EpiPulse Cases

Vaccine Preventable Diseases (VPD) Reporting Protocol 2024

Mumps, Pertussis, Poliomyelitis and Tetanus

Surveillance data for 2023

Contents

Introduction

This reporting protocol describes the reporting of 2024 measles and rubella cases to **EpiPulse Cases**, which is replacing TESSy.

Please note:

- Since February 2023, the reporting of diphtheria is described in a separate reporting protocol: Diphtheria, Reporting Protocol 2023, Version 1.0.
- The Vaccine Preventable Diseases (VPD) reporting protocol 2024 describes reporting of: pertussis, mumps, poliomyelitis and tetanus.
- The Invasive Bacteria Diseases (IBD) reporting protocol 2024 describes reporting of: invasive H. influenzae disease, invasive meningococcal disease, Neisseria Meningitidis isolates, and invasive pneumococcal disease.

Reporting protocols are data collection guidelines for the data managers of reporting countries and the protocol design is intended to improve user-friendliness by:

- introducing a uniform structure to make it easier for data managers to find data collection information across different subjects;
- removing information which is not relevant for data managers.

Similarly, the surveillance protocol will contain some of the generic information previously contained in the reporting protocols.

Since the data managers in reporting countries often have multiple roles, subject-specific material is sometimes distributed together with a reporting protocol. To maintain the uniform structure, this type of material is now included in Annex 2.

How to use this document

This reporting protocol provides information for the data managers of reporting countries in three main sections:

- Reporting to EpiPulse Cases which contains guidelines on how to prepare data for submission to EpiPulse Cases, deadlines, subject-specific information (e.g. new changes to metadata), and links to further information.
- Annex 1 which contains:
  - the metadata set for the subject(s) covered by this reporting protocol.
  - a list of metadata changes for the subject(s) covered by this reporting protocol.
- Annex 2 which contains subject-specific material relevant for distribution with the reporting protocol.

Finding further information

Updated links to all the schedules, documentation and training materials mentioned in this reporting protocol are included in the Documentation and Help pages, including links to:

- EpiPulse Cases Metadata
- TESSy Metadata sets and change history
- EpiPulse Cases Machine to Machine Technical Documentation
- Tutorials for data transformation using respectively Excel and Access

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Reporting to EpiPulse Cases

In September 2024 EpiPulse Cases is expected to go live. We have built it as a replacement for TESSy, with the aim of improving the process of reporting, reviewing, and updating surveillance data.

Only Vaccine-Preventable Diseases will be reported to EpiPulse Cases in 2024, all other diseases will continue to be reported to TESSy for now.

This section provides both an overview of the EpiPulse Cases reporting process and tips on where you can find useful information.

The overall process is as follows:

- Familiarise yourself with the data collection deadlines.
- Prepare (export and transform) your data.
- Check that your data complies with the EpiPulse Cases metadata.
- Check that your data sources are up to date.
- Submit your file(s) to EpiPulse Cases.
- Finalise and approve your submission.

Checking the data collection schedule

A link to the current data collections schedule can be found in the Communication section of the 'Documentation and Help' pages.

Preparing data

After you have exported the data from your national database, you need to ensure that the data are in a format that EpiPulse Cases can accept. EpiPulse Cases accepts only CSV and XML files, optionally ZIP-compressed. The EpiPulse Cases metadata has been developed from the TESSy Metadata, with the aim to make only the minimal number of changes necessary, and to hopefully provide a better experience when reporting your datasets to ECDC.

Specific guidelines for measles and rubella data collection and preparation for EpiPulse Cases are provided in Annex 1 and Annex 2.

Checking metadata

The metadata defines the fields and data formats that are valid as input to EpiPulse Cases for a given subject. The EpiPulse Cases metadata includes a section that compares and highlights the changes between TESSy and EpiPulse Cases, to facilitate the transition.

As the requirements for data to be shared among ECDC Stakeholders can change, the data format changes needed to support the new requirements are identified and agreed upon between the National Surveillance Contact Points, the Network Coordination Groups and ECDC's Disease Experts. These changes are then implemented to the EpiPulse Cases metadata.

Changes to the metadata for the subject of this reporting protocol are described in Annex 1.

It is especially important to focus on:

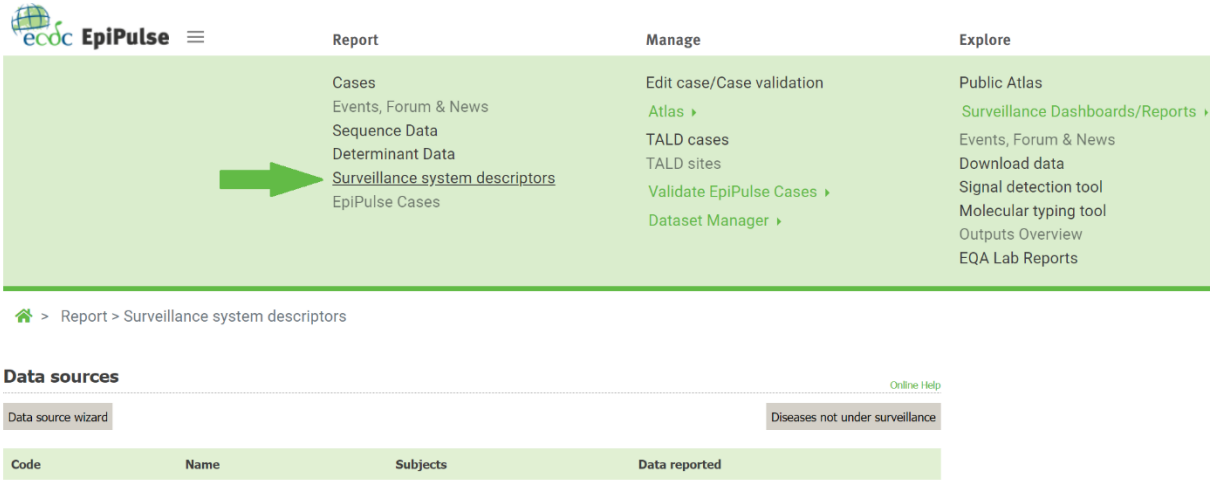
- **Field formats**
  Many fields require the data to be formatted in a specific way. For example, dates must be in the YYYY-MM-DD format; dates in the DD/MM/YYYY format will be rejected.
- **Reference Values (the equivalent of TESSy Coded Values)**
  Some fields only permit the use of specific values (reference values). For example, **M**, **F** or **OTH** are the coded values for 'Gender' and any other value in a 'Gender' field will be rejected. Please note that **UNK** is no longer a valid code, you may leave the field empty instead.

The EpiPulse Cases metadata Excel file contains all the definitions and rules necessary to format data correctly. The READ ME sheet of the Excel document explains how to work with the metadata. It can be downloaded from the Technical Guidelines & Tools section of the 'TESSy Help & Docs' pages.

Filtering the fields in the file by subject will enable you to see the fields required for your subject and the rules that apply to these fields.

Checking your Surveillance System Descriptors

Before submitting file(s), please review your data source(s) in EpiPulse (in the menu, go to 'Report' -> 'Surveillance systems descriptors') and update the information as necessary.



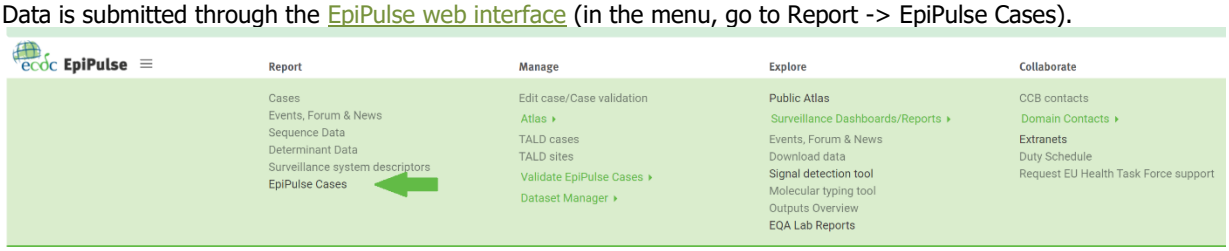
Complete and up-to-date data source information for each subject is important for improving the interpretation of data - each surveillance system has different features that need to be taken into account when comparing data European level.

If your data source information is out-of-date and you do not have access rights to update it, please ask your National Focal Point for Surveillance or National Coordinator to do so.

Information on data sources is available in the TESSy User Guide, as this functionality is still only available through TESSy.

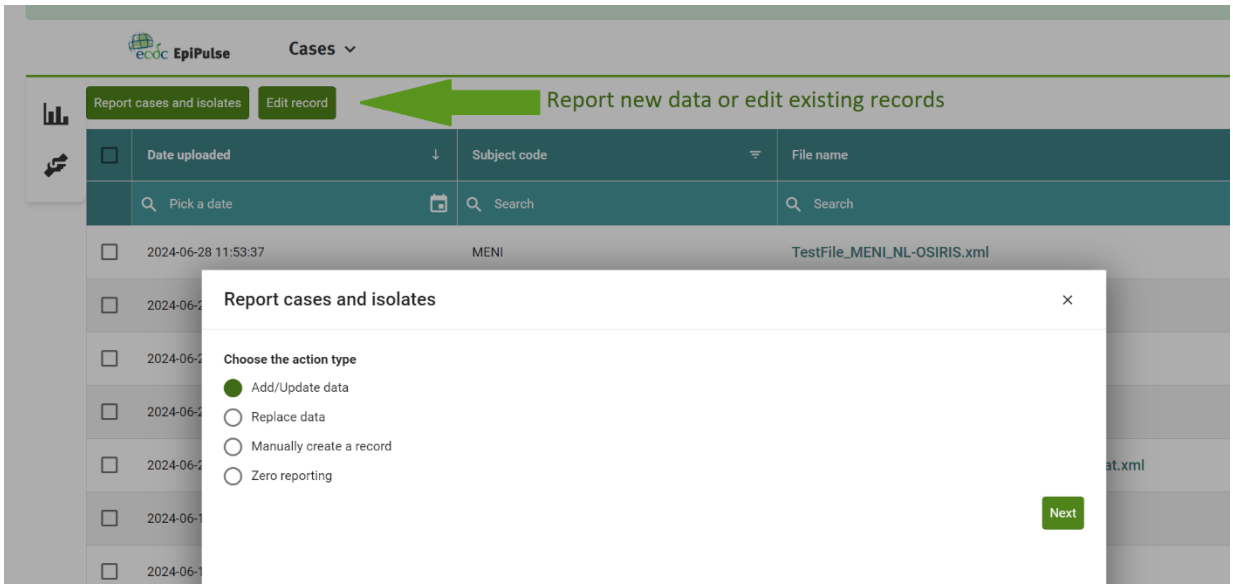
Uploading your data

Data is submitted through the EpiPulse web interface (in the menu, go to Report -> EpiPulse Cases).

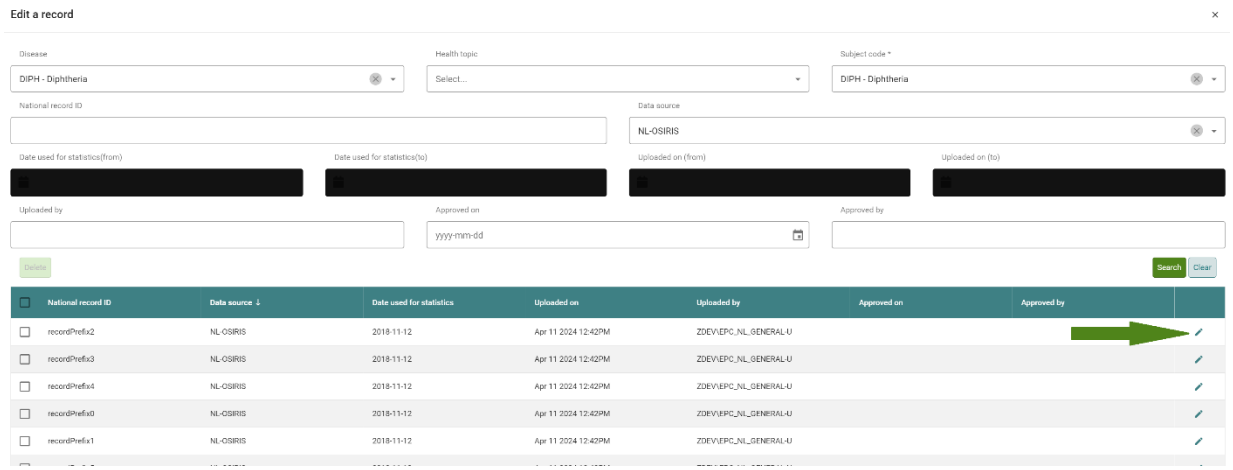


The visual interface for reporting new data and editing existing records has remained very similar to that of TESSy. For those of you that are also responsible for reporting diseases outside of the Vaccine Preventable Diseases group, you will continue to use TESSy (under EpiPulse) in parallel with the new EpiPulse Cases, until all disease groups will have been migrated to the new tool.

Similar to TESSy, you can Add/Update or Replace data with new uploads, using either CSV or XML files. You can also manually create records for some diseases, and report zero cases where appropriate.



The functionality for manually editing existing records is also a familiar experience. Search for the record you wish to edit, and modify the existing information as needed.



Finalising your submission

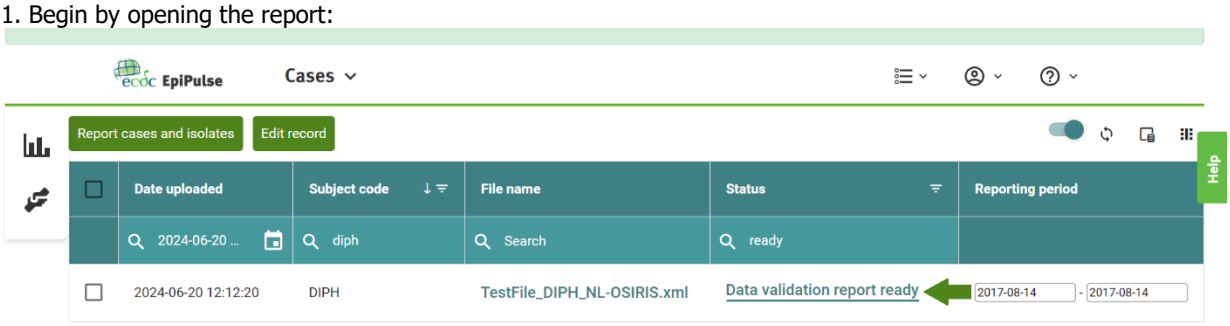
The compliance of your data with the validation rules in the metadata is checked automatically during the data upload process. In EpiPulse Cases this process is called "Technical Validation", and it is the only step where your upload can be rejected, for severe data quality issues, such as the file format not being readable by the system, or (one of the few) mandatory variables having missing values.

If your file has been rejected, there will be a message explaining each instance of non-compliance with the metadata that needs correcting.

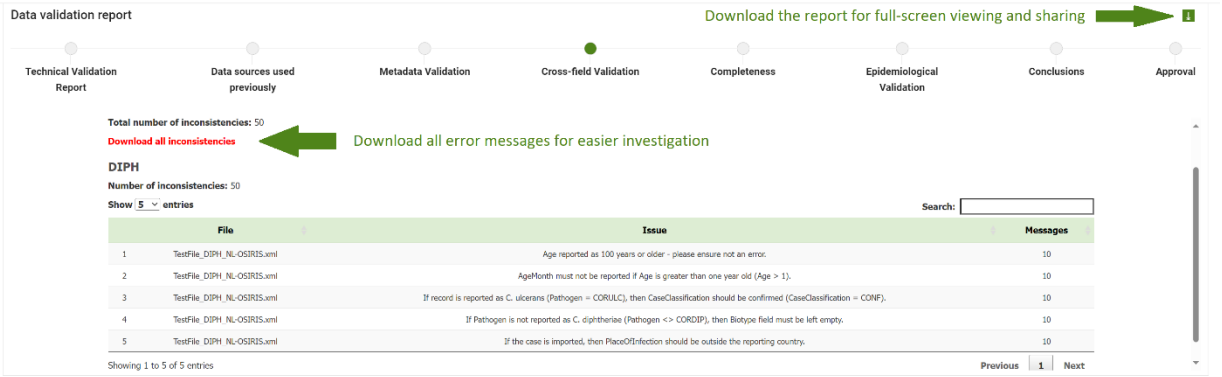
The significant new feature in EpiPulse Cases is the Data Validation Report, which puts your data in the context of the already existing information for the same disease, and provides you with a detailed overview of the new data in the file you have just uploaded, as well as the resulting overall epidemiological situation painted by the existing (past) data together with the newly uploaded file(s). This means much more timely feedback on your uploads, including details on data quality, as well as outputs (graphs, charts, and tables) on some of epidemiological indicators. The Data Validation reports will evolve and grow based on your feedback in collaboration with our Disease Experts. These reports will provide a new and better way of understanding and updating the information collected at European level, and will hopefully increase the quality and timeliness of the data, while reducing workloads.

Below you can find a few screenshots of the Data Validation Report.

1. Begin by opening the report:



2. View the report in a window, download the list of eventual validation messages, or download the report



3. Check data completeness; both for the new upload, and in the context of historical data

Completeness

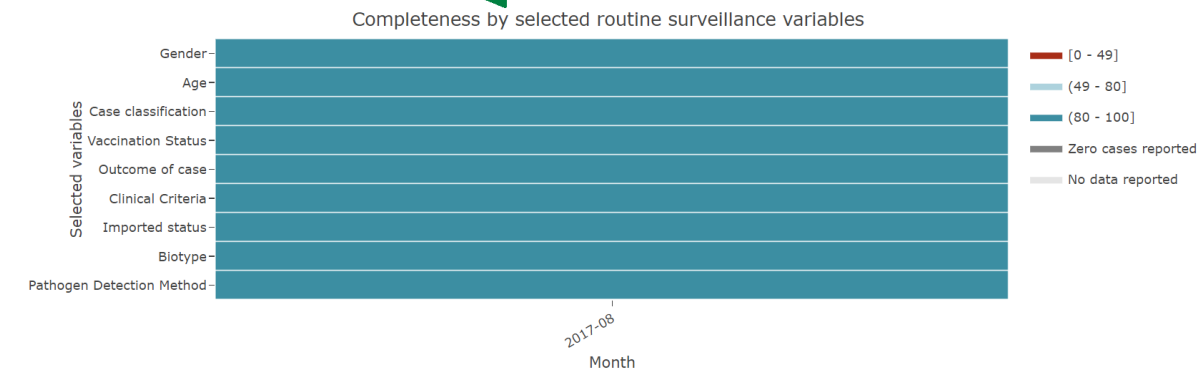
Diphtheria

Period of analysis: 2016-08 to 2018-08 (data from 2016-08-01 to 2018-08-31)

Number of records included: 27

Number of records excluded (incompatible date resolution): 0

New and historical data combined | New data submitted



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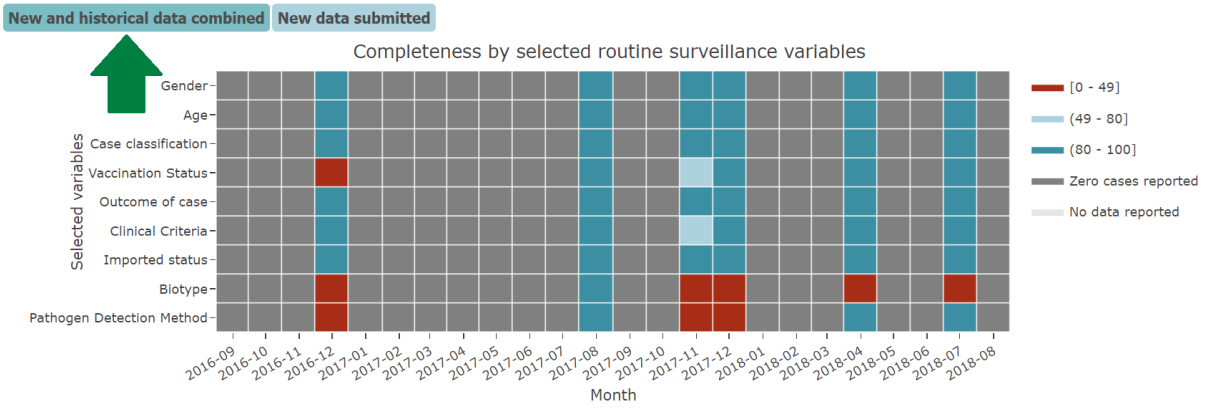
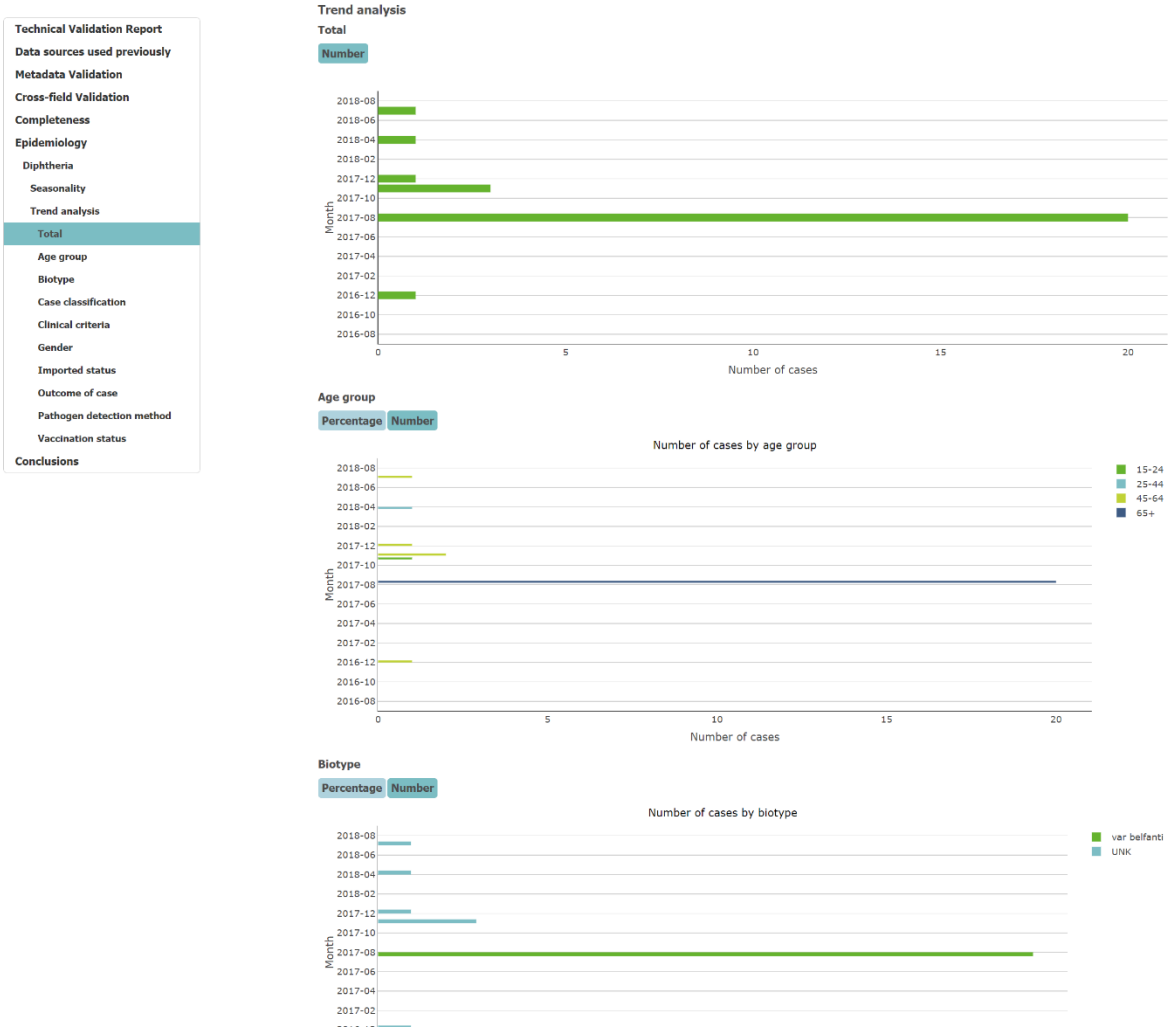
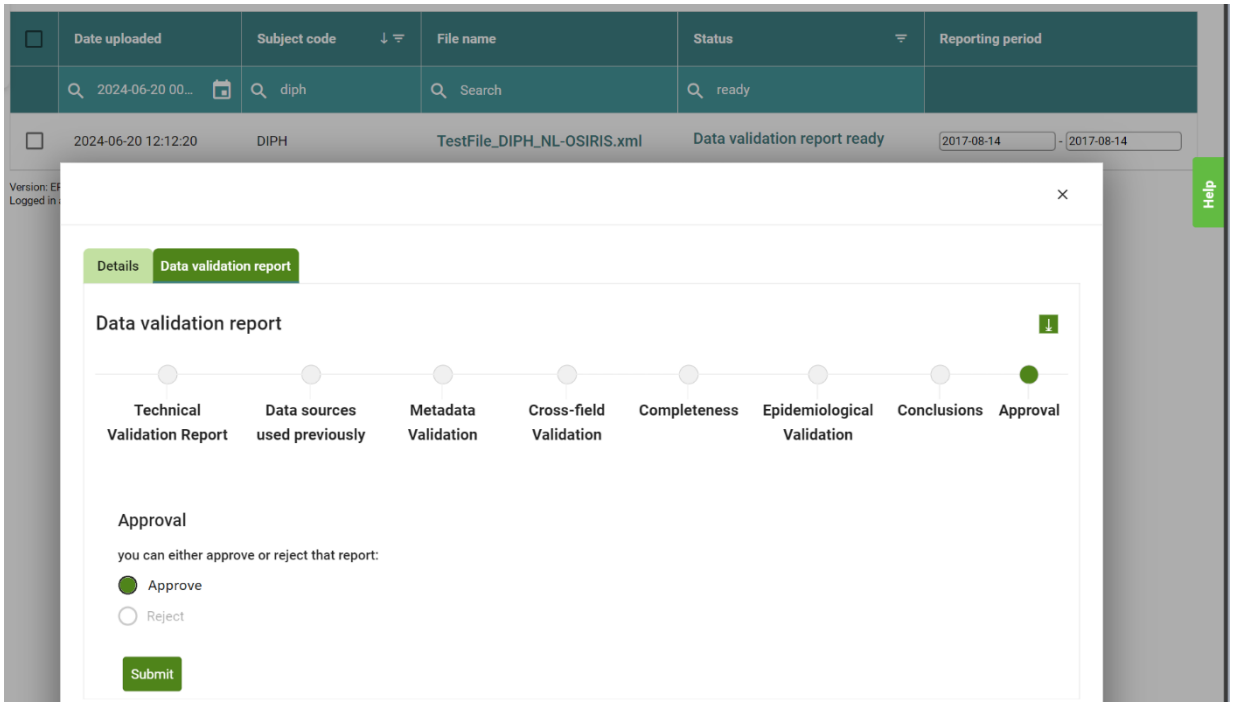


4. The downloaded report can be opened full screen for easier viewing and navigation. This is a preview of the currently developed epidemiological indicators/stratifications.



5. After reviewing the information in the Data Validation Report you can choose to approve or reject it.



If you choose to reject it, no data will be saved in the EpiPulse Cases system, but your file will remain visible should you wish to re-download it, or resubmit it for a new Data Validation at a later date or after further checks. Please check the Epi Validation Report carefully, there might be warnings and remarks relating to possible data quality issues or potential overwriting of existing records that you should consider.

When your file has been validated and you are satisfied that all corrections have been made, please ensure prompt approval or rejection. Unapproved uploads can block the approval of other related uploads.

EpiPulse Cases Helpdesk

Email: EpiPulseCases@ecdc.europa.eu

Telephone number: +46-(0)8-5860 1601

Availability: 9:00 – 16:00 Stockholm time, Monday to Friday (except ECDC holidays)

Annex 1. VPD metadata

This section describes:

- *The VPD metadata set*
- *Changes to the VPD metadata*

VPD metadata set

Current subject codes

Table 1 shows the subject codes (formerly 'record types') to be used when reporting 2023 VPD surveillance data to Epipulse Cases (EPC). Cases should be reported according to the relevant EU Case Definition[1].

We strongly encourage **case-based reporting**. If case-based data are not available, aggregated data may be reported.

Table 1: VPD subject codes

Disease	Case-based subject code	Aggregated subject code
Mumps	MUMP	MUMPAGGR
Pertussis	PERT	PERTAGGR
Poliomyelitis	POLI	POLIAGGR
Tetanus	TETA	TETAAGGR

Comment: An aggregated format called "AGGRVPD" was available for mumps and pertussis since 2013. This format was the same as the "AGGR" format, but with "Vaccination Status" as an additional variable. From 2024, with the move from TESSy reporting to Epipulse Cases, aggregated subject codes MUMPAGGR, PERTAGGR, POLIAGGR and TETAAGGR have been launched.

Case-based reporting

The metadata set has variables that are common across all the Vaccine Preventable Diseases (VPD): mumps (MUMP), pertussis (PERT), poliomyelitis (POLI) and tetanus (TETA), which are summarised in Table 2. Disease-specific variables (in addition to the common variables) are subsequently summarised in Table 3 (MUMP), Table 4 (PERT), Table 5 (POLI) and Table 6 (TETA).

[1] EU case definitions (europa.eu)

Table 2: Case-based metadata common across VPD data (subject codes: MUMP, PERT, POLI, TETA)

Variable	Description	Coded value list
Age	Age of patient in years as reported in the national system at the time of disease onset.	
CaseClassification	Case classification according to EU case definition.	CONF = Confirmed POSS = Possible PROB = Probable
DataSource	The data source (surveillance system) that the record originates from. The DataSource value must be a special reference value from EpiPulse Cases metadata.	Consult the reference values in mdDataSource dataset
DateOfLastVaccination	Date of administration of the last vaccination dose - indicates the date when the last dose of vaccine was given before disease onset (if exact date is not known, then provide month or year).	
DateOfNotification	Date when the case report is first notified to public health authorities.	
DateOfOnset	Date of onset of disease. Leave empty for asymptomatic cases.	
DateUsedForStatistics	The reference date used for standard reports that is compared to the reporting period. The date used for statistics can be any date that the reporting country finds applicable, e.g. date of notification, date of diagnosis or any other date.	
Disease	The code of the disease that is being reported.	MUMP = Mumps PERT = Pertussis POLI = Poliomyelitis TETA = Tetanus
Gender	Gender of the reported case.	F = Female M = Male OTH = Other
NationalRecordId	Unique identifier for each record within and across the specified surveillance system (data source) – selected and generated by the country reporting the record.	
Outcome	Information on whether the case is alive or deceased. The death should be due to the reported disease.	A = Alive D = Died
PlaceOfNotification	Place of the first notification of the case to a regional authority. Select the most detailed NUTS level possible.	Consult the reference values in mdLocation dataset
PlaceOfResidence	Place of residence of patient at the time of disease onset. Select the most detailed NUTS level possible.	Consult the reference values in mdLocation dataset
ReportingCountry	The country reporting the record.	Consult the reference values in mdLocation dataset
Status	The Status value is used to provide the functionality for a record within EpiPulse Cases database. Default value: NEW/UPDATE. If set to DELETE, the record with the specified NationalRecordId is deleted (invalidated) from EpiPulse Cases database, if it exists. If set to NEW/UPDATE, the record is inserted into the database: If the same NationalRecordId already exists for the same data source and subject code, then the current submitted record updates (replace) the existing one.	DELETE = Delete a previously reported record. NEW/UPDATE = Update a previously reported record (default).
SubjectCode	SubjectCode is a reporting model for a disease/health topic - identifies the reporting structure and format of a record (case based or aggregate reporting).	MUMP = Mumps PERT = Pertussis POLI = Poliomyelitis TETA = Tetanus

VaccinationStatus	Indicates if the case is vaccinated and number of vaccine doses received.	10DOSE = 10 doses 1DOSE = 1 dose 2DOSE = 2 doses 3DOSE = 3 doses 4DOSE = 4 doses 5DOSE = 5 doses 6DOSE = 6 doses 7DOSE = 7 doses 8DOSE = 8 doses 9DOSE = 9 doses NOTVACC = Not vaccinated UNKDOSE = Vaccinated, dose unknown

Table 3: Case-based metadata – additional MUMP-specific variables

Variable	Description	Coded value list
AgeMonth	Age of patient in months as reported in the national system for cases < 2 years of age at the time of disease onset.	
ClinicalCriteria	Clinical presentation of the disease according to EU case definition.	MENI = Meningitis/Meningeal/ Meningoencephalitic ORCH = Orchitis OTH = Other PAROT = Swelling of the parotid gland
ClusterId	Unique identifier of the cluster as provided by the country epidemiologist.	
ClusterRelated	Is the case part of an outbreak/cluster?	0 = No 1 = Yes
ClusterSetting	Setting of the cluster (for epidemiologically-linked cases).	CHILDCARE = Kindergarten or child care FAM = Family MIL = Military NOS = Nosocomial (hospital) OTH = Other SCH = School SPORT = Sports team UNI = University
ComplicationDiagnosis	Complications of mumps. Can be repeated if several complications have occurred.	ENCEPH = Encephalitis MENI = Meningitis NONE = None ORCH = Orchitis OTH = Other PANC = Pancreatitis
Genotype	Mumps virus genotype.	MUMPV_A = Mumps virusGenotype A MUMPV_B = Mumps virusGenotype B MUMPV_C = Mumps virusGenotype C MUMPV_D = Mumps virusGenotype D MUMPV_F = Mumps virusGenotype F MUMPV_G = Mumps virusGenotype G MUMPV_H = Mumps virusGenotype H

		MUMPV_I = Mumps virusGenotype I MUMPV_J = Mumps virusGenotype J MUMPV_K = Mumps virusGenotype K MUMPV_L = Mumps virusGenotype L MUMPV_N = Mumps virusGenotype N
Hospitalisation	History of hospitalisation due to the disease or related complications. Hospitalisation defined as at least one overnight stay.	0 = No 1 = Yes

Table 4: Case-based metadata – additional PERT-specific variables

Variable	Description	Coded value list
AgeMonth	Age of patient in months as reported in the national system for cases < 2 years of age at the time of disease onset.	
GestationalAgeAtVaccination	If mother vaccinated during pregnancy, at what gestational age (in weeks).	
Hospitalisation	History of hospitalisation due to the disease or related complications. Hospitalisation defined as at least one overnight stay.	0 = No 1 = Yes
PathogenDetectionMethod	Pathogen detection method used to diagnose the case. More than one method can be reported.	CULT = Culture ORALIgG = IgG in oral fluid PCR = PCR confirmation SERO = Serology
VaccinationStatusMaternal	Vaccination status of mother during pregnancy for cases < 2 years of age at the time of disease onset.	0 = No 1 = Yes

Table 5: Case-based metadata – additional POLI-specific variables

Variable	Description	Coded value list
DateOfDiagnosis	First date of clinical or lab diagnosis. In case the DateOfOnset is missing this date is used for analysis.	

Table 6: Case-based metadata – additional TETA-specific variables

Variable	Description	Coded value list
DateOfDiagnosis	First date of clinical or lab diagnosis. In case the DateOfOnset is missing this date is used for analysis.	

Aggregated reporting

Please refer to Table 7 to see the format for aggregated reporting of VPD data. If only a few variables can be reported, it is recommended to give the following priority for reporting: AgeGroup, Classification, VaccStatus, Gender.

Table 7: Aggregate metadata for reporting of VPD data (subject codes: MUMPAGGR, PERTAGGR, POLIAGGR, TETAAGGR)

Variable	Description	Coded value list

AgeGroup	Age group of the reported record.	*See Table 8 below.*
CaseClassification	Case classification according to EU case definition.	CONF = Confirmed POSS = Possible PROB = Probable
DataSource	The data source (surveillance system) that the record originates from. The DataSource value must be a special reference value from EpiPulse Cases metadata.	Consult the reference values in mdDataSource dataset
DateUsedForStatistics	The reference date used for standard reports that is compared to the reporting period. The date used for statistics can be any date that the reporting country finds applicable, e.g. date of notification, date of diagnosis or any other date.	
Disease	The code of the disease that is being reported.	MUMP = Mumps PERT = Pertussis POLI = Poliomyelitis TETA = Tetanus
Gender	Gender of the reported record.	F = Female M = Male OTH = Other
NumberOfCases	Total number of cases during the reported period for the specified disease.	
ReportingCountry	The country reporting the record.	Consult the reference values in mdLocation dataset
SubjectCode	SubjectCode is a reporting model for a disease/health topic - identifies the reporting structure and format of a record (case based or aggregate reporting).	MUMP = Mumps PERT = Pertussis POLI = Poliomyelitis TETA = Tetanus
VaccinationStatus (MUMPAGGR / POLIAGGR)	Indicates if the case is vaccinated and number of vaccine doses received.	1DOSE = 1 dose 2DOSE = 2 doses 3DOSE = 3 doses 4DOSE = 4 doses NOTVACC = Not vaccinated UNKDOSE = Vaccinated, dose unknown
VaccinationStatus (PERTAGGR / TETAAGGR)	Indicates if the case is vaccinated and number of vaccine doses received.	1DOSE = 1 dose 2DOSE = 2 doses 3DOSE = 3 doses 4DOSE = 4 doses 5DOSE = 5 doses 6DOSE = 6 doses NOTVACC = Not vaccinated UNKDOSE = Vaccinated, dose unknown

Table 8: Age categories compatible with aggregate VPD reporting *

Option	Variable	Narrative description	Coded value in TESSy of the variable AgeClass
1 (preferred)	AgeGroup	<1 year 1-4 years 5-9 years 10-14 years 15-19 years 20-24 years 25-29 years 30-34 years 35-39 years 40-44 years 45-49 years 50-54 years 55-59 years 60-64 years 65 and over	0 01-04 05-09 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65+
2 *	AgeGroup	<1 year 1-4 years 5-9 years 10-14 years 15-19 years 20-24 years 25-29 years 30 and over	0 01-04 05-09 10-14 15-19 20-24 25-29 30+
3 *	AgeGroup	<1 year 1-4 years 5-9 years 10-14 years 15-19 years 20-29 years 30 and over	0 01-04 05-09 10-14 15-19 20-29 30+

*** Options 2 and 3 above can be used for reporting aggregate mumps and/or pertussis data but should NOT be used for aggregate reporting of poliomyelitis or tetanus data.**

Changes to the VPD metadata

Metadata changes prior to 2014 can be found on the TESSy documents website. Changes from 2014 onwards have been summarised in Table 9 below.

Table 9: Summary of implemented changes in case-based and aggregated subject codes (formerly 'record types') for VPD from 2014 to current

Year of change	Subject	Variables	Description
2024	MUMP PERT POLI TETA MUMPAGGR PERTAGGR POLIAGGR TETAAGGR	**ALL**	**Reporting moved from TESSy to the Epipulse Cases platform. This transition has led to changes in some variable names and categorical values (see below).**
		RecordTypeVersion	Remove variable
	MUMP PERT POLI TETA	Classification → CaseClassification; DateLastVaccDose → DateOfLastVaccination; RecordId → NationalRecordId; RecordType → SubjectCode; Subject → Disease;	Variable names changed from (TESSy) → to (Epipulse Cases): Classification → CaseClassification; DateLastVaccDose → DateOfLastVaccination; RecordId → NationalRecordId; RecordType → SubjectCode; Subject → Disease;
	MUMP PERT TETA	VaccStatus → VaccinationStatus	Variable name changed from (TESSy) → to (Epipulse Cases): VaccStatus → VaccinationStatus
	MUMP	ClusterIdentification → ClusterId; ClinicalPresentation → ClinicalCriteria; Complications → ComplicationDiagnosis	Variable names changed from (TESSy) → to (Epipulse Cases): ClusterIdentification → ClusterId; ClinicalPresentation → ClinicalCriteria Complications → ComplicationDiagnosis
	PERT	TestMethod → PathogenDetectionMethod	Variable name changed from (TESSy) → to (Epipulse Cases): TestMethod → PathogenDetectionMethod
	MUMPAGGR PERTAGGR POLIAGGR TETAAGGR	AgeClass → AgeGroup; RecordType → SubjectCode; Subject → Disease;	Variable names changed from (TESSy) → to (Epipulse Cases): AgeClass → AgeGroup; RecordType → SubjectCode; Subject → Disease; VaccStatus → VaccinationStatus
	MUMPAGGR PERTAGGR TETAAGGR	Classification → CaseClassification;	Variable names changed from (TESSy) → to (Epipulse Cases): Classification → CaseClassification;
	MUMPAGGR PERTAGGR	VaccStatus → VaccinationStatus	Variable names changed from (TESSy) → to (Epipulse Cases): VaccStatus → VaccinationStatus
	PERT	VaccMaternal	ADD variable: Vaccination status of mother during pregnancy for cases < 2 years of age at the time of disease onset New validation rule: If Age is less than 2 years, then vaccination status of mother during pregnancy (VaccinationStatusMaternal) should be reported.

		VaccMaternal_GestAge	ADD variable: If mother vaccinated during pregnancy, at what gestational age (in weeks) New validation rule: If Age is less than 2 years, then vaccination status of mother during pregnancy (VaccinationStatusMaternal) should be reported.
	POLIAGGR TETAAGGR	VaccinationStatus	ADD variable
	MUMP PERT POLI TETA	CaseClassification; Outcome	Discontinued "UNK" categorical value
		Status	Remapping of "NEW/UPDATE" to "ADD/UPDATE"
	MUMP PERT POLI TETA MUMPAGGR PERTAGGR POLIAGGR TETAAGGR	Gender	Discontinued "UNK" categorical value and "O" remapped to "OTH"
	MUMP	ClinicalCriteria	Discontinued "UNK" categorical value and "O" remapped to "OTH"
		ClusterRelated	Discontinued "UNK" categorical value and variable changed from coded value to Boolean (0 = No ; 1 = Yes)
		ClusterSetting	Discontinued "UNK" and "NA" categorical values and "HOSP" remapped to "NOS" = Nosocomial (hospital)
		ComplicationDiagnosis	Discontinued "UNK" categorical value and remapping of: "ENC" to "ENCEPH" "NOCOMP" to "NONEIMP" "O" to "OTH"
		Genotype	Discontinued "UNK" and "NA" categorical values and remapping of: "A" to "MUMPV_A" "B" to "MUMPV_B" "C" to "MUMPV_C" "D" to "MUMPV_D" "F" to "MUMPV_F" "G" to "MUMPV_G" "H" to "MUMPV_H" "I" to "MUMPV_I" "J" to "MUMPV_J" "K" to "MUMPV_K" "L" to "MUMPV_L" "N" to "MUMPV_N"
	MUMP PERT	Hospitalisation	Discontinued "UNK" categorical value and variable changed from coded value to Boolean (0 = No ; 1 = Yes)
	PERT	PathogenDetectionMethod	Discontinued "UNK" and "NA" categorical values and "ORALFLUIDIgG" remapped to "ORALIgG"
	MUMP PERT TETA MUMPAGGR PERTAGGR	VaccinationStatus	Discontinued "UNK" and "NA" categorical values and "DOSEUNK" remapped to "UNKDOSE"
	MUMPAGGR PERTAGGR POLIAGGR TETAAGGR	AgeGroup	Discontinued "UNK" categorical value
		SubjectCode	"AGGRVPD" value remapped to "MUMPAGGR" / "PERTAGGR" / "POLIAGGR" / "TETAAGGR"

	MUMPAGGR PERTAGGR	CaseClassification	Discontinued "UNK" and "DISCARDED" categorical values
	TETAAGGR	CaseClassification	Discontinued "UNK" categorical value
2021	TETA	VaccStatus	Variable added
2017	MUMP PERT POLI TETA	DateLastVaccDose	The description updated to specify that the date given should be the date of last dose before disease onset.
	MUMP	Genotype	The coded value 'NA' (not applicable) was added.
	PERT	TestMethod	The coded value 'ORALFLUIDIgG' (IgG in oral fluid) was added.
2016	MUMP	ClinicalPresentation	The description of the variable was edited to match other VPDs
	POLI TETA	DateLastVaccDose	Variable added
2015	MUMP PERT POLI TETA	EpiLink ClinicalCriteria Labresult	Variables dropped
	MUMP	Classification	The description of the variable was edited to ensure consistency with the EU case definition
		Genotype	Variable added.
	PERT	Classification	The description of the variable was edited to ensure consistency with the EU case definition
2014	MUMP PERT POLI	VaccStatus	Improve description of coded value list

Annex 2. VPD-specific material

VPD data reporting frequency

The surveillance data for the VPDs (mumps, pertussis, poliomyelitis and tetanus) should be uploaded **annually**. In 2024, uploaded data will relate to cases with date used for statistics in 2023.

The deadline for uploading all VPD data is 15 October 2024.

As per the case definitions:

- Mumps – possible, probable and confirmed cases should be reported.
- Pertussis – possible, probable and confirmed cases should be reported.
- Poliomyelitis - confirmed cases should be reported. It is also necessary to report "zero cases" if no cases have occurred.
- Tetanus – probable and confirmed cases should be reported.

See below for further details of the case definition for each disease.

It is possible to update case information retrospectively, i.e. for cases reported in previous years with a date used for statistics prior to 2023. For all diseases, any update of previously reported cases should be done before the reporting deadline for data to be included in the annual epidemiological report and surveillance atlas.

Once the data are validated by the disease experts at ECDC, they are then made publicly available on the *Surveillance Atlas of Infectious Diseases* and through *annual surveillance reports* on the ECDC website.

ECDC also presents worldwide polio cases, reported by the Global Polio Eradication Initiative (GPEI), on a monthly basis on a dedicated *Polio dashboard*.

Narrative information

Changes over time in the number of cases reported in a surveillance system do not always reflect true changes in the incidence of disease. New reporting practices, improved laboratory capacities and changes in legislation are some of the factors that can influence the number of cases reported. It is important to be aware of such "surveillance artefacts" when analysing surveillance data and countries are encouraged to describe changes in the surveillance environment that may impact on the number of cases reported. It is equally important to report if the surveillance environment has remained the same from one year to the next. We encourage reporting countries to provide this information at the same time as data submission to TESSy and to *VPD.VPD@ecdc.europa.eu*.

Mumps data collection and case definitions

Until 2011, data on cases of mumps were collected by the European surveillance network for selected vaccine-preventable diseases (EUVAC.NET), hosted at the Statens Serum Institute (SSI) in Denmark. The coordination of this network and data collection was transferred to ECDC in 2011.

Possible, probable and confirmed cases should be reported according to the 2018 EU case definition for Mumps[2]:

Clinical criteria

Any person with:

— Fever;

AND at least one of the following three:

— Sudden onset of unilateral or bilateral tender swelling of the parotid or other salivary glands without other apparent cause;

— Orchitis;

— Meningitis.

Laboratory criteria

At least one of the following three:

— Isolation of mumps virus from a clinical specimen;

— Detection of mumps virus nucleic acid;

— Mumps virus specific antibody response characteristic for acute infection in serum or saliva.

Laboratory results need to be interpreted according to the vaccination status.

Epidemiological criteria

An epidemiological link by human to human transmission

Additional information: incubation period lasting 14-25 days, but more often 16-18 days

Case classification:

A. Possible case: any person meeting the clinical criteria

B. Probable case: any person meeting the clinical criteria and with an epidemiological link

C. Confirmed case: any person not recently vaccinated and meeting the laboratory criteria

In case of recent vaccination: any person with detection of wild-type mumps virus strain

The 2018 case definition is the same as of 2012, while the 2008 case definition differs from the 2012 case definition with regard to the clinical criteria. In the 2008 case definition, fever and at least *two* of: swelling of the parotid or other salivary glands, orchitis or meningitis are required for a case to fit the clinical criteria. The 2002 EU case definition gives a more general description of clinical criteria and does not define a possible case.

[2] Commission Implementing Decision 2018/945/EU 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.

Pertussis data collection and case definitions

Data on pertussis have been collected on a European level since 1998. Initially, this data collection was coordinated by the European surveillance network for selected vaccine-preventable diseases (EUVAC.NET), hosted at the Istituto Superiore di Sanità from 1998 - 2002 and then at the Statens Serum Institute in Denmark from 2003 - 2011. In 2011, the coordination of this network was transferred to ECDC.

Possible, probable and confirmed cases should be reported according to the 2018 EU case definition for pertussis[3]:

Clinical criteria

Any person with a cough lasting at least two weeks;

AND at least one of the following three:

— Paroxysms of coughing;

— Inspiratory 'whooping';

— Post-tussive vomiting;

OR Any person diagnosed as pertussis by a physician;

OR Apnoeic episodes in infants.

Notes: All individuals including adults, adolescents or vaccinated children can present with atypical symptoms. Characteristics of cough should be investigated, particularly whether the cough is paroxysmal in nature, increases during the night and occurs in the absence of fever.

Laboratory criteria

At least one of the following three:

(i) Isolation of *Bordetella pertussis* from a clinical specimen;

(ii) Detection of *Bordetella pertussis* nucleic acid in a clinical specimen;

(iii) *Bordetella pertussis* specific antibody response.

Direct diagnosis (i)-(ii): *Bordetella pertussis* and its nucleic acid are best isolated/detected from nasopharyngeal samples. Indirect diagnosis (iii): if possible ELISA should be performed using highly purified Pertussis Toxin and WHO reference sera as a standard. Results need to interpreted according to pertussis vaccination status. If vaccinated within the last few years before specimen collection, the titre of specific antibodies against *Bordetella pertussis* toxin may be a consequence of, or modified by, previous vaccination.

Epidemiological criteria

An epidemiological link by human-to-human transmission

Case classification:

A. Possible case: any person meeting the clinical criteria.

B. Probable case: any person meeting the clinical criteria and with an epidemiological link.

C. Confirmed case: any person meeting the clinical and the laboratory criteria.

The 2018 EU case definition repeated the definition from 2012 but was expanded by including the notes relating to the clinical criteria and laboratory criteria (both on direct and indirect diagnosis). The 2012 and 2008 EU case definitions (unchanged between 2008 and 2012), differed from the 2002 EU case definition, which defined clinical criteria as a "clinical picture compatible with pertussis, e.g. a cough illness lasting at least two weeks with one of the following: paroxysms of coughing, inspiratory 'whoop' or post-tussive vomiting without other apparent cause" and did not include an epidemiological criterion.

[3] Commission Implementing Decision 2018/945/EU 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.

Poliomyelitis data collection and case definitions

Confirmed cases should be reported according to the 2018 EU case definition for acute poliomyelitis[4]:

Clinical criteria

Any person <15 years of age with Acute flaccid paralysis (AFP)

OR

Any person in whom polio is suspected by a physician

Laboratory criteria

At least one of the following three:

— Isolation of a polio virus and intratypic differentiation – Wild polio virus (WPV)

— Vaccine derived poliovirus (VDPV) (for the VDPV at least 85% similarity with vaccine virus in the nucleotide sequence in the VP1 section)

— Sabin-like poliovirus: intratypic differentiation performed by a WHO-accredited polio laboratory (for the VDPV a >1% up to 15% VP1 sequence difference compared with vaccine virus of the same serotype)

Epidemiological criteria

At least one of the following two epidemiological links:

— Human to human transmission

— An history of travel to a polio-endemic area or an area with suspected or confirmed circulation of poliovirus

Case classification:

A. Possible case: Any person meeting the clinical criteria

B. Probable case: any person meeting the clinical criteria with an epidemiological link

C. Confirmed case: any person meeting the clinical and the laboratory criteria

[4] Commission Implementing Decision 2018/945/EU 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.

Tetanus data collection and case definitions

Probable and confirmed cases should be reported according to the 2018 EU case definition for tetanus[5]:

Clinical criteria

Any person with the following three:

— Painful muscular contractions primarily of the masseter and neck muscles leading to facial spasms known as trismus and 'risus sardonicus';

— Painful muscular contractions of trunk muscles;

— Generalised spasms, frequently position of opisthotonus.

Laboratory criteria

At least one of the following two:

— Isolation of *Clostridium tetani* from an infection site;

— Detection of tetanus toxin in a serum sample.

Case classification:

A. Probable case: any person meeting the clinical criteria

B. Confirmed case: any person meeting the clinical and the laboratory criteria

The 2018 EU case definition is the same as the 2012 and 2008 case definitions. By contrast, the 2002 EU case definition gave a more general description of clinical criteria. Laboratory criteria for diagnosis were defined as 'the detection of tetanus toxoid antibody in an unvaccinated and untreated patient' and 'demonstration of a specific tetanus toxoid antibody response'. The 2002 definition does not define a probable case and defines a confirmed case as a "clinically compatible case".

[5] Commission Implementing Decision 2018/945/EU 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.