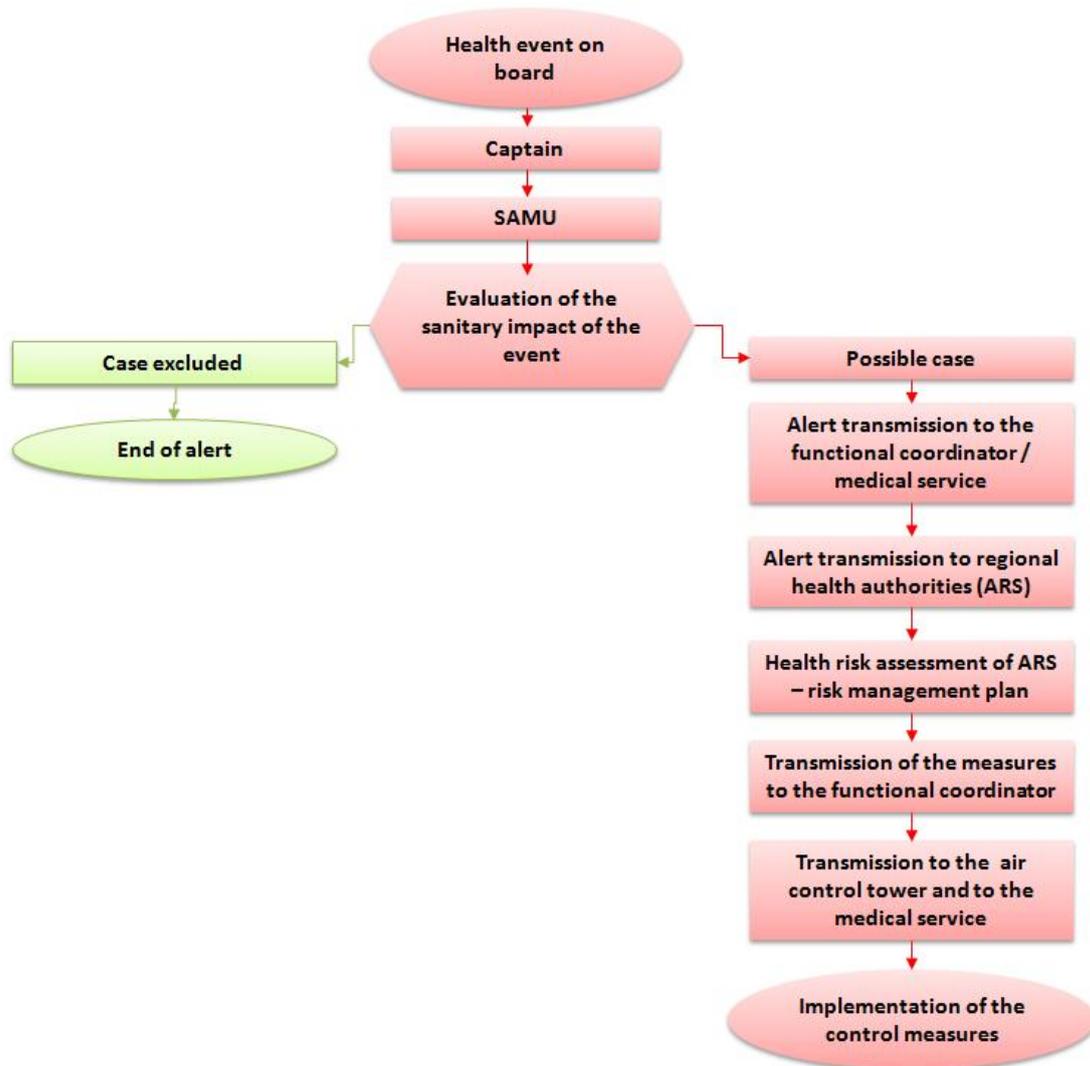-   Depending on the event notificiation from CCMM to ARS (health authorities)

Figure 5: Model of alert scheme for a health event onboard an aircraft (extracted from the national methodological guide for elaboration of intervention plans for health emergencies at the points of entries)
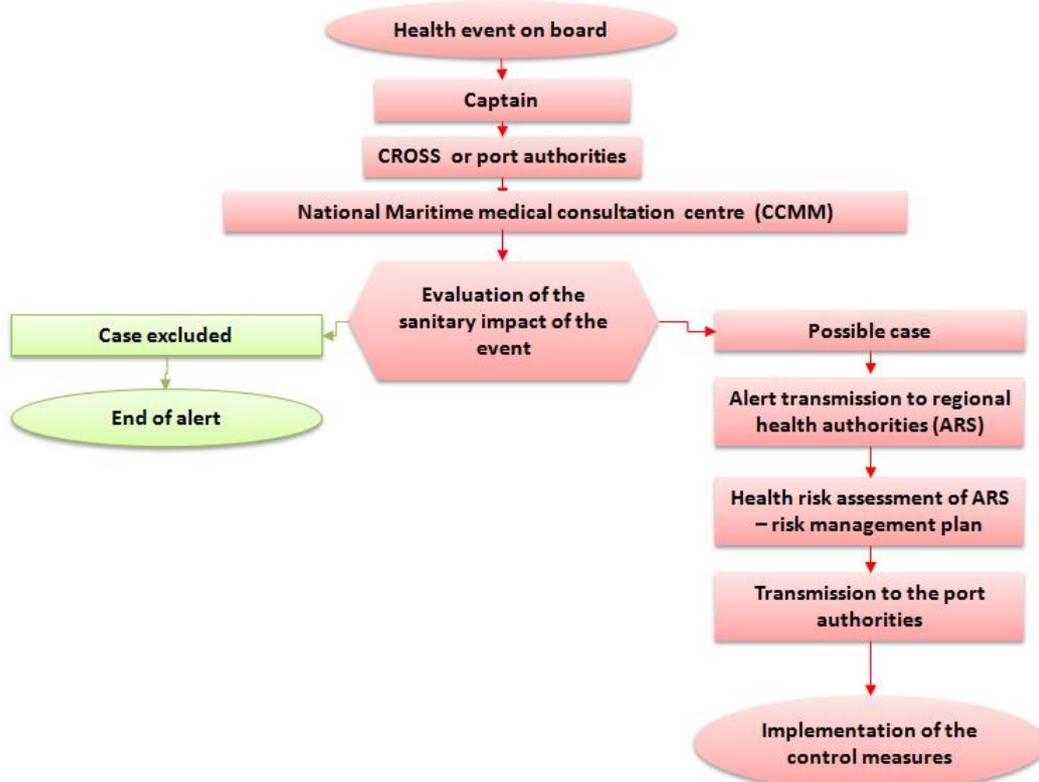
Figure 6: Model of alert scheme for a health event onboard a ship (extracted from the national methodological guide for elaboration of intervention plans for health emergencies at the points of entries)

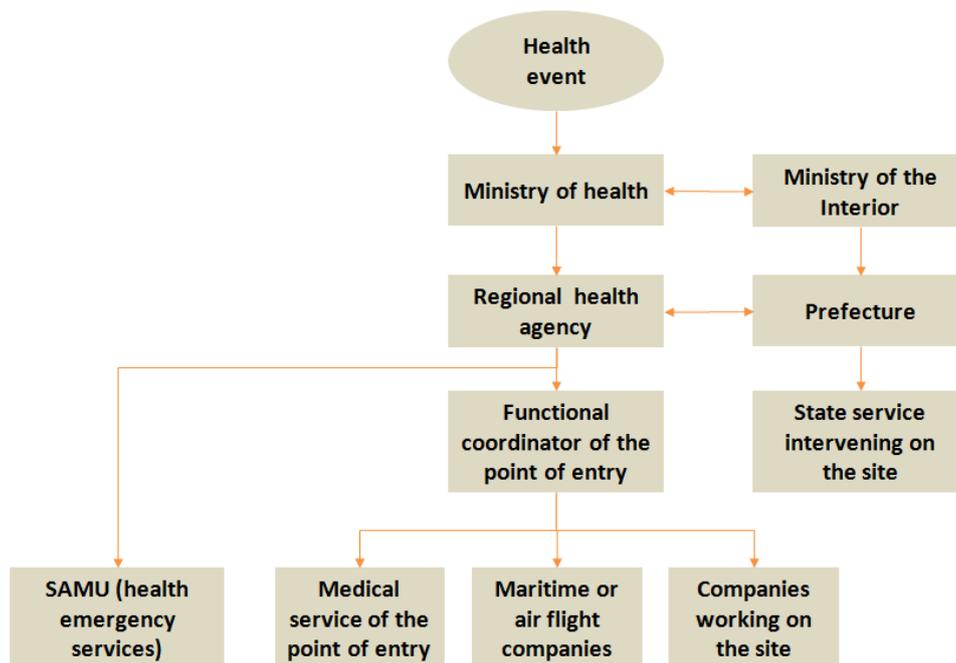The national information flow with points of entries is described in Figure 7.

Figure 7: French alert scheme model from international level to national level (extracted from the national methodological guide for elaboration of intervention plans for health emergencies at the points of entries)

The ministry of health informs the European Union through ECDC / EWRS.

4.3.2.3 Example of specific communication plan of national / local transportation organisation in France

RATP is the organisation responsible for the subway of Paris. RATP has set up specific plans to protect its staff in case of risk. For the public however, the plans are directly managed by the authorities (health and civil protection).

The national train railway organisation SNCF has its own crisis management plans, with a crisis cell.

5   Conclusions

The information flows and the various actors are already well defined and organised thanks to the implementation of IHR at all levels from the national level up to the European and international level. The operational management of the health crisis stays under the responsibility of the members states. European and international bodies are informed in case of potential serious cases and in case of potential serious cross border issues.

At national level, each identified point of entry has to appoint a specific focal point refering to the national IHR focal point. The information flow and the logic of alert triggering are well described for ports and airports. Regarding urban transportation however, the information flow is less clear, the transport organizations usually have their own crisis management cells. But regarding specific potential health crisis, they directly rely on the national health authorities.

At European level, these communication exchanges are especially relying on the EWRS system operated by ECDC. Additional tools have recently been developed through two specific European networks resulting from the European projects AIRSAN and SHIPSAN. It is not clear however if there are specific information exchanges at European level between transport hubs, especially for instance between the main European train stations.

All of the guidelines stress the importance of rapid, accurate and efficient communication.

These communication tools are to be more detailed in the deliverable D5.2.

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