

European Centre for Disease Prevention and Control

EpiPulse Event-Based Surveillance

Influenza and other respiratory viruses (IRV) Domain

Ajibola Omokanye, ECDC
05 March 2024

Agenda

1. Overview of EpiPulse functionality

- Access to IRV domain
- EpiPulse Item types

2. Event-based surveillance in EpiPulse

- When and how to post an Event
- Role of ECDC Round Table and Communicable Disease Threat Reports
- The value of timely positive or negative findings in country replies

3. Review of IRV domain EpiPulse use in 2023

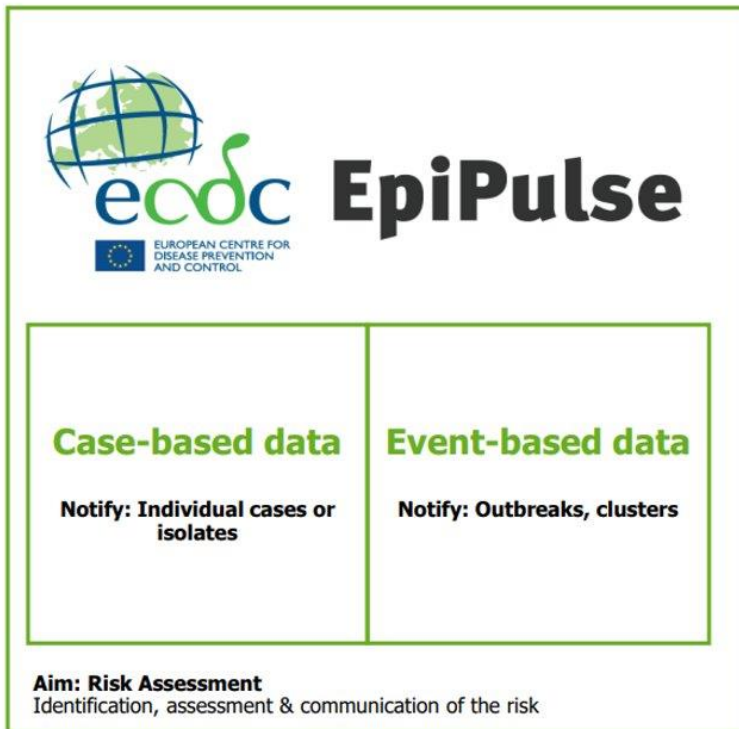
4. Network user experiences and feedback

- What challenges are users facing?
- How can we improve the network's experience with EpiPulse?

1. Overview of EpiPulse functionality

What is EpiPulse?

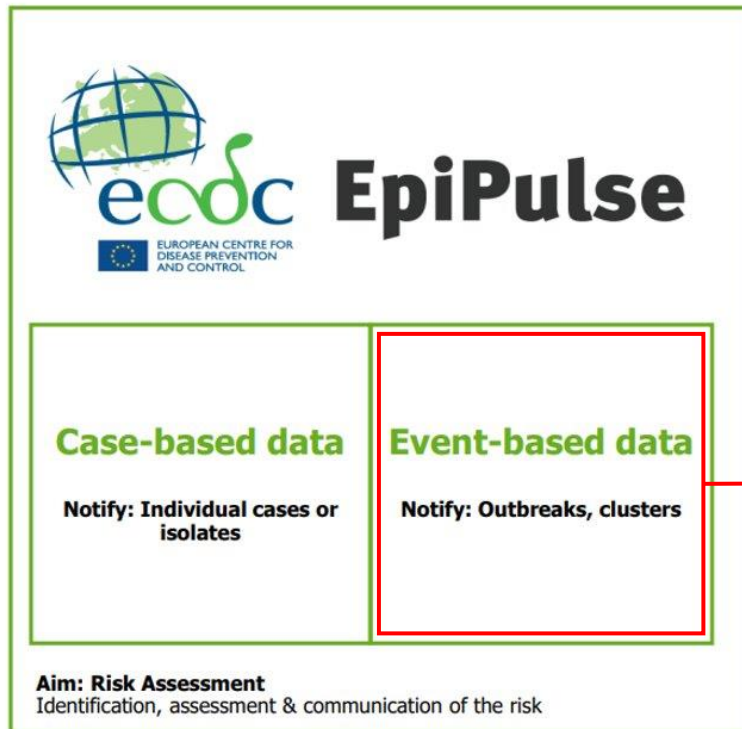
- Online portal for European public health authorities and global partners
- Collect, analyse, share, and discuss data for **threat detection, monitoring, risk assessment** and outbreak response.
- Platform integrates indicator-based and event-based surveillance, including molecular typing.



1. Overview of EpiPulse functionality

What is EpiPulse?

- Online portal for European public health authorities and global partners
- Collect, analyse, share, and discuss data for **threat detection, monitoring, risk assessment** and outbreak response.
- Platform integrates indicator-based and event-based surveillance, including molecular typing.



Events, Forum and News sections launched in 2021

1. Overview of EpiPulse functionality

Access to IRV domain

- Several domains exist within EpiPulse
- Access dependent on CCB nomination
- Current users for IRV network:

OCPs / NFPs for Viral Respiratory Diseases from EU/EEA and EU-pre-accession countries

Other users that can invited to specific events (when applicable):

EURL Avian Influenza
EFSA
WHO Euro
DG SANTE (reader)

	3- digit	Short name	Domain
1	ARH	ARHAI	Antimicrobial resistance and healthcare-associated infections
2	EIP	EI	Epidemic Intelligence
3	EVD	EVD	Emerging and vector borne diseases
4	FWD	FWD	Food- and waterborne diseases and zoonoses
5	HEP	HEP	Viral hepatitis
6	HIV	HIV	HIV/AIDS
7	IRV	IRV	Influenza and other respiratory viruses
8	LEG	LEGI	Legionellosis
9	PRE	PREP	Preparedness
10	SHO	SoHO	Substances of Human Origin
11	SRV	SRV	General Surveillance
12	STI	STI	Sexually transmitted infections
13	TUB	TB	Tuberculosis
14	VPD	VPD	Vaccine-preventable Diseases

1. Overview of EpiPulse functionality

EpiPulse Item types

There are different Item types to facilitate different activities within the platform:

- Signal
- Events
- Threats

} **Event-based surveillance**

- Long-term monitoring
- Forum
- News

ECDC can open:

'Signals' (incidents monitored but not assessed as posing a public health risk for the EU/EEA), 'Events', 'Threats' as well as reclassify a Signal and Event to Threat, if the situation is assessed to pose a public health risk for the EU/EEA and is of concern.

External users can open:

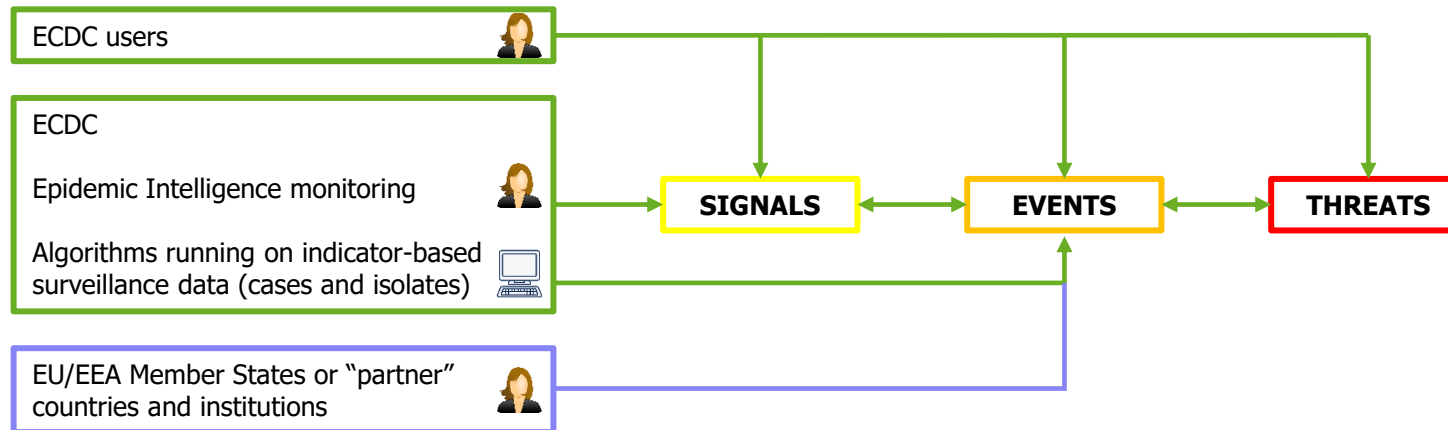
Events – focus of today's session

Forum
News

2. Event-based surveillance in EpiPulse

When and how to post

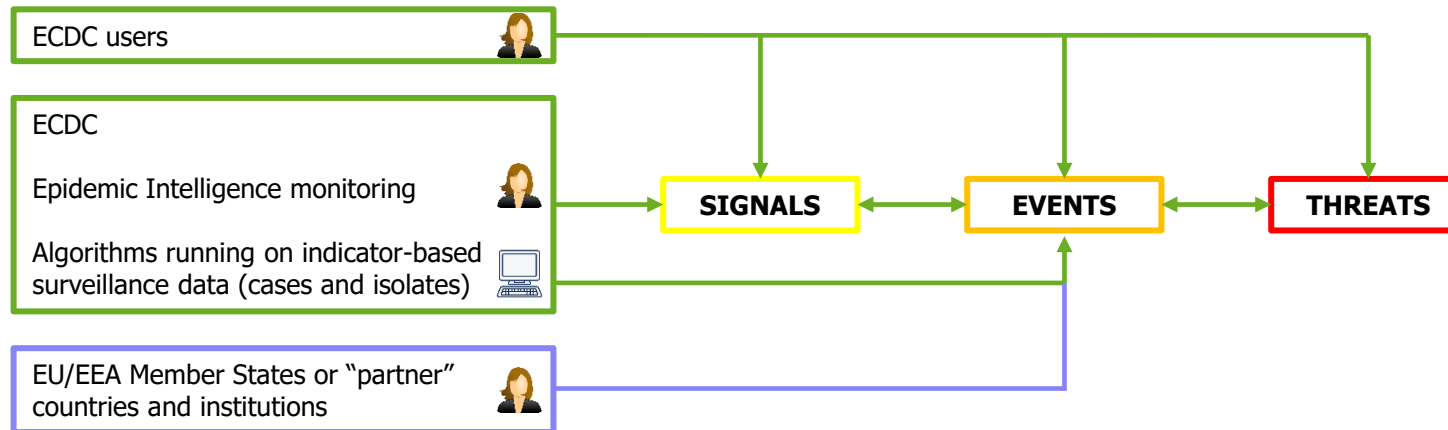
- According to their permissions, users can create an **Event**, a **Forum** or a **News item**
- An **Event** is defined as:
 - case(s)/cluster(s)/outbreak(s)/epidemiological situation(s)/incident(s)/public health risk situation(s),
 - detected in/reported by one or several countries,
 - that according to your assessment pose (or may pose) a public health risk for the EU/EEA.



2. Event-based surveillance in EpiPulse

When and how to post

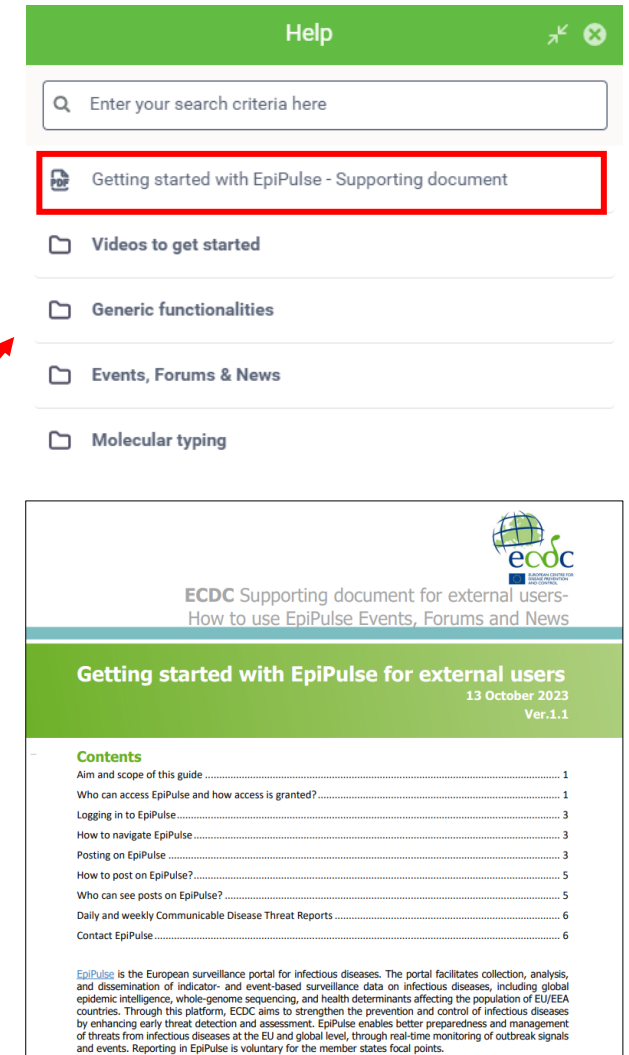
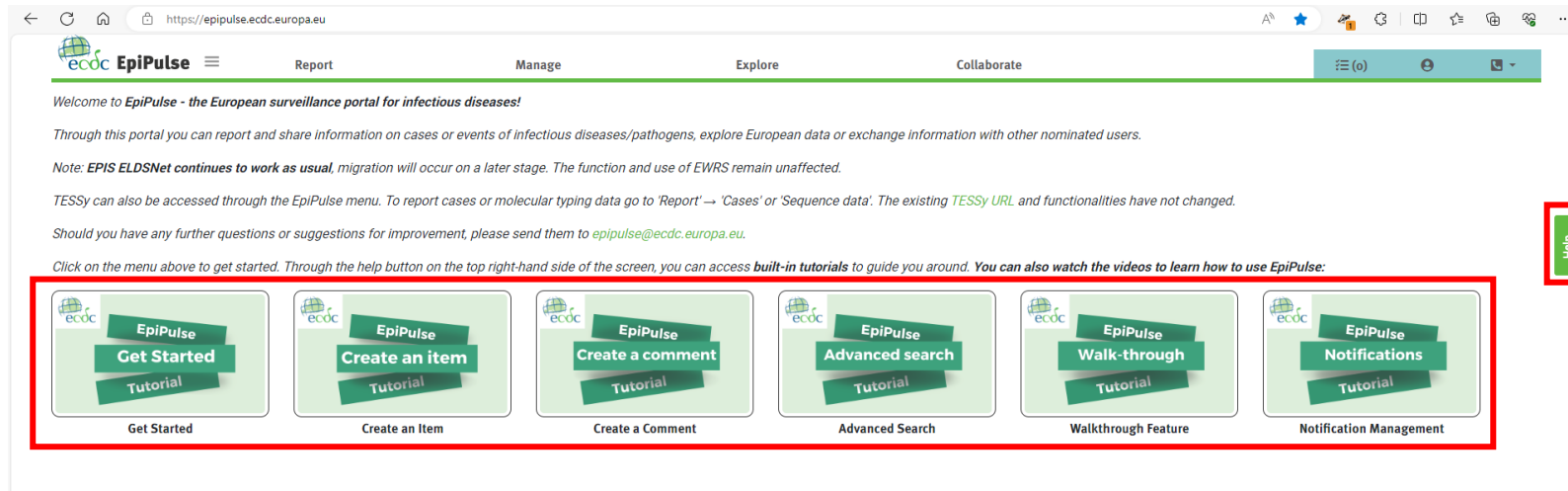
- According to their permissions, users can create an **Event**, a **Forum** or a **News item**
- An **Event** is defined as:
 - case(s)/cluster(s)/outbreak(s)/epidemiological situation(s)/incident(s)/public health risk situation(s),
 - detected in/reported by one or several countries,
 - that according to your assessment pose (or may pose) a public health risk for the EU/EEA.



- ECDC assesses all Events, summarising in the **Situation Awareness Summary**
- Should the Event be of concern within the mandate of ECDC and assessed as posing a public health risk for the EU/EEA, ECDC will re-classify the event as a **Threat**.
- In such cases, DG SANTE (Health Threats Unit - B2) are granted access to the Situation Awareness Summary but **cannot** see the initial post nor any comments from stakeholders.

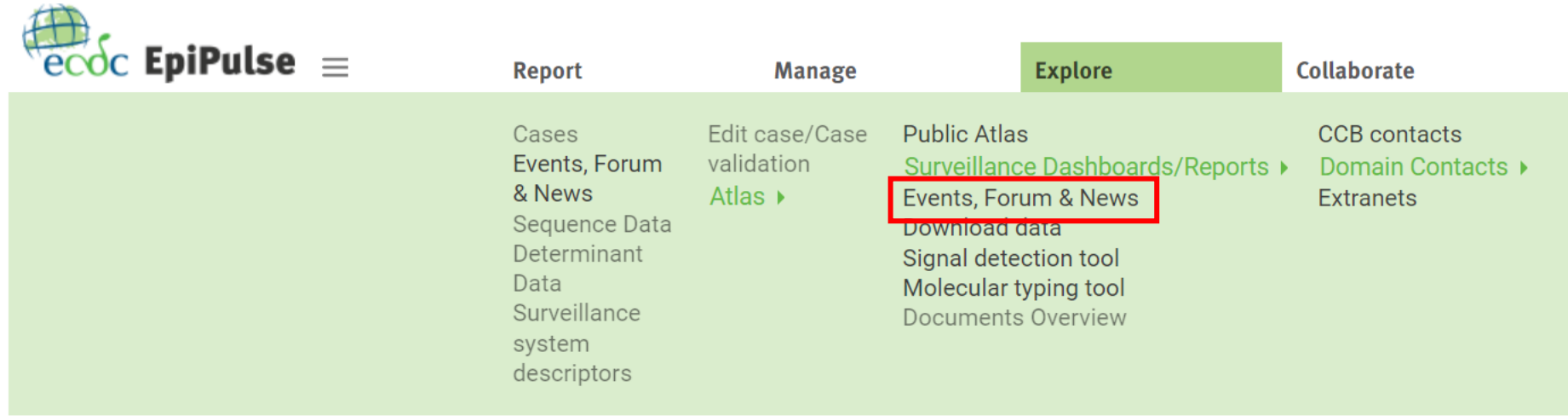
2. Event-based surveillance in EpiPulse

When and how to post



2. Event-based surveillance in EpiPulse

When and how to post



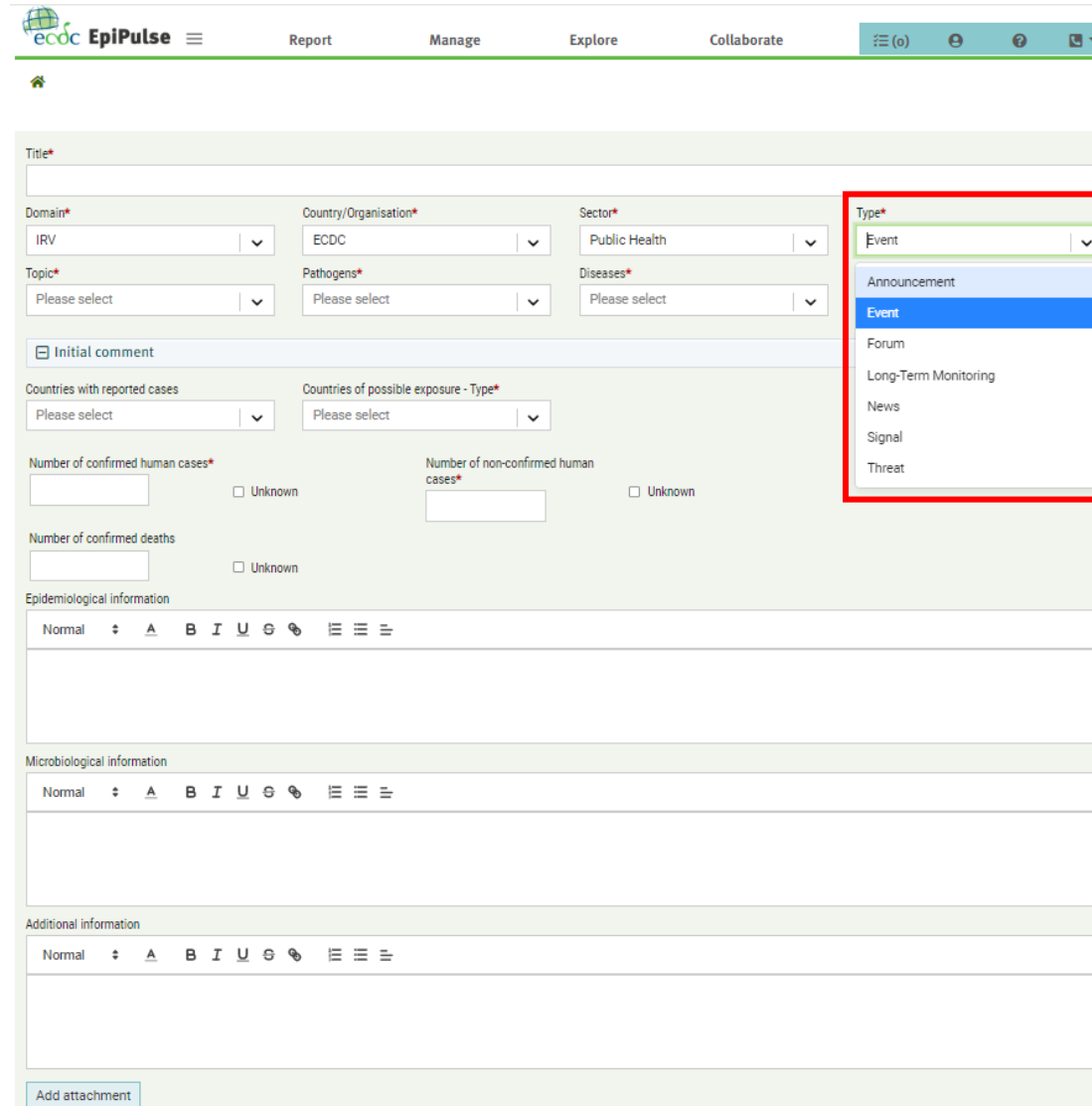
2. Event-based surveillance in EpiPulse

When and how to post

<div> <div>Create item</div> <div>Edit flags</div> <div></div> <div>Column visibility</div> <div>Show 25 rows</div> <div></div> <div></div> </div>						
	ID	Participating domain	Type	Title	Created by	Pathogens
<input type="checkbox"/>	2022-EIP-00013	VPD, FWD, EI, IRV, HIV, TB, SRV, HEP, EVD, ARHAI, PREP	Threat	Arrival of people displaced from Ukraine to the EU following Russia's aggression in Ukraine - Multistate – 2022	ECDC/Public Health	Not applicable
<input type="checkbox"/>	2022-IRV-00003	IRV	Event	SARS-CoV-2 BA.4/5 variant of interest (Omicron) - Multi country (EU/EEA) - 2022	ECDC/Public Health	Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2)
<input type="checkbox"/>	2018-EIP-00003	EI, PREP, IRV	Long-Term Monitoring	Influenza A(H5N6) – Multi country – Monitoring human cases	ECDC/Public Health	Avian influenza virus
<input type="checkbox"/>	2021-EIP-00019	EI, PREP, IRV	Long-Term Monitoring	Human cases of swine influenza A(H1N1)variant virus – Multi-country – 2022	ECDC/Public Health	Swine influenza virus

2. Event-based surveillance in EpiPulse

When and how to post



The screenshot displays the EpiPulse 'Report' form. The 'Type' dropdown menu is open, showing options: Event, Announcement, Forum, Long-Term Monitoring, News, Signal, and Threat. The 'Event' option is highlighted. The form includes fields for Title, Domain (IRV), Country/Organisation (ECDC), Sector (Public Health), Topic, Pathogens, Diseases, Initial comment, Countries with reported cases, Countries of possible exposure - Type, Number of confirmed human cases, Number of non-confirmed human cases, Number of confirmed deaths, Epidemiological information, Microbiological information, and Additional information. Each text area has a rich text editor toolbar.

Title*

Domain* IRV **Country/Organisation*** ECDC **Sector*** Public Health **Type*** Event

Topic* Please select **Pathogens*** Please select **Diseases*** Please select

☐ Initial comment

Countries with reported cases Please select **Countries of possible exposure - Type*** Please select

Number of confirmed human cases* ☐ Unknown **Number of non-confirmed human cases*** ☐ Unknown

Number of confirmed deaths ☐ Unknown

Epidemiological information

Normal

Microbiological information

Normal

Additional information

Normal

2. Event-based surveillance in EpiPulse

When and how to post

Item details

View access settings

⋮

< Previous

Next >

ID:

2022-IRV-00003

Type:

Event

Title:

SARS-CoV-2 BA.4/5 variant of interest (Omicron) - Multi country (EU/EEA) - 2022

Diseases:

Coronavirus disease 2019 (COVID-19)

Pathogen s:

Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2)

Participating domain:

IRV

Key information

Document workspace (contains 0 files in 0 spaces)

Situation Awareness

Comments

Links

Outputs (upcoming)

Visualisations

ECDC

Create/update comment

View history

📄

Item created on: 2022-04-07 14:02

Item last updated on: 2022-05-13 14:56

☐	Domain	Country / Organisation	Sector	NCC	NNC	NCD	Epidemiological information	Microbiological information
☑	IRV	ECDC	Public Health				ECDC has set up these functionalities in EpiPulse to support effective and timely information sharing. <ul style="list-style-type: none"> Are case clusters emerging in specific groups or settings? Is there any clinical information/epi analyses available in addition to 	<ul style="list-style-type: none"> Have any i Are t to is virus antig char expe so, c

Countries with reported cases

Please select

Countries of possible exposure - Type*

Please select

Number of confirmed human cases*

☐ Unknown

Number of non-confirmed human cases*

Number of confirmed deaths

☐ Unknown

Epidemiological information

Normal

A

B

I

U

S

🔗

☰

☷

☰

Microbiological information

Normal

A

B

I

U

S

🔗

☰

☷

☰

Additional information

Normal

A

B

I

U

S

🔗

☰

☷

☰

Add attachment

2. Event-based surveillance in EpiPulse

When and how to post

Example questions to consider:

1. What is the epidemiological setting for identified cases? (e.g. community, long term care facility)
2. Do cases have known underlying risk factors? (e.g. age, co-morbidities, immunocompromise)
3. What is the vaccination status of cases?
4. Did cases require hospital admission or supportive treatment? (e.g. antivirals, supportive oxygen)?
5. Is there recent travel history or known epidemiological link to travel-related cases, or other cases?
6. Is wider community transmission suspected?
7. Have any specific follow-up or control measures been applied?
8. Are additional lines of epidemiological investigation planned?
9. Is virus isolation and characterisation planned or under way? Are results available?
10. How representative (local, regional, national) is the data/information presented?
11. What is the short- (days/weeks), medium- (months) and long-term (years) trend in cases over time?
12. What challenges are you facing, and what support/information can ECDC/other countries offer?

2. Event-based surveillance in EpiPulse

Example workflow for EU/EEA country-initiated Events in EpiPulse

Step 1 - Detection

- Country identifies an Event

Step 2 - Reporting

- **Country checks if a related EpiPulse Event already exists** → Posts information as a Comment in reply
- If no existing Event, Country creates a new Event to share epidemiological information
- Please check whether the event you are posting meets the EWRS criteria and liaise with your country's EWRS focal point, if required.

Step 3 - Assessing

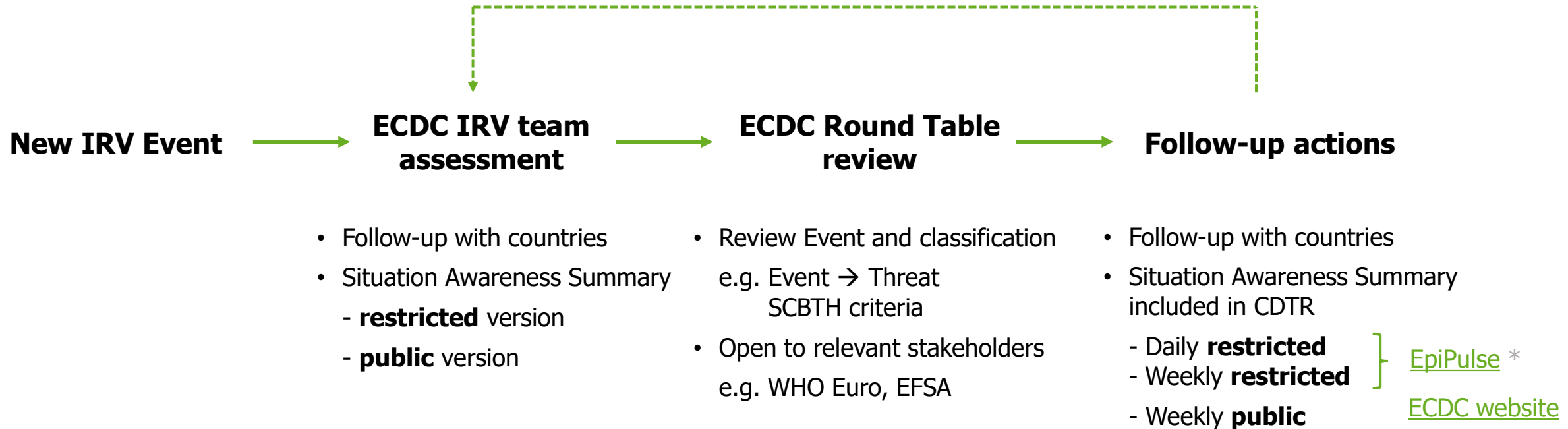
- ECDC reviews Event post and responses from other countries
- ECDC prepares Situation Awareness Summary

Step 4 - Notifying

- It may be helpful to include details about some events in ECDC's Communicable Disease Threat Report
- Where feasible, ECDC will consult with countries to ensure sensitive information is NOT disclosed

2. Event-based surveillance in EpiPulse

Role of ECDC Round Table and Communicable Disease Threat Reports (CDTR)



* Access to daily/weekly restricted CDTR is limited to nominated Epidemic Intelligence and Preparedness domains

2. Event-based surveillance in EpiPulse

Situation Awareness

Comments

Links

Outputs

Visualisations

ECDC

Summary (posted)

(Modified time: 2023-12-19 13:32)

Restricted version

View Posted Summary

Edit summary

Show differences

(posted)

(posted)

Executive Summary

- As of week 48, *Mycoplasma pneumoniae* detection trends continue to increase in the Netherlands.
- Surges of *M. pneumoniae* infections occur periodically, typically every one to three years. The disease is transmitted by close contact with an infected individual.
- The recent increases in observed detections may reflect the typical periodic recurrence of *M. pneumoniae* in the community and is potentially exacerbated by a three-year period of very limited transmission and detection of *M. pneumoniae* in the EU/EEA.
- Although cases of *M. pneumoniae* infection are not notifiable in most EU/EEA countries, it nevertheless remains important to continue monitoring the occurrence of atypical and/or severe forms of disease, or evidence of resistance to antibiotics.

- As of week 48, *Mycoplasma pneumoniae* detection trends continue to increase in the Netherlands.
- Surges of *M. pneumoniae* infections occur periodically, typically every one to three years. The disease is transmitted by close contact with an infected individual.
- The recent increases in observed detections may reflect the typical periodic recurrence of *M. pneumoniae* in the community and is potentially exacerbated by a three-year period of very limited transmission and detection of *M. pneumoniae* in the EU/EEA.
- Although cases of *M. pneumoniae* infection are not notifiable in most EU/EEA countries, it nevertheless remains important to continue monitoring the occurrence of atypical and/or severe forms of disease, or evidence of resistance to antibiotics.

Overview

Update

On 4 December, the Netherlands reported in EpiPulse a continuous increasing trend in *M. pneumoniae* detections by laboratories participating in the non-sentinel weekly virological surveillance network. As of week 48, 2023, *M. pneumoniae* detection trends continue to increase, reaching higher levels compared with the last four years. In addition, an increasing trend in patients consulting for pneumonia in patients aged 5-14 years has been observed from the national syndromic primary care surveillance system.

Summary

Six EU/EEA countries have reported recent increases in *M. pneumoniae* infections at the national level ([Denmark](#), [France](#), [Ireland](#), [the Netherlands](#), [Norway](#), [Sweden](#)) or in specific hospitals. Increases have been reported in all age groups but are predominantly observed in children and adolescents. Additionally, one country observed an increase in severe cases admitted to the intensive care unit. There are currently no reports of atypical strains or evidence of resistance to first-line macrolide antibiotics.

Background

Epidemics of *M. pneumoniae* occur periodically, typically every one to three years. Transmission requires close contact with an infected individual, with slow onset and often atypical respiratory symptoms once infected. Infections typically present with mild, self-limiting upper respiratory tract symptoms; however, patients presenting with prolonged or atypical, severe lower respiratory tract symptoms require antibiotic treatment.

Update

On 4 December, the Netherlands reported in EpiPulse a continuous increasing trend in *M. pneumoniae* detections by laboratories participating in the non-sentinel weekly virological surveillance network. As of week 48, 2023, *M. pneumoniae* detection trends continue to increase, reaching higher levels compared with the last four years. In addition, an increasing trend in patients consulting for pneumonia in patients aged 5-14 years has been observed from the national syndromic primary care surveillance system.

Summary

Six EU/EEA countries have reported recent increases in *M. pneumoniae* infections at the national level ([Denmark](#), [France](#), [Ireland](#), [the Netherlands](#), [Norway](#), [Sweden](#)) or in specific hospitals. Increases have been reported in all age groups but are predominantly observed in children and adolescents. Additionally, one country observed an increase in severe cases admitted to the intensive care unit. There are currently no reports of atypical strains or evidence of resistance to first-line macrolide antibiotics.

Background

Epidemics of *M. pneumoniae* occur periodically, typically every one to three years. Transmission requires close contact with an infected individual, with slow onset and often atypical respiratory symptoms once infected. Infections typically present with mild, self-limiting upper respiratory tract symptoms; however, patients presenting with prolonged or atypical, severe lower respiratory tract symptoms require antibiotic treatment.

Assessment

M. pneumoniae is not notifiable in most EU/EEA countries, leading to limited available information regarding diagnosed cases, proportion of detections amongst respiratory laboratory samples, or historical detection data. As a result, making country-level comparisons should be done with caution.

M. pneumoniae epidemics occur cyclically in Europe every one to three years. Various factors contribute to this cyclical pattern, such as the decline of population immunity over time or the introduction of new strains into the population. The reported increases are observed following a three-year period of very limited transmission and detection of *M. pneumoniae* in the EU/EEA, following widespread implementation of non-pharmaceutical measures during the COVID-19 pandemic, resulting in reduced population immunity, particularly amongst those with little or no pre-existing exposures to *M. pneumoniae*.

There are currently no reports of atypical *M. pneumoniae* strains or resistance to first-line macrolide antibiotics from reporting countries. However, it remains important for countries to monitor and report the occurrence of atypical and/or severe forms of disease, evidence of resistance to antibiotics, and pressure on the healthcare system related to *M. pneumoniae* cases as winter progresses and the combined burden of respiratory pathogens increase.

M. pneumoniae is not notifiable in most EU/EEA countries, leading to limited available information regarding diagnosed cases, proportion of detections amongst respiratory laboratory samples, or historical detection data. As a result, making country-level comparisons should be done with caution.

M. pneumoniae epidemics occur cyclically in Europe every one to three years. Various factors contribute to this cyclical pattern, such as the decline of population immunity over time or the introduction of new strains into the population. The reported increases are observed following a three-year period of very limited transmission and detection of *M. pneumoniae* in the EU/EEA, following widespread implementation of non-pharmaceutical measures during the COVID-19 pandemic, resulting in reduced population immunity, particularly amongst those with little or no pre-existing exposures to *M. pneumoniae*.

There are currently no reports of atypical *M. pneumoniae* strains or resistance to first-line macrolide antibiotics from reporting countries. However, it remains important for countries to monitor and report the occurrence of atypical and/or severe forms of disease, evidence of resistance to antibiotics, and pressure on the healthcare system related to *M. pneumoniae* cases as winter progresses and the combined burden of respiratory pathogens increase.

Actions


ECDC continues to monitor the situation. Countries are encouraged to continue reporting to EpiPulse with additional information: [2023-IRV-00008](#). In particular, countries with laboratory systems that routinely screen respiratory samples for *M. pneumoniae* are encouraged to report current and historic trend data for detections, as well as strain characterisation and antibiotic susceptibility data, if available.

ECDC continues to monitor the situation. Countries are encouraged to continue reporting to EpiPulse with additional information: [2023-IRV-00008](#). In particular, countries with laboratory systems that routinely screen respiratory samples for *M. pneumoniae* are encouraged to report current and historic trend data for detections, as well as strain characterisation and antibiotic susceptibility data, if available.

2. Event-based surveillance in EpiPulse

EpiPulse vs EWRS

- EpiPulse and EWRS are **complementary platforms**.
- Please check if the event you are posting meets EWRS criteria and liaise with your country's EWRS focal point, if needed.
- Development work is ongoing to harmonise the experience across the two platforms.

		EWRS
Owner	ECDC	European Commission
Objective of the platform	Risk assessment	Risk management
Notification	Biological	All hazards SCBTH
Type of notification	Informal	Formal

2. Event-based surveillance in EpiPulse

The value of timely positive or negative findings in country replies

- When an Event is posted by Country A, e.g. observing an atypical outbreak or trend in detections
 - Country B may post a response, confirming that they have made similar observations
- It is extremely helpful during ECDC's assessment to receive timely
 - **positive findings** from other countries
 - **negative findings** from other countries, in particular neighbouring countries
 - updates about **ongoing investigations**
- This facilitates more effective and informed assessment

3. Review of IRV domain EpiPulse use in 2023

Examples of effective EpiPulse use

[2023-IRV-00002](#) Severe cases of influenza B among young persons

[2023-IRV-00008](#) Increase in respiratory infections due to Mycoplasma pneumoniae in the EU/EEA during the season 2023/2024

- Original Event post featured comprehensive epidemiological and microbiology information
- Prompt and comprehensive replies from additional countries
- Continuous updates to the Event with additional information
- Use of attachments for visual information

3. Review of IRV domain EpiPulse use in 2023

Long-Term Monitoring

All ARHAI EI LEGI EVD FWD HEP HIV **IRV** PREP SoHo SRV STI TB VPD Resp. duty Daily CDTR Weekly CDTR

Search by text in Please select **Q** Announcement Event Forum **Long-Term Monitoring** News Signal Threat Closed Discarded Open

Advanced search criteria

Create item Create output Edit flags Column visibility Show 25 rows

	ID	Participating domain	Type	Title	Created by	Pathogens	Diseases
<input type="checkbox"/>	2022-EIP-00072	PREP, EI, IRV	Long-Term Monitoring	Human cases of influenza virus A(H1N1) variant of swine origin - Multi-country - 2024	ECDC/Public Health	Swine influenza virus	Influenza, swine
<input type="checkbox"/>	2023-EIP-00071	IRV, EI, PREP	Long-Term Monitoring	Human cases of swine influenza A(H1N1) variant virus - Multi-country - 2023	ECDC/Public Health	Swine influenza virus	Influenza, swine
<input type="checkbox"/>	2021-EIP-00047	IRV, EI, PREP	Long-Term Monitoring	Human cases with swine influenza A(H1N2) variant virus - Multi country - 2023	ECDC/Public Health	Swine influenza virus	Influenza, swine
<input type="checkbox"/>	2021-EIP-00027	IRV, EI, PREP	Long-Term Monitoring	Human cases with swine influenza A(H3N2)variant virus - Multi-country	ECDC/Public Health	Swine influenza virus	Influenza, swine
<input type="checkbox"/>	2005-EIP-00099	IRV, EI, PREP	Long-Term Monitoring	Influenza A(H5N1) - Multi-country (World) - Monitoring human cases	ECDC/Public Health	Avian influenza virus	Influenza, avian
<input type="checkbox"/>	2018-EIP-00003	IRV, EI, PREP	Long-Term Monitoring	Influenza A(H5N6) - Multi country - Monitoring human cases	ECDC/Public Health	Avian influenza virus	Influenza, avian
<input type="checkbox"/>	2019-EIP-00007	IRV, EI, PREP	Long-Term Monitoring	Influenza A(H9N2) - Multi-country (World) - Monitoring human cases	ECDC/Public Health	Avian influenza virus	Influenza, avian
<input type="checkbox"/>	2012-EIP-00049	IRV, EI, PREP	Long-Term Monitoring	Middle East respiratory syndrome coronavirus (MERS-CoV) - Multi-country	ECDC/Public Health	Middle East respiratory syndrome-related coronavirus (MERS-CoV)	Middle Eastern Respiratory Syndrome (MERS)
<input type="checkbox"/>	2023-IRV-00007	IRV	Long-Term Monitoring	Overview of respiratory virus epidemiology in the EU/EEA	ECDC/Public Health	Respiratory Syncytial Virus, Seasonal Influenza virus (type A, B or C), Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2)	Coronavirus disease 2019 (COVID-19), Influenza, seasonal, Respiratory syncytial virus infection

Forum / News

- Forum provides a place for discussion around any scientific topic
- News provides a space to share other interesting information
- Neither used in 2023

Thank you

Questions?

General EpiPulse feedback and technical issues - EpiPulse@ecdc.europa.eu

IRV-specific issues - ECDC.Influenza@ecdc.europa.eu