

DARE

DIGITAL LIFELONG PREVENTION

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Spoke 2 Deliverable

SP2.D5.1 Concept of models and paths and mapping of eligible data sources

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SP2.D5.1 Concept of models and paths and mapping of eligible data sources

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1. Publishable Summary

Staying ahead of the new health challenges, including population age group changes, requires developing effective prevention strategies based on combined real-world data and research-driven insights. In Working Package 5 (WP5) - Lifelong prevention approaches across the lifespan - of Spoke 2 (SP2) - Community-based Digital Primary Prevention - of the DigitAl lifelong pREvention (DARE) project, the goal is to identify risk factors over the lifespan, from birth and early childhood onwards, including healthy elderly individuals, to inform such strategies. To achieve this goal, WP5 will carry out a series of pilot studies to produce scalable and adaptable models. The mapping and detailed description of data sources suitable to WP5 purposes is instrumental to eventually allow an integrated multidimensional assessment of risk factors of disease development across the lifespan. Suitable data sources encompass physical and psychological health, social, and environmental data.

Deliverable 5.1 aims at describing the models and paths underpinning digital innovation across WP5 pilot studies and providing detailed information on the architecture and codebook of eligible data sources to be used for WP5 pilot studies.

2. List of abbreviations

ADHD - Attention Deficit Hyperactivity Disorder

ADI - Area Deprivation Index

ARPAV - (Agenzia Regionale per la Prevenzione e Protezione Ambientale del Veneto)

Regional Prevention and Protection Agency of Veneto Region

CeDAP - Certificate of Delivery Care Registry

DARE - Digital Lifelong Prevention

ELT - Extract, Load, Transform

ETL - Extract, Transform, Load

FP - Family pediatricians

DPR - General Data Protection Regulation

ICD9CM - International Classification of Diseases, Ninth Revision, Clinical Modification

WP - Working Package

PICUs - Pediatric Intensive Care Units

REDCap - Research Electronic Data Capture

SP - Spoke

TIPNet - (Network delle Terapie Intensive Pediatriche Italiane) Italian Network of Pediatric Intensive Care Units registry

3. Introduction

Predictions point to a growing share of over-60s in the global population, with certain regions of the world attaining this status before others, putting pressure on healthcare systems to adapt and innovate in the face of changing demands.

At the same time, individual-based and community-wide data sources open possibilities for meeting and managing these challenges and identifying potentials for community-targeted as well as personalized medicine protocols.

This point in time is therefore key to take a lifelong prevention approach with tools such as population-wide data on factors that influence health over the lifespan and the development of models to support expertise regarding relevant risk factors based on the clinical data collected by professionals at multiple levels of care.

WP5 is situated in Spoke 2 (SP2), and is motivated by how primary prevention can be carried out through digital tools by identifying and predicting health risks over the lifespan starting from birth and early childhood conditions to healthy aging. Determinants of health are studied through a multidimensional approach underpinning the integration of clinical, psychological, social, and environmental data. The data sources will be integrated and analyzed by means of digital state-of-the art technologies that will enable the development of reproducible models to allow the multidimensional risk assessment and prevention of several diseases across the lifespan.

The definition and integration of predictors of psychological health into routine clinical assessment is a key, but currently lacking, step towards achieving a truly holistic preventive approach to health, and a challenge that WP5 sets out to tackle through some of its pilot studies focusing on the assessment and collection of data on determinants of psychological health. Through the in-depth study of specific cohorts of patients by means of digital assessment tools and wearables, the aforementioned pilot studies will support identification of early predictors of psychological health to be integrated into clinical assessment in a scalable fashion, across different age groups and reference communities.

We herein describe and justify the selection of models and paths to digital innovation and tools, for data collection, pre-processing and integration, as well as the list of the datasets combined with clinical- and research-based expertise in order to fulfill the aforementioned objective of this WP through its planned pilot studies, providing an accessible framework

through which the derived models can be extended step-wise to the reference community and other populations.

3.1. Objectives of the deliverable

The aim of the SP2 - WP5 is to establish an epidemiological framework for optimal exploitation of real-world and research-based biological, clinical, psychological, social, and environmental data, to enable personalized multidimensional disease-specific risk prediction and more effective preventive strategies throughout the lifespan.

In this context the aims of this deliverable include:

1. to describe the models and paths underpinning digital innovation across WP5 pilot studies to advance digital data collection, pre-processing and integration for the multidimensional assessment of health across the lifespan;
2. to provide detailed information on the architecture and codebook of eligible data sources to be used within WP5 to serve as a fundamental tool to facilitate data interrogation and integration across the pilot studies.

3.2. WP5 Operational Architecture

The WP5 refers to strategies and measures implemented throughout an individual's entire life to prevent or mitigate various health issues and promote overall well-being. This concept emphasizes the importance of adopting preventive measures at different stages of life, from early childhood to old age. WP5 workplan is presented in Table 1.

Table 1 - SP 2 - WP5 workplan

Task number	Description
5.1	Data source mapping and harmonization of clinical and psychological/mental health data from real-world and research-based data sources will be performed, spanning from prenatal through aging life.

	Requirements and methods for interoperability profiles and standards will be identified in coordination with WP3 in spoke 1.
5.2	Mapping and harmonization of additional data sources and extension of the data model to include health-related data, including socioeconomic and environmental data.
5.3	Proof of viability studies performed using advanced computational risk stratification analyses and innovative modeling approaches.
5.4	Upscaling of data models and platforms to include communities recruited and established cohort consortia.
5.5	Sustainability of the established data platforms will be ensured by exploiting the interest of public and private companies in conducting clinical trials and comparative effectiveness studies. Exploitability of the results will be assessed together with WP2 in spoke 1.

4. Data Source Modelling

Data Source Modelling is the process of creating a structured representation of various data sources. This involves defining the characteristics, format, structure, and relationships of the data from different sources. Data Source Modelling is a fundamental step in data management and integration, ensuring that data from different sources can be effectively utilized and harmonized within a given project. The purpose of this deliverable is to provide a comprehensive understanding of the data available from various origins, facilitating the integration of diverse datasets for analysis and reporting. While some digital data sources will be developed alongside the WP5 pilot studies they are intimately connected with, other databases to be used and integrated have already been established and are well consolidated. In this perspective, WP5 pilot studies have full access to the five data sources described below, and other data sources pertaining to the clinical and psychological health of adult and elderly populations are still under assessment.

1. Pedianet database;



2. Area Deprivation Index (ADI);
3. Italian Network of Pediatric Intensive Care Units (TIPNet);
4. Certificate of Delivery Care Registry (CeDAP);
5. Environmental data (ARPAV).

For each data source the data set structure (tables, variables, variables name, measurement unit, notes) is reported in Appendix A-D.

This deliverable will be subject to annual revisions and updates in order to map and describe additional data sources for integration as they become available.

4.1. Pedianet database

Pedianet is an independent network of family pediatricians (FP) established in 1998 to collect information from outpatient family pediatricians in Italy for clinical and epidemiological research. The Pedianet database's beginning dates back to January 2000. The Pedianet database has been registered according to Italian law. Data are included in the database only after written informed consent is obtained from the parents of the child. Access to the database is allowed only for Pedianet researchers in the context of research projects that have been approved by both the Steering Committee and the Ethics Review Board (if required). The data include demographic information as well as information on inpatient diagnoses, drug prescriptions, anthropometric measures, specialist medical examinations, and physical examinations or lab tests. The information currently available is reported in Appendix A.

4.2. Area Deprivation Index (ADI)

The area deprivation index (ADI) is a composite index that has been extensively used to examine socioeconomic status: low education, unemployment, living on rent, living in crowded households, and born to single-parent families are the items that compose the index and are among the most relevant socioeconomic determinants. The ADI, for the Veneto Region, has already been linked to Pedianet (Appendix A - table "ANAGRAFICA"). The addresses of the children were geo-referenced and linked to the census block of each Italian municipality. Through record linkage with the census block number, the ADI and all the variables defined at the census block level were retrieved for each address.

4.3. Italian Network of Pediatric Intensive Care Units (TIPNet)

The TIPNet is a Research Network involving 18 Italian pediatric intensive care units (PICUs). Each center collects demographic and clinical data on hospital admissions of patients hospitalized in PICUs. The Ethics Committees of each center approved the use of the registry for non-profit research purposes, with a waiver for informed consent due to the observational nature and anonymity of data. Data are prospectively inserted each day of PICU stay into an electronic standardized sheet (REDCap-platform, REDCap, TN, USA). REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for data integration and interoperability with external sources. The data set structure is reported in Appendix B.

4.4. Certificate of Delivery Care Registry (CeDAP)

Certificate of Delivery Care Registry (CeDAP) is an electronic data collection system of all births (including stillbirths) occurring in Italy (Ministerial Decree no. 349 of 16 July 2001). The certificate is structured as six sections; each section collects specific information referring to the birthplace, parents' background, pregnancy, delivery, the newborn, and the possible presence of congenital malformations or causes of neonatal mortality. The midwife or the doctor produces the certificate no later than ten days after birth. Each region transmits the data every six months to the Ministry of Health following the data set structure presented in Appendix C.

4.5. Environmental data

Environmental data (air quality, water, soil, and weather) are available from the Regional Environmental Information System (Veneto Regional Prevention and Protection Agency - ARPAV). The ARPAV meteorological stations and the measurements of climate data are identified using the ARPAV website at the link: <https://www.ambienteveneto.it/datiorari/> and the available variables are reported in Appendix D.



5. Logical Data Architecture

In this section we describe how the data sources identified for the tasks in SP2 - WP5 will be accessed, stored, and managed, and we establish the security levels for data extraction, integration, and representation. The guidelines for the architecture are planned in order to align with those provided by Alma Health DB or other digital platform. A key component of the architecture is the possibility to increase the data sources in a stepwise manner and adapt the methodology to other communities.

Table 2 - List of approved pilots SP2 - WP5

Task	ID-PILOT	PILOT title	Data Source	From	Available	Structure
T5.2	S2-WP5-T5.2-P01	A multidimensional integrated digital prevention approach for healthy elder people	Clinical, epidemiological, functional, non-clinical data of more than 1000 subjects enrolled	UNIPA	Not yet	Not yet
T5.3	S2-WP5-T5.3-P01	Clinical, cognitive and neuropsychological markers of healthy ageing	Primary Care data Psychological and functional data of up to 1000 subjects Data will be collected through innovative instrumentation (wearables)	Healthsearch Other UNIPD	Under way Not yet	Under way Not yet
T5.3	S2-WP5-T5.3-P02	A multidimensional and multimodal analysis of visuospatial and socio-relational abilities in typical and atypical development	Primary Care data Area Deprivation Index Psychological and functional data of up to 800 subjects	Pedianet Pedianet UNIPD	Y Y Not yet	Y Y Not yet
T5.3	S2-WP5-T5.3-P03	Early markers and correlates of learning disorders and ADHD	Primary Care data Area Deprivation Index	Pedianet Pedianet	Y Y Not yet / Y	Y Y Not yet / Y



			Psychological data of up to 1000 subjects Data will be collected through innovative instrumentation (wearables)	UNIPD/ School databases		
T5.3	S2-WP5-T5.3-P04	Unlocking the full potential for uniting, improving and using electronic health data: innovative pathways from health data research to better health care for all, from prenatal life into adulthood - Use case: "The burden and risk factors of obesity in children and adolescents in Italy"	Primary Care data Area Deprivation Index Environmental data Hospital Data	Pedianet Pedianet ARPAV TIPNET Other	Y Y Y Under way	Y Y Y Under way

Table 3 - List of known data sources

ID-DATA SOURCE	Data source
S2-WP5-DS-01	Pedianet
S2-WP5-DS-02	Area Deprivation Index (ADI)
S2-WP5-DS-03	Italian Network of Pediatric Intensive Care Units (TIPNet)
S2-WP5-DS-04	Certificate of Delivery Care Registry (CeDAP)
S2-WP5-DS-05	Environmental - Air quality data (ARPAV)
S2-WP5-DS-06	Environmental - Water data (ARPAV)
S2-WP5-DS-07	Environmental - Soil data (ARPAV)
S2-WP5-DS-08	Environmental - Weather data (ARPAV)

5.1. Data extraction and storage

Data extraction is the process of collecting or retrieving disparate types of data from a variety of sources; it makes it possible to consolidate, process, and refine data so that it can be stored in a centralized location in order to be transformed. Data extraction is the first step in both ETL (extract, transform, load) and ELT (extract, load, transform) processes.



5.2. Data integration

ETL and ELT are integral components of a comprehensive data integration strategy. These processes are designed to facilitate the movement, transformation, and loading of data from source systems to target systems, ensuring that data is appropriately prepared and available for analysis.

ETL - Extract, Transform, Load:

- Extract: gather data from source systems.
- Transform: modify and structure the data as needed.
- Load: load the transformed data into a target system for analysis.

ELT - Extract, Load, Transform:

- Extract: collect data from source systems.
- Load: load raw data into a target system.
- Transform: transform the data within the target system for analysis.

The benefits of data integration, with the added aspect of control, are as follows:

- Provides a comprehensive and unified view of the organization's data: this not only facilitates a consolidated perspective but also ensures better control over data accessibility and utilization.
- Enables better-informed decision-making based on integrated and accurate information: the integrated data, when under control, becomes a reliable foundation for informed decision-making, enhancing the overall control over organizational strategies.
- Streamlines processes by reducing the need to access and reconcile data from multiple sources: improved control over data access and reconciliation processes leads to streamlined operations, minimizing errors and ensuring efficiency.
- Ensures data consistency and coherence across the organization: control mechanisms help maintain consistency and coherence in data, contributing to the reliability and trustworthiness of information used throughout the organization.
- Supports advanced analytics and business intelligence initiatives: control over integrated data is crucial for the success of analytics and business intelligence efforts,

ensuring that the insights derived are accurate, trustworthy, and aligned with organizational goals.

In summary, incorporating control into data integration processes enhances the reliability, security, and efficiency of managing and utilizing organizational data, contributing to the overall success of data-driven initiatives.

5.3. Data representation

Data representation refers to the form in which data is stored, processed, and transmitted. Data can be represented in various forms such as: (1) graphical representation (for instance a bar or line graph), (2) pictorial representation (image); (3) tabular representation (data arranged into a table are usually presented in rows and columns). The results from the pilot studies are based on aggregate data and thus have a purpose of summarizing and highlighting trends and associations.

6. Concept of Digital Functions

Digital epidemiology is the innovative use of data that were not collected with the purpose of carrying out epidemiological studies (Salathé 2018). It is this that renders the approach scalable but also brings a special set of challenges: obtaining data, managing them, and developing models and paths that can be extended to further communities. The digital function can be conceived of as the strategic, central hub in which prototypes, in this case the pilot studies, are constructed and tested; the hub originates and hones best practices for extending and applying the prototypes; and finally, the hub also enables further collaboration and use of the models and paths.

7. Definition of Protocols

All pilot studies in SP2 - WP5 follow the guidelines laid out in the GDPR (General Data Protection Regulation), the databases used, as well as the best practices laid out by Alma Health DB. This includes for example anonymization of data and safe storage. The protocols established ensure transparency in the management, storage, access to data. SP2 - WP5



further foresees adjustment and interoperability of the data sources according to the community which is the focus of the pilot studies on healthy aging.

8. Conclusions

This report lists and explains the processing models, integration paths and characteristics of the data sources selected to carry out the pilot studies. Detailed protocols for safeguarding data as well as rendering them interoperable, as necessary, will be established. We lay out which data are targeted currently and how further data sources can be included in a stepwise, scalable fashion to capture different risk factors depending on the populations and areas analyzed in order to identify health trajectories from birth and early childhood to adulthood and later life.

This novel linkage of health databases will be carried out according to the state-of-the-art architecture established by AlmaHealthDB or other digital platform. Indexes of physical and psychological health, social, and environmental data for WP5 pilot studies will allow identification of multidimensional risk factors in health outcomes across the lifespan.

9. References

The Pedianet Project. Pedianet. <http://www.pedianet.it/en>

ARPAV website <https://www.arpa.veneto.it/>

Ministerial Decree no. 349 of 16 July 2001 (Modificazioni al certificato di assistenza al parto, per la rilevazione dei dati di sanità pubblica e statistici di base relativi agli eventi di nascita, alla natimortalità ed ai nati affetti da malformazioni) Amendments to the childbirth assistance certificate for the collection of public health and basic statistical data related to birth events, perinatal mortality, and infants affected by malformations.

Rosano A, Pacelli B, Zengarini N, Costa G, Cislighi C, Caranci N. [Update and review of the 2011 Italian deprivation index calculated at the census section level] *Epidemiol Prev.* 2020;44(2-3):162–170. doi: 10.19191/EP20.2-3.P162.039.

Caranci N, Biggeri A, Grisotto L, Pacelli B, Spadea T, Costa G. [The Italian deprivation index at census block level: definition, description and association with general mortality] *Epidemiol Prev.* 2010;34(4):167–176.600

Daverio M, Sperotto F, Stefani C, Mondardini MC, Tessari A, Biban P, Izzo F, Montani C, Lapi M, Picconi E, Racca F, Marinosci GZ, Savron F, Wolfler A, Amigoni A; Italian Network of PICU Study Group (TIPNet) Neuromuscular Blocker Use in Critically Ill Children: Assessing Mortality Risk by Propensity Score-Weighted Analysis. *Crit Care Med.* 2022 Mar 1;50(3):e294-e303

Salathé, M. Digital epidemiology: what is it, and where is it going?. *Life Sci Soc Policy* 2018;14(1). doi.org:10.1186/s40504-017-0065-7

Appendix A – Data set structure of Pedianet (Variables and tables selected from those available in Pedianet clinical studies)

List of tables:

1. ANAGRAFICA
2. CONTATTI
3. ESENZIONI
4. MISURE
5. PPIP
6. REAZIONI
7. RICETTE
8. RICETTE_FARMACI
9. RICETTE_LABORATORIO
10. RICETTE_LABORATORIO_ANALISI
11. RICETTE_SPECIALISTICA
12. RICOVERI
13. RICOVERI_FSE
14. TAMPONI_COVID19
15. VACCINAZIONI
16. VACCINAZIONI_REGISTRO_REGIONALE

1. Table ANAGRAFICA (patient's personal data)

Variable	Variable name	Measure ment unit	Notes
FP unique identifier	idmedico	Numeric	Primary key for the "ANAGRAFICA" table

Patient unique identifier	guid	String	Primary key for the "ANAGRAFICA" table
Sex	sex	String	Permitted values: M=Male; F=Female
Date of birth	datan	Date	Format 15/MM/YYYY
Enrolment by the FP (start of follow up)	inizioassistenza	Date	Format DD/MM/YYYY
End of follow up	fineassistenza	Date	Format DD/MM/YYYY
ZIP code	zip_code		Field not included in the original table and obtainable by linking the ANAGRAFICA table with pediatric surgeries' geographical info.
Area Deprivation Index	indice_deprivazione_econ omica	Numeric	Field not included in the original table and obtainable from results of a Milano-Bicocca University study.

2. Table CONTATTI (contacts)

Variable	Variable name	Measurement unit	Notes
Appointment unique identifier	guid	String	Primary key for the "CONTATTI" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Appointment date	datacontatto	Date	Format DD/MM/YYYY
Appointment time	oracontatto	Hour	Format HHMM
Type/reason for appointment	motivocontatto	String	Free text and semi structured
Clinical notes	diariocontatto	String	Free text, up to 5K characters
Diagnosis 1	diagnosi1	String	Free text. Short text to describe the code; may be manually modified (same for following short text fields)
Diagnosis 1 code	diagnosi1_icd9	String	ICD-9CM
Diagnosis 2	diagnosi2	String	Free text
Diagnosis 2 code	diagnosi2_icd9	String	
Diagnosis 3	diagnosi3	String	Free text
Diagnosis 3 code	diagnosi3_icd9	String	
Signs and symptoms 1	segnisintomi1	String	Free text
Signs and symptoms 1 code	segnisintomi1_icd9	String	ICD-9CM

Variable	Variable name	Measurement unit	Notes
Signs and symptoms 2	segnisintomi2	String	Free text
Signs and symptoms 2 code	segnisintomi2_ic d9	String	ICD-9CM
Signs and symptoms 3	segnisintomi3	String	Free text
Signs and symptoms 3 code	segnisintomi3_ic d9	String	ICD-9CM



3. Table ESENZIONI (exemptions)

Variable	Variable name	Measurement unit	Notes
Exemption unique identifier	guid	String	Primary key for the "ESENZIONI" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Exemption code	codice	String	Depending on Regional HS code list
Exemption description	descrizione	String	Depending on Regional HS code list
Start date	decorrenza	Date	Format DD/MM/YYYY
End date	scadenza	Date	Format DD/MM/YYYY. "End date" indicates the point in time up to which the exemption is in force. If the typology does not involve exemption, no value needs to be entered.
Exemption typology	tipo	String	Free text

4. Table MISURE (measurements)

Variable	Variable name	Measurement unit	Notes
Measurement record unique identifier	guid	String	Primary key for the "MISURE" table

FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Appointment unique identifier	guidcontatto	String	
Appointment date	datarecord	Date	Format DD/MM/YYYY
Patient weight in kg	peso	Numeric	
Patient height in cm	altezza	Numeric	
Cranial circumference in cm	cc	Numeric	Normally recorded only for very young children
Max blood pressure	pmax	Numeric	
Min blood pressure	pmin	Numeric	
skin fold	plicut	Numeric	
Abdomen circumference in cm	ca	Numeric	Normally recorded only for very young children

5. Table PPIP (ambulatory exams)

Variable	Variable name	Measurement unit	Notes
PPIP unique identifier	guid		Primary key for the "PPIP" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Appointment unique identifier	guidcontatto	String	
Date of PPIP performed	datarecord	Date	Format DD/MM/YYYY
PPIP code	codice	String	Depending on Regional HS code list. Examinations in the national list will have the national code, but some regions have a longer list and additional codes are local. The list of codes is updated from time to time, according to political decision regarding which examinations are reimbursed.
PPIP description	descrizione	String	Free text
PPIP result	risultato	String	Free text

6. Table REAZIONI (adverse events)

Variable	Variable name	Measurement unit	Notes
Adverse event unique identifier	guid	String	Primary key for the "REAZIONI" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Starting date of adverse event	datainsorgenza	Date	Format DD/MM/YYYY. This may be reported by the family
ATC	codice	String	Not reliable; better to consult item "descrizione"
Substance, more specific	tipo	String	Multiple choice: 1001: allergy; 1002: Drug intolerance; 1003: adverse event.
Substance	gruppo	String	Multiple choice: 1001: drug; 1002: allergens; 1003: other; 1004: adverse drug reaction sheet
Adverse event description	descrizione	String	Free text
Clinical notes	annotazione	String	Free text

7. Table RICETTE (prescriptions)

Variable	Variable name	Measurement unit	Notes
Prescription unique identifier	guid	String	Primary key for the "RICETTE" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	This is the linkage key to the other tables (ricetta_specialista...)
Appointment unique identifiers	guidcontatto	String	Link to contact.
Date of prescription	datarecord	Date	Format DD/MM/YYYY. The same as appointment
Type of prescription	tiporicetta	String	F: Prescription; S: Specialist (specialist appointment to carry out instrumental examinations); L: Laboratory (laboratory tests)
Specialist appointment	tipovisita	String	Code by regional NHS. Only if specialist appointment prescribed.
Diagnosis code	codicediagnosi	String	ICD9. If it is filled out, this provides a hint to the indication of the drug
Diagnosis description	diagnosi	String	Free text

8. Table RICETTE_FARMACI (drugs prescriptions)

Variable	Variable name	Measurement unit	Notes
Prescription unique identifier	guidricetta	String	Primary key for the "RICETTE_FARMACI" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	Link to the 'prescription' table
Date of prescription	dataricetta	Date	Format DD/MM/YYYY. The same as appointment
National coding of the product (minsan/ AIC)	codice	String	Logic numeric based on AIFA tables (minsan/ AIC). From a drop-down list
ATC code	atc	String	ATC code
Description of the prescribed drug.	descrizione	String	Free text

9. Table RICETTE_LABORATORIO (laboratory_prescriptions)

Variable	Variable name	Measurement unit	Notes
Prescription unique identifier	guidricetta	String	Primary key for the "RICETTE_LABORATORIO" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Prescription date	dataricetta	Date	Format DD/MM/YYYY. The same as appointment
Laboratory exam requested	descrizione	String	Semi structured
Catalogue unique identifier	guidcatalogo	String	
Laboratory exam code	codice	String	Depending on Regional/National HS code list
Laboratory exam code	dmr	String	Depending on Regional/National HS code list
Laboratory exam code	branca	String	Depending on Regional/National HS code list

10. Table RICETTE_LABORATORIO_ANALISI (prescriptions for laboratory analyses)

Variable	Variable name	Measurement unit	Notes
Laboratory analytes prescription	guid		Primary key for the "RICETTE_LABORATORIO_ANALISI" table

unique identifier			
FP unique identifier	idmedico	Numeric	
LAB unique identifier	guidlaboratorio	String	
Prescription unique identifier	guidricetta	String	
Patient unique identifier	guidpaziente	String	
Prescription date	dataricetta	Date	Format DD/MM/YYYY. The same as appointment
Examination date	referto_datareferto	Date	Format DD/MM/YYYY.
	referto_guid	Numeric	
	referto_codice	Numeric	
	referto_descrizione	Numeric	
	referto_valore	Numeric	
	referto_valalterato	Flag	Permitted values: 0=No; 1=Yes
	referto_commento	String	
	referto_udm	String	Combo
	referto_rifda	String	Combo
	referto_metodo	String	Combo



11. Table RICETTE_SPECIALISTICA (specialist prescriptions)

Variable	Variable name	Measureme nt unit	Notes
LAB unique identifier	guidricetta	String	Primary key for the "RICETTE_SPECIALISTICA" table
FP unique identifier	idmedico	Numeric	
Prescription unique identifier	guidpaziente	String	
Prescription date	dataricetta	Date	Format DD/MM/YYYY. The same as appointment
Description of prescription	descrizione	String	Text
	guidcatalogo	String	
Prescription code	codice	String	
	dmr	String	
	branca	String	
	referto_testo	String	Text
Specialist appointment date	referto_datareferto	Date	Format DD/MM/YYYY
Registration date	referto_dataregistrazione	Date	Format DD/MM/YYYY. Date on which the results are registered in the pediatrician's records.
Has patient attended appointment? If yes, indicate results.	referto_stato	String	Multiple choice: To be carried out; Carried out; Normal; Pathological; Not carried out; Not received
Diagnosis	referto_diagnosi	String	Free text



ICD9CM	referto_codicediagnosi	String	ICD9CM
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12. Table RICOVERI (hospitalizations)

Variable	Variable name	Measurement unit	Notes
Hospitalization unique identifier	guid		Primary key for the "RICOVERI" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Appointment unique identifier	guidcontatto	String	
Hospitalization start date	datarecord	Date	Format DD/MM/YYYY
Admitted to Emergency Room	prontosoccorso	String	Permitted values: 1=Yes; 0=No
Reason for hospitalization	motivoaccesso	String	Free text, semi structured
Reason for hospitalization/Diagnosis	diagnosiricovero	String	Free text, semi structured
Hospitalization end date	datadimissione	Date	Format DD/MM/YYYY
Final diagnosis	diagnosidimissione	String	Free text
Clinical notes	dettagli	String	Free text

13. Table RICOVERI_FSE (hospitalizations with linkage to the FSE - The download of the patient's electronic health records is available only for family pediatricians from the Veneto region, starting in 2017)

Variable	Variable name	Measurement unit	Notes
Document unique identifier	guiddocumento	String	Primary key for the "RICOVERI_FSE" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Date of recording	datarecord	Date	Format DD/MM/YYYY In 2020 it seems to correspond to admission date.
SDO: ER/Hospital discharge letter	testo	String	Discharge letter in case of hospitalization or ED report in case of emergency room treatment.

14. Table TAMPONI_COVID19 (Covid-19 swabs - The download of the patient's electronic health records is available only for family pediatricians from the Veneto region, starting in 2017)

Variable	Variable name	Measurement unit	Notes
Covid-19 swab unique identification	guid	String	Primary key for the "TAMPONI_COVID19" table
FP unique identifier	idmedico	Numeric	
Prescription unique identifier	guidricetta	String	
Patient unique identifier	guidpaziente	String	
Date of prescription	dataricetta	Date	Format DD/MM/YYYY. The same as appointment
Date of examination	referto_datarefer to	Date	Format DD/MM/YYYY.
Description	referto_descrizio ne	Numeric	
	referto_valore	Numeric	
	referto_valaltera to	Flag	Permitted values: 0=No, 1=Yes

15. Table VACCINAZIONI (vaccinations)

Variable	Variable name	Measurement unit	Notes
Vaccination unique identifier	guid	String	Primary key for the "VACCINAZIONI" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Appointment unique identifiers	guidcontatto	String	
Vaccination date	datarecord	Date	Format DD/MM/YYYY. Date vaccination administered.
Vaccine type	descrizione	String	
Code for the active ingredient (nor minsan neither ATC)	codice	String	
Vaccine name	vaccino	String	Vaccine trade name
Batch number	lotto	String	Vaccine production lot number. 10% is complete from 2017 to 2020
Adverse event	reazioneavversa	String	Free text. It is probably more complete if there is an adverse reaction because it's mandatory for the spontaneous report
Clinical notes	nota	String	Free text



16. Table VACCINAZIONI_REGISTRO_REGIONALE (vaccinations performed by Region -- The download of the patient's electronic health records is available only for family pediatricians from the Veneto region, starting in 2017)

Variable	Variable name	Measurement unit	Notes
Vaccination unique identifier	guid	String	Primary key for the "VACCINAZIONI_REGISTRO_REGIONALE" table
FP unique identifier	idmedico	Numeric	
Patient unique identifier	guidpaziente	String	
Appointment unique identifiers	guidcontatto	String	
Vaccination date	datarecord	Date	Format DD/MM/YYYY
Vaccine type	descrizione	String	
Code for the active ingredient (not minsan neither ATC)	codice	String	
Vaccine name	farmaco	String	Item combo
Batch number	lotto	String	Item combo
Dose number	dose	Numeric	
Adverse event	reazioneavvers a	String	Free text
ATC code for the vaccine	atc	String	ATC code

Appendix B – Data set structure of Italian Network of Pediatric Intensive Care Units (TIPNet)

List of tables:

1. PERSONAL DATA
2. ADMISSION
3. ENTRY
4. PIM
5. PELOD
6. ARISTOTLE SCORE
7. HOSPITALIZATION
8. VENTILATION PROCEDURES
9. INFECTION
10. SEPSIS
11. DISCHARGE

1. Table PERSONAL DATA

Variable	Variable name	Measurement unit	Notes
Patient code	codpat	String	Primary key for “PERSONAL DATA” table
Logo TIPNET	logo_tipnet	String	Description
Gender	gender	String	Patient gender. Permitted values: 1=Male; 2=Female; 3=Ambiguous
Date of birth	nascita_dt	Data	Patient’s date of birth. Date format: DDMMYYYY
Place of birth	comune_nsc	String	ISTAT code for the municipality where patient was born
Ethnicity	etnia	String	Patient’s ethnicity. Permitted values: 1=Caucasian; 2=Hispanic; 3=Asian; 4=African; 5=Arab; 6=Mixed ethnicity

Place of residence	comune_res	String	ISTAT code for the municipality where patient resides.
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2. Table ADMISSION

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Medical chart ID number Primary key for "ADMISSION" table
Patient code	codpat	String	
Admission date	ingresso_dt	Date	Date format: DDMMYYYY
Admission time	ingresso_hh	Time	Time format: HHMM
Age in years	eta	Numeric	Age in years at time of admission
Age in days	eta_giorni	Numeric	Age in days at time of admission
Newborn patient	is_prematuro	String	Entry valid only for newborns in continuous hospital care from birth to 7 days; patients discharged or older than 7 days, even if in continuous hospital care fall under the category of children. Entry valid only if age ≥ 0 . Permitted values: 1=Yes; 2=No
Provenance	provenienza_pre		Entry valid only for newborn patients. Permitted values: 1=Inborn; 2=Outborn



Gestational weeks	sett_gest	Int	Entry valid only for newborn patients. Numeric values between 22 and 43 inclusive.
Pathologies in pregnancy	pat_gravid	String	Entry valid only for newborn patients. Permitted values: 1=Yes; 2=No
Pathologies in pregnancy: specific	pat_gravid_spec	String	Entry valid only for newborn patients in cases where pathologies during pregnancy were communicated.
Type of delivery	modalita_parto	String	Entry valid only for newborn patients. Permitted values: 1=Eutocic delivery; 2=Vacuum extraction; 3=C-section
If C-section	taglio_cesareo	String	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Elective; 2=Emergency
C-section due to alteration in CTG	cesareo_s__1	Flag	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Yes; 0=No
C-section due to dystocia	cesareo_s__2	Flag	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Yes; 0=No



Variable	Variable name	Measurement unit	Notes
C-section due to pre C-section	cesareo_s__3	Flag	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Yes; 0=No
C-section due to umbilical cord prolapse	cesareo_s__4	Flag	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Yes; 0=No
C-section due to placental abruption	cesareo_s__5	Flag	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Yes; 0=No
C-section due to pre-eclampsia	cesareo_s__6	Flag	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Yes; 0=No
C-section due to growth restriction	cesareo_s__7	Flag	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Yes; 0=No
C-section due to other reason	cesareo_s__8	Flag	Entry valid only if the type of delivery entered above is 3 (C-section). Permitted values: 1=Yes; 0=No
C-section due to other reason: specify	cesareo_s8_spec	String	Entry valid only if the type of delivery entered above is "other reason". (cesareo_s



			__8=1). Permitted values: 1=Yes; 0=No
1-minute Apgar	apgar1	Numeric	Apgar score at the first minute after birth. Entry valid only if the patient is newborn. Range of permitted values: [0;10]
5-minute Apgar	apgar5	Numeric	Apgar score at the fifth minute after birth. Entry valid only if patient is newborn. Range of permitted values: [0;10]
Umbilical cord pH	primo_ph	String	
Hospitalization required at birth	rianimazione_nasc	String	Entry valid only if patient is newborn. Permitted values: 1=Yes; 0=No
Intubation	tubo	String	Entry valid only if patient is newborn. Permitted values: 1=Yes; 0=No
Chest compressions	compressioni	String	Entry valid only if patient is newborn. Permitted values: 1=Yes; 0=No

Variable	Variable name	Measurement unit	Notes
Presence of comorbidity	mal_cronica	String	Comorbidity means presence of any further medical condition that can reasonably be expected to last at least 12 months (or



			until patient's death) and which concerns one or more sites in such a way as to require specialized pediatric care and several periods in intensive care in tertiary hospital centers. Entry valid if age>=0. Permitted values: 1=Yes; 0=No
Cardiologic	mal_cronica0__1	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Metabolic	mal_cronica0__2	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Neurologic	mal_cronica0__3	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Neuromuscolar	mal_cronica0__4	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No



Onco-hematologic	mal_cronica0__5	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Renal	mal_cronica0__6	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Respiratory	mal_cronica0__7	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Syndromic	mal_cronica0__8	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Other	mal_cronica0__9	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Variable	Variable name	Measurement unit	Notes
Malformed/resulting from malformation	mal_cronica0__10	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1).



			Permitted values: 1=Yes; 0=No
Ex-premature	mal_cronica0__11	Flag	Entry valid if the presence of comorbidity has been found (mal_cronica=1). Permitted values: 1=Yes; 0=No
Gestational weeks at the time of birth for premature patients	sett_gest_ex_prem	Numeric	Entry valid if the comorbidity is linked to prematurity (mal_cronica_0__11=1) and age in years is less than or equal to one. Permitted values: 23-35.
Prophylaxis with Palizumab for premature patients	prof_paliviz	Numeric	Entry valid if the comorbidity is linked to prematurity (mal_cronica_0__11=1) and age in years is less than or equal to one. Permitted values: 1=Yes; 0=No
Use of home devices	niv_domicilio	Numeric	Entry valid if the comorbidity is linked to prematurity (mal_cronica_0__11=1) and patient is not newborn (is_prematuro=2). Permitted values: 1=Yes; 0=No



Typology of home device: mechanical ventilation	niv_domicilio_tipo __1	Flag	Entry valid if home device is used (niv_domicilio=1). Permitted values: 1=Yes; 0=No
Typology of home device: parenteral nutrition	niv_domicilio_tipo __2	Flag	Entry valid if home device is used (niv_domicilio=1). Permitted values: 1=Yes; 0=No
Typology of home device: enteral nutrition	niv_domicilio_tipo __3	Flag	Entry valid if home device is used (niv_domicilio=1). Permitted values: 1=Yes; 0=No
Typology of home device: cough assist	niv_domicilio_tipo __4	Flag	Entry valid if home device is used (niv_domicilio=1). Permitted values: 1=Yes; 0=No
Typology of home device: vagus nerve stimulator	niv_domicilio_tipo __5	Flag	Entry valid if home device is used (niv_domicilio=1). Permitted values: 1=Yes; 0=No
Typology of home device: diaphragm stimulator	niv_domicilio_tipo __6	Flag	Entry valid if home device is used (niv_domicilio=1). Permitted values: 1=Yes; 0=No
Typology of home device: aspirator	niv_domicilio_tipo __7	Flag	Entry valid if home device is used (niv_domicilio=1). Permitted values: 1=Yes; 0=No



Variable	Variable name	Measurement unit	Notes
Typology of home device: description	vent_mec_sp	String	Entry valid if home mechanical ventilation is used (niv_domicilio_tipo__1=1) Permitted values: 1=NIV; 2=Tramite tracheostomia
Central Nervous System (CNS)	polimal_spec__1	Flag	Entry valid in case of presence of results of malformation (mal_cronica0__10=1). Permitted values: 1=Yes; 0=No
Skeletal	polimal_spec__2	Flag	Entry valid in case of presence of results of malformation (mal_cronica0__10=1). Permitted values: 1=Yes; 0=No
Chest	polimal_spec__3	Flag	Entry valid in case of presence of results of malformation (mal_cronica0__10=1). Permitted values: 1=Yes; 0=No
Abdomen	polimal_spec__4	Flag	Entry valid in case of presence of results of malformation (mal_cronica0__10=1).



			Permitted values: 1=Yes; 0=No
Face	polimal_spec__5	Flag	Entry valid in case of presence of results of malformation (mal_cronica0__10=1). Permitted values: 1=Yes; 0=No
Other	polimal_spec__6	Flag	Entry valid in case of presence of results of malformation (mal_cronica0__10=1). Permitted values: 1=Yes; 0=No
Heart	polimal_spec__7	Flag	Entry valid in case of presence of results of malformation (mal_cronica0__10=1). Permitted values: 1=Yes; 0=No
Other results of malformation	polimal_ot	String	Entry valid in case of presence of other results of malformation (polimal_spec__6=1).
POPC score before hospitalization	popc	String	Entry valid if patient not newborn (is_prematuro=2). Permitted values POPC TABLE
Priority level for hospitalization	priorita		Permitted values TABLE PRIORITY_LEVEL

Weight (kg)	peso	Numeric	
Planned hospitalization	ricovero_progr	String	Entry valid only if the age at admission is greater than 7 (eta_giorni>7). Hospitalization for operations/procedures that can be postponed by at least 12 hours. Permitted values: 1=Yes; 0=No
Variable	Variable name	Measurement unit	Notes
Provenance	provenienza	String	Entry valid only if patient not newborn (is_prematuro=2). Permitted values TABLE_PROVENANCE
Ward	reparto_spec	String	Entry valid if coming from ward (provenienza=2). Permitted values TABLE_WARD
Other hospital	altro_osp	String	Entry valid if coming from ward (provenienza=4). Permitted values: 1=Intensive care; 2=Other ward; 3=ND
Typology	tipologia	String	Permitted values: 1=Surgical; 2=Medical; 3=injury, burns, poisoning, drowning, electrocution, smoke inhalation,



			hypothermia, suffocation
Date of operation	intervento_dt	Date	Entry valid only in case of surgical operation (tipologia=1). Format: DDMMYYYY
Type of surgery	tipo_chir	String	Entry valid only in case of surgical operation (tipologia=1). Permitted values: 1=Cardiovascular surgery; 2=Neurosurgery; 3=General surgery; 4=Transplant surgery; 5=Gynecological/obstetric surgery
General surgery: specification	tipo_chir_spec	String	Entry valid only in case of general surgical operations (tipo_chir=3). Permitted values TABLE_GENERAL SURGERY_SPEC
Electivity/ emergency	urgenza	String	Entry valid only in case of surgical operations (tipologia=1). Permitted values: 1=Elective surgery (surgery that can be postponed by at least 12 hours); 2=Emergency surgery
Reason for hospitalization	motivo_post_oper	String	Entry valid only in case of surgical operation



			(tipologia=1). Permitted values: 1=Post-operative observation; 2=Ventilator weaning; 3=Surgical complication; 4=Intensive care (hospitalization > 24 hours); 5=Complications from anaesthesia
If complications from surgery or anaesthesia, specify	compl_chir_spec	String	Entry valid only if hospitalized for complications (motivo_post_oper=3 oppure motivo_post_oper=5).
Variable	Variable name	Measurement unit	Notes
Main reason for hospitalization	motivo_ricovero	String	Entry valid only if medical typology (tipologia=2). Permitted values TABLE MAIN REASON FOR HOSPITALIZATION
If cardiocirculatory failure (not septic shock), specify	motivo_insufficienza	String	Entry valid if the main reason for hospitalization is cardiocirculatory failure - not septic shock (motivo_ricovero=4). Permitted values: 1=Cardiogenic; 2=Hypovolemic; 3=Anaphylactic; 4=Hemorrhagic



CVC insertion	procedure_inv__1	Flag	Entry valid if the hospitalization was planned for invasive procedures (motivo_ricovero=8). Permitted values: 1=Yes; 0=No
CVC insertion for hemodialysis	procedure_inv__2	Flag	Entry valid if the hospitalization was planned for invasive procedures (motivo_ricovero=8). Permitted values: 1=Yes; 0=No
Bronchoscopy	procedure_inv__3	Flag	Entry valid if the hospitalization was planned for invasive procedures (motivo_ricovero=8). Permitted values: 1=Yes; 0=No
PEG insertion	procedure_inv__4	Flag	Entry valid if the hospitalization was planned for invasive procedures (motivo_ricovero=8). Permitted values: 1=Yes; 0=No
Other procedures	procedure_inv__5	Flag	Entry valid if the hospitalization was planned for invasive procedures (motivo_ricovero=8). Permitted values: 1=Yes; 0=No

Other procedure, specify	altra_proc	String	
Anaphylaxis	tipo_trauma__1	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Drowning	tipo_trauma__2	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Poisoning	tipo_trauma__3	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Electrocution	tipo_trauma__4	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Ingestion	tipo_trauma__5	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Variable	Variable name	Measureme nt unit	Notes
CO intoxication	tipo_trauma__6	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Hypothermia - frostbite	tipo_trauma__7	Flag	Entry valid only if injury typology (tipologia=3).



			Permitted values: 1=Yes; 0=No
Suffocation	tipo_trauma__8	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Abdominal injury	tipo_trauma__9	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Bruised liver	tipo_trauma__10	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Bruised spleen	tipo_trauma__11	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Other bruising	tipo_trauma__12	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Concussion	tipo_trauma__13	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Injury, facial	tipo_trauma__14	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No



Injury, skeletal	tipo_trauma__15	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Injury, spinal	tipo_trauma__16	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Injury, chest	tipo_trauma__17	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Burns	tipo_trauma__18	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Other injury	tipo_trauma__19	Flag	Entry valid only if injury typology (tipologia=3). Permitted values: 1=Yes; 0=No
Other injury: specify	tipo_trauma19_sp ec	String	Entry valid only if other injury (tipo_trauma__19=1)
Other bruising: specify	tipo_trauma12_sp ec	String	Entry valid only if other bruising present (tipo_trauma__12=1)

Variable	Variable name	Measurement unit	Notes
Typology concussion	tipo_trauma13_sp ec2		Entry valid only if concussion present



			(tipo_trauma__13=1). Permitted values TABLE TYPOLOGY CONCUSSION
Cervical spine injury	tipo_trauma16_sp ec__1	Flag	Entry valid only if spinal injury present (tipologia=16). Permitted values: 1=Yes; 0=No
Other spinal injury	tipo_trauma16_sp ec__2	Flag	Entry valid only if spinal injury present (tipologia=16). Permitted values: 1=Yes; 0=No
SCIWORA	tipo_trauma16_sp ec__3	Flag	Entry valid only if spinal injury present (tipologia=16). Permitted values: 1=Yes; 0=No
Chest injury: specify	tipo_trauma17_sp ec	String	Entry valid only if chest injury present (tipologia__17=1). Permitted values: 1=Closed; 2=Open
Reason for hospitalization following injury	motivo_ric_traum a	String	Entry valid only if injury present (tipologia=3). Permitted values: 1=Altered consciousness; 2=Respiratory failure; 3=Cardiovascular failure (hemorrhagic shock); 4=Monitoring

3. Table ENTRY

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Primary key for "ENTRY" table. Medical chart ID number
Organ failure at admission	insuff_organo7	String	Permitted values: 0=Yes; 1=None
Respiratory	insuff_organo__1	Flag	Respiratory failure defined as requiring oxygen therapy or ventilation. Permitted values: 1=Yes; 0=No
Cardiovascular	insuff_organo__2	Flag	Cardiovascular failure defined as requiring amine. Permitted values: 1=Yes; 0=No
Acute neurological deficit	insuff_organo__3	Flag	Permitted values: 1=Yes; 0=No
Kidney failure	insuff_organo__4	Flag	Kidney failure defined as oliguria or altered kidney function. Permitted values: 1=Yes; 0=No

Variable	Variable name	Measurement unit	Notes
Hemocoagulation failure	insuff_organo__5	Flag	Hemocoagulation failure defined as altered coagulation or reduced platelets, platelet count \leq 80,000/mm ³ or a 50% decrease in value compared to the highest value of the three previous days O INR \geq 2. Permitted values: 1=Yes; 0=No



Hepatic failure	insuff_organo__6	Flag	Hepatic failure defined as total plasma bilirubin > 4 mg/dl in absence of hemolysis, hyperbilirubin in the newborn or primary pathology of the kidney or ALT over double the upper value for age. Permitted values: 1=Yes; 0=No
Neurological assessment	valut_neuro	String	Permitted values: 1=Pharmacological sedation; 2=AVPU scale
Specific AVPU scale	avpu	String	Entry valid only if neurological assessment carried out on AVPU scale (valut_neuro=2). Permitted values: 1=Alert; 2=Voice; 3=Pain; 4=Unconscious
Eye opening	occhi	String	Entry valid only for acute neurological deficit (insuff_organo__3=1). Permitted values: 1=Spontaneously; 2=To speech; 3=To pain; 4=Nil
Best verbal response	verbale	String	Entry valid only for acute neurological deficit (insuff_organo__3=1). Permitted values TABLE OF BEST VERBAL RESPONSE
Best motor response	motoria	String	Entry valid only for acute neurological deficit (insuff_organo__3=1). Permitted values TABLE OF BEST MOTOR RESPONSE
Score on Glasgow scale	glasgow	Numeri c	The GCS uses a scoring system with three criteria: best eye-opening (maximum 4 points), best verbal response (maximum 5 points) and best motor response (maximum 6 points).



			These scores are combined to come to a total score between 3 and 15.
Immunodeficiency	immuno	String	Permitted values: 1=Yes; 2=No
Typology of immunodeficiency	immuno_tipo	String	Entry valid only if immunodeficiency (immuno=1). Permitted values: 1=Congenital; 2=Acquired
Cyclosporin	immuno_tipoa_1	Flag	Entry valid only if acquired immunodeficiency (immuno_tipo=2). Permitted values: 1=Yes; 0=No
Tacrolimus	immuno_tipoa_2	Flag	Entry valid only if acquired immunodeficiency (immuno_tipo=2). Permitted values: 1=Yes; 0=No
T-cell depletion	immuno_tipoa_3	Flag	Entry valid only if acquired immunodeficiency (immuno_tipo=2). Permitted values: 1=Yes; 0=No
Variable	Variable name	Measurement unit	Notes
Steroid therapy	immuno_tipoa_4	Flag	Entry valid only if acquired immunodeficiency (immuno_tipo=2). Permitted values: 1=Yes; 0=No
TMO/HCST	immuno_tipoa_5	Flag	Entry valid only if acquired immunodeficiency (immuno_tipo=2). Permitted values: 1=Yes; 0=No
Other acquired immunodeficiency	immuno_tipoa_9	Flag	Entry valid only if acquired immunodeficiency (immuno_tipo=2). Permitted values: 1=Yes; 0=No



Other acquired immunodeficiency: specify	immuno_tipoa_sp ec	Entry valid only if other acquired immunodeficiency (immuno_tipoa__9=1).
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4. Table PIM - PEDIATRIC INDEX OF MORTALITY (Fill out only if age in years less than or equal to 16 or gestational weeks above or equal to 36 (age<16 or sett_gest>36))

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Primary key for "PIM" table. Medical chart ID number
Systolic arterial pressure (mmHg)	pas	Numeric	Indicate: 120 if known, 0 if cardiocirculatory arrest, 30 if shock with AP not measurable
Pupillary light response	r_pupillare	String	Used as indicator of cerebral function. Do not record if altered by pharmaceuticals, toxins, or local ocular damage. Permitted values: 1=Unknown/reactive; 2=Fixed mydriasis > 3 mm
VAM	vam	String	At any moment in the first hour (in cases of invasive and non-invasive ventilation). Permitted values: 1=Yes; 0=No
FiO2 in decimals	fio2_dec	Numeric	Permitted values: 0, 1
Arterial PaO2 (mmHg)	pao2	Numeric	Permitted values: 0-500
BE (mmol/L)	be	Numeric	Arterial or capillary BE, indicate number only if negative, indicate 0 if unknown.



			Permitted values: Min: -50, Max: 500
Lactate value (mEq/l)	valore_lattati	Numeric	
Lactates - site of measurement	tipo_lattati	String	Permitted values: 0=Arterial; 1=Venous; 2=Capillary
Planned admission in intensive care	uti	String	If admission can be delayed by more than 6 hours without adverse effects. Permitted values:1=Yes; 2=No

Variable	Variable name	Measurement unit	Notes
Hospitalization after surgery or invasive procedure as reason for admission to pediatric intensive care?	ch	String	Includes procedures in radiology or cardiac catheterization. Permitted values: 0=No; 1=Yes, after cardiac surgery with bypass; 2=Yes, after cardiac surgery without bypass; 3=Yes, after non-cardiac surgery
Very high risk diagnosis	diag_h_ar	String	Acute or chronic hepatic failure must be the main reason for admission to ICU. Permitted values TABLE VERY HIGH RISK DIAGNOSIS
High risk diagnosis	diag_ar	String	Hypoplastic left heart includes any age but only cases where a Norwood procedure was requested or equivalent. Permitted values TABLE HIGH RISK DIAGNOSIS
Low risk diagnosis	diag_br	String	The presence of obstructive sleep apnea is the main reason for hospitalization in ICU (and must be coded as surgical hospitalization). Permitted values TABLE HIGH RISK DIAGNOSIS
PIM2	pim2	Numeric	Calculated field
PIM3	pim3	Numeric	Calculated field

5. Table PELOD (to fill out only for patients with organ damage)

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Primary key for "PELOD" table. Medical chart ID number
id_pelod	contatore	Numeric	Primary key. Number of assessments per hospitalization
Date of assessment	valutazione_dt	Date	Format DDMMYYYY
Age in months	eta_mesi	Integer	
Eye opening	occhi3	String	Permitted values: 1=Spontaneous; 2=To speech; 3=To pain; 4=Nil
Best verbal response	verbale_3	String	Permitted values TABLE BEST VERBAL RESPONSE
Best motor response	motoria_3	String	Permitted values TABLE BEST MOTOR RESPONSE
Glasgow scale score	glasgow_3	Numeric	
Pupillary reaction	reazione_pupillare	String	Permitted values: 1=Both react ; 2=Both fixed
PaO2 (mmHg)	pao2_3	Numeric	Permitted values: Min: 0, Max: 500
FiO2 (%)	fio2	Numeric	Permitted values: Min: 0, Max: 1)
Rate of PaO2 in mmHg/FiO2	rapporto_pa_fi	Numeric	$\text{round}([\text{pao2_3}]/[\text{fio2}],2)$
Variable	Variable name	Measurement unit	Notes

PaCO2 (mmHg)	paco2	Numeric	
Mechanical ventilation	vent_mec	String	Permitted values: 1=Yes; 2=No
PAM (mmHg)	pam	Numeric	
Lactacidemia (mmol/L)	lattacidemia	Numeric	
Creatininemia (µmoli/l)	creatininemia	Numeric	
White blood cells (n/mm3)	glob_bianchi	Numeric	
PLT (n/mm3)	piastrine	Numeric	
PELOD score	pelod_score	Numeric	

6. Table ARISTOTLE SCALE (only for patients hospitalized after cardiosurgical operation)

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Primary key for "ARISTOTLE SCALE" table. Medical chart ID number
Procedure	procedura	String	Permitted values TABLE PROCEDURE
Mortality	mortalita	Numeric	Calculated
Morbidity	morbosita	Numeric	Calculated
Difficulty	difficolta	Numeric	Calculated
Base score	segno_di_base	Numeric	mortalita+morbosita+difficolta Permitted values: 1= Mortality: < 1% Morbidity: ICU 0-24H Difficulty: elementary; 2 = Mortality: 1-5% Morbidity:



			<p>ICU 1D-3D Difficulty: easy ; 3=Mortality: 5-10% Morbidity: ICU 4D-7D Difficulty: medium; 4=Mortality: 10-20% Morbidity: ICU 1W-2W Difficulty: significant; 5=Mortality: > 20% Morbidity: ICU > 2W Difficulty: most serious</p>
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7. Table HOSPITALIZATION

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Primary key for "HOSPITALIZATION" table. Medical chart ID number
Organ deficit arising during hospitalization	insufficienza	String	Permitted values: 1=Yes; 2=No
Respiratory	insuff_organo_2_1	Flag	Entry valid only if organ failure occurred during hospitalization. Defined as requiring oxygen therapy or ventilation. Permitted values: 1=Yes; 0=No
Cardiovascular	insuff_organo_2_2	Flag	Entry valid only if organ failure occurred during hospitalization. Defined as requiring amine. Permitted values: 1=Yes; 0=No
Acute neurological	insuff_organo_2_3	Flag	Entry valid only if organ failure occurred during hospitalization.



			Permitted values: 1=Yes; 0=No
Renal	insuff_organo_2__4	Flag	Entry valid only if organ failure occurred during hospitalization. Defined as oliguria or altered kidney functionality. Permitted values: 1=Yes; 0=No
Hemocoagulative	insuff_organo_2__5	Flag	Entry valid only if organ failure occurred during hospitalization. Defined as altered coagulation or reduction of platelets, platelet count $\leq 80,000/mm^3$ or a 50% decrease compared to the highest value in the three preceding days O INR ≥ 2 . Permitted values: 1=Yes; 0=No
Hepatic	insuff_organo_2__6	Flag	Entry valid only if organ failure occurred during hospitalization. Defined as total plasma bilirubin $> 4 mg/dl$ without hemolysis, neonatal hyperbilirubin or primary liver pathology or ALT exceeding twice the threshold value by age. Permitted values: 1=Yes; 0=No
Date of cardiovascular failure	insuff_organo2_dt	Date	Entry valid only in case of cardiovascular failure (insuff_organo_2__1=1). Date format DDMMYYYY



Typology of cardiovascular failure	insuff_organo2_sp	String	Entry valid only in case of cardiovascular failure (insuff_organo_2__1=1). Permitted values: 1=Cardiogenic shock; 2=Hemorrhagic / hypovolemic shock ; 3=Septic shock
Variable	Variable name	Measurement unit	Notes
Date of neurological failure	insuff_organo3_dt	Date	Entry valid only in case of neurological failure (insuff_organo_3__1=1). Date format DDMMYYYY
Eye opening	occhi_2	String	Entry valid only in case of neurological failure (insuff_organo_3__1=1). Permitted values: 1=Spontaneous; 2=To speech; 3=To pain; 4=Nil
Best verbal response	verbale_2	String	Entry valid only in case of neurological failure (insuff_organo_3__1=1). Permitted values TABLE BEST VERBAL RESPONSE
Best motor response	motoria_2	String	Entry valid only in case of neurological failure (insuff_organo_3__1=1). Permitted values TABLE BEST MOTOR RESPONSE



Score on Glasgow scale	glasgow_2	Numeric	Entry valid only in case of neurological failure (insuff_organo_3__1=1).
Date of kidney failure	insuff_organo4_dt	Date	Entry valid only in case of kidney failure (insuff_organo_4__1=1). Date format DDMMYYYY
Dialysis	insuff_organo4_sp	String	Entry valid only in case of kidney failure (insuff_organo_4__1=1). Permitted values; 1=Yes; 2=No
Pathologies during hospitalization	nuove_patologie	String	Permitted values; 1=Yes; 2=No
Main diagnosis	diagnosi_degenza	String	Entry valid only in case of new pathologies (nuove_patologie =1). Permitted values TABLE MAIN DIAGNOSIS
Typology of accident	incidenti_deg	String	Entry valid only in case of accident during hospitalization (diagnosi_degenza=1). Permitted values TABLE ACCIDENT TYPOLOGY
Typology of congenital cardiovascular	cardio_cong_deg	String	Entry valid only in case of congenital cardiovascular pathology (diagnosi_degenza=2). Permitted values TABLE CONGENITAL CARDIOVASCULAR TYPOLOGY



Typology of acquired cardiovascular	cardio_acq_deg	String	Entry valid only if congenital cardiovascular pathology (diagnosi_degenza=3). Permitted values TABLE TYPOLOGY ACQUIRED CARDIOVASCOLARE ACQUISITO
Typology neurological	neuro_deg	String	Entry valid only in case of neurological pathology (diagnosi_degenza=4). Permitted values TABLE TYPOLOGY NEUROLOGICAL
Variable	Variable name	Measurement unit	Notes
Typology respiratory, upper	resp_sup_deg	String	Entry valid only in case of respiratory pathology - upper respiratory tract (diagnosi_degenza=5). Permitted values TABLE TYPOLOGY UPPER RESPIRATORY
Typology respiratory, lower	resp_inf_deg	String	Entry valid only in case of respiratory pathology - lower respiratory tract (diagnosi_degenza=6). Permitted values TABLE TYPOLOGY LOWER RESPIRATORY
Typology respiratory, other	resp_altro_deg	String	Entry valid only in case of other respiratory pathology



			(diagnosi_degenza=7). Permitted values TABLE RESPIRATORY TYPOLOGY OTHER
Typology kidney	renale_deg	String	Entry valid only in case of renal pathology (diagnosi_degenza=8). Permitted values TABLE RENAL TYPOLOGY
Typology gastrointestinal	gastro_deg	String	Entry valid only in case of gastrointestinal pathology (diagnosi_degenza=9). Permitted values TABLE GASTROINTESTINAL TYPOLGY
Typology miscellaneous	misc_deg	String	Entry valid only in case of pathology miscellaneous (diagnosi_degenza=10). Permitted values TABLE TYPOLGY MISCELLANEOUS
Procedures	procedure_rico	String	Permitted values; 1=Yes; 2=No
High-flow O2 therapy (HFNC)	procedure_ric_1	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Ventilation	procedure_ric_2	Flag	Entry valid if procedures carried out during hospitalization



			(procedure_rico=1). Permitted values: 1=Yes; 0=No
Vascular access	procedure_ric__3	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Low-flow O2 therapy	procedure_ric__4	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Pericardic drainage	procedure_ric__5	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Variable	Variable name	Measurement unit	Notes
Placement peg	procedure_ric__6	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Placement of thoracic drainage	procedure_ric__7	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No



Placement of abdominal drainage	procedure_ric__8	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Bronchoscopy	procedure_ric__10	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Tracheotomy	procedure_ric__11	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Cardiac catheterization	procedure_ric__12	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Surgical operation	procedure_ric__13	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Dialysis	procedure_ric__14	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No



ECMO	procedure_ric__15	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
PIC monitoring	procedure_ric__16	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
PGE infusion	procedure_ric__17	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
VAD	procedure_ric__18	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
Variable	Variable name	Measurement unit	Notes
Rashkind	procedure_ric__19	Flag	Entry valid if procedures carried out during hospitalization (procedure_rico=1). Permitted values: 1=Yes; 0=No
RCP	procedure_ric__20	Flag	Entry valid if procedures carried out during hospitalization



			(procedure_rico=1). Permitted values: 1=Yes; 0=No
Date PIC monitoring started	procedure_ric16dal_dt	Date	Entry valid if PIC monitoring carried out during hospitalization (procedure_ric__16=1). Date format DDMMYYYY
Date PIC monitoring ended	procedure_ric16al_dt	Date	Entry valid if PIC monitoring carried out during hospitalization (procedure_ric__16=1). Date format DDMMYYYY
Date CPR	procedure_ric20_dt	Date	Entry valid if CPR carried out during hospitalization (procedure_ric__20=1). Date format DDMMYYYY
Duration of PCR (in minutes)	procedure_ric20_dur	Numeric	Entry valid if CPR carried out during hospitalization (procedure_ric__20=1).
Adrenaline	procedure_ric20_far__1	Flag	Entry valid if CPR carried out during hospitalization (procedure_ric__20=1). Permitted values: 1=Yes; 0=No
Atropine	procedure_ric20_far__2	Flag	Entry valid if CPR carried out during hospitalization (procedure_ric__20=1). Permitted values: 1=Yes; 0=No
Amiodarone	procedure_ric20_far__3	Flag	Entry valid if CPR carried out during hospitalization



			(procedure_ric__20=1). Permitted values: 1=Yes; 0=No
Calcium chloride	procedure_ric20_far__4	Flag	Entry valid if CPR carried out during hospitalization (procedure_ric__20=1). Permitted values: 1=Yes; 0=No
Sodium bicarbonato	procedure_ric20_far__5	Flag	Entry valid if CPR carried out during hospitalization (procedure_ric__20=1). Permitted values: 1=Yes; 0=No
Glucose	procedure_ric20_far__6	Flag	Entry valid if CPR carried out during hospitalization (procedure_ric__20=1). Permitted values: 1=Yes; 0=No

Variable	Variable name	Measurement unit	Notes
Defibrillation	procedure_ric20_far__7	Flag	Entry valid if CPR carried out during hospitalization (procedure_ric__20=1). Permitted values: 1=Yes; 0=No
Typology ECMO	procedure_ric15_sp	String	Entry valid if ECMO carried out during hospitalization (procedure_ric__15=1). Permitted values: 1=VA; 2=VV; 3=VA/VV
Date ECMO started	procedure_ric15dal_dt	Date	Entry valid if ECMO carried out during hospitalization (procedure_ric__15=1). Date format DDMMYYYY



Date ECMO ended	procedure_ric15al_dt	Date	Entry valid if ECMO carried out during hospitalization (procedure_ric__15=1). Date format DDMMYYYY
Date Rashkind	procedure_ric19_dt	Date	Entry valid if Rashkind carried out during hospitalization (procedure_ric__19=1). Date format DDMMYYYY
Date VAL started	procedure_ric18dal_dt	Date	Entry valid if VAL carried out during hospitalization (procedure_ric__18=1). Date format DDMMYYYY
Date VAL ended	procedure_ric18al_dt	Date	Entry valid if VAL carried out during hospitalization (procedure_ric__18=1). Date format DDMMYYYY
Date of cardiac catheterization	procedure_ric12_dt	Date	Entry valid if cardiac catheterization carried out during hospitalization (procedure_ric__12=1). Date format DDMMYYYY
Typology cardiac catheterization	procedure_ric12_sp	String	Entry valid if cardiac catheterization carried out during hospitalization (procedure_ric__12=1). Permitted values 1=Diagnostico; 2=Operativo
Typology bronchoscopy	procedure_ric10_sp	String	Entry valid if bronchoscopy carried out during hospitalization

			(procedure_ric__10=1). Permitted values 1=Diagnostica; 2=Operativa
Date tracheotomy	procedure_ric11_dt	Date	Entry valid if tracheotomy carried out during hospitalization (procedure_ric__11=1). Date format DDMMYYYY
Typology tracheotomy	procedure_ric11_sp	String	Entry valid if tracheotomy carried out during hospitalization (procedure_ric__11=1). Permitted values 1= Chirurgica; 2= Percutanea
Variable	Variable name	Measureme nt unit	Notes
Date of surgical procedure	procedure_ric13_dt	Date	Entry valid if surgical procedure carried out during hospitalization (procedure_ric__13=1). Date format DDMMYYYY
Typology of surgical procedure	procedure_ric13_sp	String	Entry valid if surgical procedure carried out during hospitalization (procedure_ric__13=1).
Type of vascular access (1)	cvc_sede1	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted values TABLE TYPE OF VASCULAR ACCESS



Vascular access at admission	cvc_ingr1	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted values; 1=Yes; 2=No
Date vascular access started	procedure_ric3dal1_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Date vascular access ended	procedure_ric3al1_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Guided ECO	cvc_sede1_eco	String	Entry valid if vascular access carried out during hospitalization [procedure_ric(3)]=1 e ([cvc_sede1]=1 or [cvc_sede1]=2 or [cvc_sede1]=3 or [cvc_sede1]=4 or [cvc_sede1]=5 or [cvc_sede1]=6 or [cvc_sede1]=7 or [cvc_sede1]=8 or [cvc_sede1]=9). Permitted values; 1=Yes; 2=No
Type of vascular access (2)	cvc_sede2	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted

			values TABLE TYPE OF VASCULAR ACCESS
Vascular access at admission	cvc_ingr2	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted values; 1=Yes; 2=No
Date vascular access started	procedure_ric3dal2_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Date vascular access ended	procedure_ric3al2_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Variable	Variable name	Measurement unit	Notes
Guided ECO	cvc_sede2_eco	String	Entry valid if [cvc_sede2] <> "" and ([cvc_sede2]=1 or [cvc_sede2]=2 or [cvc_sede2]=3 or [cvc_sede2]=4 or [cvc_sede2]=5 or [cvc_sede2]=6 or [cvc_sede2]=7 or [cvc_sede2]=8 or [cvc_sede2]=9). Permitted values; 1=Yes; 2=No
Type of vascular access (3)	cvc_sede3	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted

			values TABLE TYPE OF VASCULAR ACCESS
Vascular access at admission	cvc_ingr3	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted values; 1=Yes; 2=No
Date vascular access started	procedure_ric3dal3_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Date vascular access ended	procedure_ric3al3_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Guided ECO	cvc_sede3_eco	String	Entry valid if [cvc_sede3] <> "" and ([cvc_sede3]=1 or [cvc_sede3]=2 or [cvc_sede3]=3 or [cvc_sede3]=4 or [cvc_sede3]=5 or [cvc_sede3]=6 or [cvc_sede3]=7 or [cvc_sede3]=8 or [cvc_sede3]=9). Permitted values; 1=Yes; 2=No
Type of vascular access (4)	cvc_sede4	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted values TABLE TYPE VASCULAR ACCESS

Vascular access at admission	cvc_ingr4	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted values; 1=Yes; 2=No
Date vascular access started	procedure_ric3da14_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Date vascular access ended	procedure_ric3a14_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Variable	Variable name	Measurement unit	Notes
Guided ECO	cvc_sede4_eco	String	Entry valid if [[cvc_sede4] <> "" and ([cvc_sede4]=1 or [cvc_sede4]=2 or [cvc_sede4]=3 or [cvc_sede4]=4 or [cvc_sede4]=5 or [cvc_sede4]=6 or [cvc_sede4]=7 or [cvc_sede4]=8 or [cvc_sede4]=9). Permitted values; 1=Yes; 2=No
Typo of vascular access (5)	cvc_sede5	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted values TABLE TYPE VASCULAR ACCESS



Vascular access at admission	cvc_ingr5	String	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Permitted values; 1=Yes; 2=No
Date vascular access started	procedure_ric3dal5_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Date vascular access ended	procedure_ric3al5_dt	Date	Entry valid if vascular access carried out during hospitalization (procedure_ric__3=1). Date format DDMMYYYY
Guided ECO	cvc_sede5_eco	String	Entry valid if [cvc_sede5] <> "" and ([cvc_sede5]=1 or [cvc_sede5]=2 or [cvc_sede5]=3 or [cvc_sede5]=4 or [cvc_sede5]=5 or [cvc_sede5]=6 or [cvc_sede5]=7 or [cvc_sede5]=8 or [cvc_sede5]=9). Permitted values; 1=Yes; 2=No
SCUF (simple ultrafiltration)	scuf	String	Entry valid if simple dialysis carried out during hospitalization (procedure_ric__14=1). Permitted values; 1=Yes; 2=No
Date SCUF started	scufdal_dt	Date	Entry valid if simple ultrafiltration carried out during

			hospitalization (scuf =1). Date format DDMMYYYY
Date SCUF ended	scufal_dt	Date	Entry valid if simple ultrafiltration carried out during hospitalization (scuf =1). Date format DDMMYYYY
CAVH/CVVH (hemofiltration)	cvvh	String	Entry valid if dialysis carried out during hospitalization (procedure_ric__14=1). Permitted values; 1=Yes; 2=No
Date hemofiltration started	cvvhda_dt	Date	Entry valid if hemofiltration carried out during hospitalization (cvvh =1). Date format DDMMYYYY
Variable	Variable name	Measurement unit	Notes
Date hemofiltration ended	cvvhal_dt	Date	Entry valid if hemofiltration carried out during hospitalization (cvvh =1). Date format DDMMYYYY
Hemofiltration with replacement	cvvh_rimpiazzo	String	Entry valid if hemodiafiltration carried out during hospitalization (cvvh =1). Permitted values; 1=Yes; 2=No
Site of replacement	cvvh_filtro	String	Entry valid if hemofiltration with replacement carried out (cvvh_rimpiazzo =1). Permitted values: 1=Pre filtro; 2=Post filtro



CAVH/CVVH D (hemodiafiltration)	cavh	String	Entry valid if dialysis carried out during hospitalization (procedure_ric__14=1). Permitted values; 1=Yes; 2=No
Date hemodiafiltration started	cavhdal_dt	Date	Entry valid if hemodiafiltration carried out during hospitalization (cvh =1). Date format DDMMYYYY
Date hemodiafiltration ended	cavhal_dt	Date	Entry valid if hemodiafiltration during hospitalization (cvh =1). Date format DDMMYYYY
Other typology of dialysis	dialisi	String	Entry valid if dialysis carried out during hospitalization (procedure_ric__14=1). Permitted values; 1=Hemodialysis; 2=Peritoneal dialysis; 3=Plasmapheresis; 4=MARS; 5=Other; 6=None
Other dialysis: specify	dialisi_sp	String	Entry valid if other dialysis carried out during hospitalization (dialisi=5).
Sedation	sedazione	String	Permitted values; 1=Yes; 2=No
Number of days of analgosedation	sedaz_dd	Numeric	Entry valid only if sedated (sedazione=1). Permitted values: Min=0, Max=99
Scale of analgosedation	scala	String	Entry valid only if sedated (sedazione=1). Permitted values: 1=Comfort; 2=Comfort B; 3=Other

Was it a difficult case of analgosedation?	sedaz_diff	String	Entry valid only if sedated (sedazione=1). Permitted values; 1=Yes; 2=No
Opiate rotation used	opp_rotaz	String	Entry valid only if difficult case of analgosedation (sedaz_diff =1). Permitted values; 1=Yes; 2=No
Gradual suspension used	sosp_grad	String	Entry valid only if difficult case of analgosedation (sedaz_diff =1). Permitted values; 1=Yes; 2=No
Typology of gradual suspension	sosp_grad_des	String	Entry valid only gradual suspension used (sosp_grad =1). Permitted values TABLE GRADUAL SUSPENSION
Variable	Variable name	Measurement unit	Notes
Signs of abstinence	astin	String	Entry valid only if difficult case of analgosedation (sedaz_diff =1). Permitted values; 1=Yes; 2=No
Assessment of signs of abstinence	astin_val	String	Entry valid only if signs of abstinence (astin =1). Permitted values: 1=Finnegan scale; 2=WAT-1; 3=Other
Assessment of signs of abstinence, other: specify	astin_val_al	String	Entry valid only if other typology of signs of abstinence (astin_val =3)



Signs of delirium	delirium	String	Entry valid only if difficult case of analgosedation (sedaz_diff =1). Permitted values; 1=Yes; 2=No
Assessment of signs of delirium	delirium_valut	String	Entry valid only if signs of delirium (delirium =1). Permitted values: 1=CAPD; 2=P-CAM ICU; 3=Other
Enteral	nutrizione__1	Flag	Permitted values: 1=Yes; 0=No
NPT	nutrizione__2	Flag	Permitted values: 1=Yes; 0=No
Per os	nutrizione__3	Flag	Permitted values: 1=Yes; 0=No
Only hydration	nutrizione__4	Flag	Permitted values: 1=Yes; 0=No
Typology enteral nutrition	enterale_2	String	Entry valid if enteral nutrition used (nutrizione__1=1). Permitted values: 1=Gastric route; 2=Duodenal route
Date parenteral nutrition started	parenterale_dal	Date	Entry valid if parenteral nutrition used (nutrizione__2=1). Date format DDMMYYYY
Date parenteral nutrition ended	parenterale_al	Date	Entry valid if parenteral nutrition used (nutrizione__2=1). Date format DDMMYYYY
Use of gastroprotection	gastroprotettori	String	Permitted values; 1=Yes; 2=No

8. Table VENTILATION PROCEDURES

Variable	Variable name	Measurement unit	Notes
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Medical chart ID number	n_cartella	String	Primary key for "VENTILATION PROCEDURES" table.
Ventilation (%)	ventilazione	Numeric	
Primary restrictive (pulmonary)	vam0__1	Flag	Permitted values: 1=Yes; 0=No
Secondary restrictive (extra-pulmonary)	vam0__2	Flag	Permitted values: 1=Yes; 0=No
Obstructive	vam0__3	Flag	Permitted values: 1=Yes; 0=No
Altered consciousness (coma)	vam0__4	Flag	Permitted values: 1=Yes; 0=No
Variable	Variable name	Measurement unit	Notes
Sepsis / shock / pulmonary hypertension	vam0__5	Flag	Permitted values: 1=Yes; 0=No
Post-operative / invasive procedure assistance	vam0__6	Flag	Permitted values: 1=Yes; 0=No
Fill out PaO ₂ , FiO ₂ , SaO ₂ and MAP when available; record worst result measured during ventilation. Parameters must be	peggior_rapporto	Numeric	Enter value if [vam0(1)]=1 or [vam0(2)]=1.

contemporaneous: i.e. the worst PaO2 with the FiO2 and MAP at that same time point.			
PaO2	pao2_2	Numeric	Enter value if secondary restrictive (vam0_2=1). Indicate the worst value during ventilation. Permitted values: Min: 0, Max: 600
FiO2	fio2_2	Numeric	Enter value if secondary restrictive (vam0_2=1). Indicate the worst value during ventilation. Permitted values: Min: 0, Max: 1
SaO2	sao2	Numeric	Enter value if secondary restrictive (vam0_2=1). Indicate the worst value during ventilation.
Mean Airway Pressure (MAP)	map	Numeric	Enter value if primary or secondary restrictive (vam0_1=1 o vam0_2=1). Indicate the worst value during ventilation. Permitted values: Min: 5, Max: 50
PaO2 / FiO2	p_f	Numeric	Calculation: [pao2_2]/[fio2_2]
SaO2 / FiO2	s_f	Numeric	Calculation: [sao2]/[fio2_2]
Oxygenation Index (OI)	oi	Numeric	Calculation: [fio2_2]*[map]/[pao2_2]
Start of ventilation during hospitalization	vent_iniz	String	Permitted values: 1=Before entering intensive care; 2=At admission (within first hour) in

			intensive care; 3=During hospitalization in intensive care
Date ventilation started	vent_iniz_dt	Date	Entry valid if ventilation begun before hospitalization (vent_iniz=1). Date format DDMMYYYY
Mode of ventilation	mod_ventilazione	String	

Variable	Variable name	Measurement unit	Notes
Technique used	niv_it	String	Permitted values: 1=NIV; 2=IT; 3=NIV and IT
First technique used	tecnica_1	String	Entry valid if NIV and IT used (niv_it=3). Permitted values: 1=NIV; 2=IT
Date NIV started	niv1del_dt	Date	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Date format DDMMYYYY
Time NIV started	niv1dal_hh	Hour	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Format HHMM
Date NIV ended	niv1al_dt	Date	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Date format DDMMYYYY
Time NIV ended	niv1al_hh	Hour	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Format HHMM
Mode of NIV ventilation	niv1_modalita	String	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values: 1=PSV/BiPAP (Ipap-Epap); 2=A-PCV; 3=CPAP; 4=NAVA



Nasal mask	niv1_interf__1	Flag	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values: 1=Yes; 0=No
Face mask (oro-nasal)	niv1_interf__2	Flag	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values: 1=Yes; 0=No
Nasal cannula	niv1_interf__3	Flag	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values: 1=Yes; 0=No
Helmet	niv1_interf__4	Flag	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values: 1=Yes; 0=No
Full face (including eyes)	niv1_interf__5	Flag	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values: 1=Yes; 0=No
Other	niv1_interf__6	Flag	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values: 1=Yes; 0=No
Use of cough machine	niv1_tosse	String	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values; 1=Yes; 2=No
NIV failure	niv1_fallimento	String	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values; 1=Yes; 2=No
Hypercapnia	niv1_fallimento_d__1	Flag	Entry valid if NIV failure (niv1_fallimento=1). Permitted values: 1=Yes; 0=No
Hypoxia	niv1_fallimento_d__2	Flag	Entry valid if NIV failure (niv1_fallimento=1). Permitted values: 1=Yes; 0=No



Variable	Variable name	Measurement unit	Notes
Blockage secretions	niv1_fallimento_d__3	Flag	Entry valid if NIV failure (niv1_fallimento=1). Permitted values: 1=Yes; 0=No
Agitation	niv1_fallimento_d__4	Flag	Entry valid if NIV failure (niv1_fallimento=1). Permitted values: 1=Yes; 0=No
Intolerance	niv1_fallimento_d__5	Flag	Entry valid if NIV failure (niv1_fallimento=1). Permitted values: 1=Yes; 0=No
Ineffective coughing	niv1_fallimento_d__6	Flag	Entry valid if NIV failure (niv1_fallimento=1). Permitted values: 1=Yes; 0=No
Execution of invasive / surgical maneuvers	niv1_fallimento_d__7	Flag	Entry valid if NIV failure (niv1_fallimento=1). Permitted values: 1=Yes; 0=No
Complications from mechanical ventilation	niv1_complic	String	Entry valid if NIV used (niv_it=1 or tecnica_1=1). Permitted values; 1=Yes; 2=No
Typology complications from mechanical ventilation	niv1_complic_sp	String	Entry valid if complications from mechanical ventilation (niv1_complic =1). Permitted values :1=Air leak syndrom; 2=Facial decubitus; 3=Tracheal granuloma; 4=Other complication; 5=Glottis edema



Other typology complications from mechanical ventilation	niv1_complic_sp2	String	Entry valid if complications from mechanical ventilation (niv1_complic_sp=4).
Date start	it1del_dt	Date	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1. Format DDMMYYYY
Time start	it1dal_hh	Hour	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1. Format HHMM
Date end	it1al_dt	Date	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1. Format DDMMYYYY
Time end	it1al_hh	Hour	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1. Format HHMM
Use of nitrous oxide	it1_no	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1, Permitted values: 1=Yes; 2=No
Use of HFOV	it1_hfov	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1, Permitted values: 1=Yes; 2=No
Use of NAVA	it1_nava	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1, Permitted values: 1=Yes; 2=No
Use of cough machine	it1_tosse	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1, Permitted values: 1=Yes; 2=No

Use of curarization	it1_curariz	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1, Permitted values: 1=Yes; 2=No
Variable	Variable name	Measurement unit	Notes
Use of surfactant	it1_surfactante	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1. Permitted values: 1=Yes; 2=No
Extubation	it1_estubazione	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1. Permitted values: 1=Planned; 2=Unplanned/accidental; 3=Not carried out
Reason	it1_est_motivo	String	Entry valid if extubation not carried out (it1_estubazione=3). Permitted values: 1=Tracheotomy; 2=Death; 3=Transfer to other ward / hospital
Use of NIV post extubation	it1_post_est	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1. Permitted values: 1=Yes; 2=No
Complications from mechanical ventilation	it1_complic	String	Entry valid if [niv_it]=2 or [niv_it]=3 or [niv1_fallimento]=1. Permitted values: 1=Yes; 2=No
Typology complications following mechanical ventilation	it1_complic_sp	it1_complic_sp2	Entry valid if complications following mechanical ventilation (it1_complic=1). Permitted values: 1=Air leak syndrome; 2=Facial decubitus; 3=Tracheal granuloma; 4=Other complication; 5=Glottis edema

Other typology complications following mechanical ventilation	it1_complic_sp2	String	Entry valid if other complications following mechanical ventilation (it1_complic_sp=4).
Date NIV started	niv2del_dt	Date	Entry valid if (it1_post_est=1 or tecnica_1=2). Date format DDMMYYYY
Time NIV started	niv2dal_hh	Hour	Entry valid if (it1_post_est=1 or tecnica_1=2). Format HHMM
Date NIV ended	niv2al_dt	Date	Entry valid if (it1_post_est=1 or tecnica_1=2). Date format DDMMYYYY
Time NIV ended	niv2al_hh	Hour	Entry valid if (it1_post_est=1 or tecnica_1=2). Format HHMM
Mode of NIV ventilation	niv2_modalita	String	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values: 1=PSV/BiPAP (Ipap-Epap); 2=A-PCV; 3=CPAP; 4=NAVA
Nasal mask	niv2_interf__1	Flag	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values: 1=Yes; 0=No
Face mask (oro-nasal)	niv2_interf__2	Flag	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values: 1=Yes; 0=No
Nasal cannula	niv2_interf__3	Flag	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values: 1=Yes; 0=No
Variable	Variable name	Measurement unit	Notes



Helmet	niv2_interf__4	Flag	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values: 1=Yes; 0=No
Full face (including eyes)	niv2_interf__5	Flag	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values: 1=Yes; 0=No
Other	niv2_interf__6	Flag	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values: 1=Yes; 0=No
Use of cough machine	niv2_tosse	String	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values; 1=Yes; 2=No
NIV failure	niv2_fallimento	String	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values; 1=Yes; 2=No
Hypercapnia	niv2_fallimento_d__1	Flag	Entry valid if (niv2_fallimento=1). Permitted values: 1=Yes; 0=No
Hypoxia	niv2_fallimento_d__2	Flag	Entry valid if (niv2_fallimento=1). Permitted values: 1=Yes; 0=No
Blockage secretions	niv2_fallimento_d__3	Flag	Entry valid if (niv2_fallimento=1). Permitted values: 1=Yes; 0=No
Agitation	niv2_fallimento_d__4	Flag	Entry valid if (niv2_fallimento=1). Permitted values: 1=Yes; 0=No
Intolerance	niv2_fallimento_d__5	Flag	Entry valid if (niv2_fallimento=1). Permitted values: 1=Yes; 0=No
Ineffective coughing	niv2_fallimento_d__6	Flag	Entry valid if (niv2_fallimento=1). Permitted values: 1=Yes; 0=No
Execution of invasive /	niv2_fallimento_d__7	Flag	Entry valid if (niv2_fallimento=1). Permitted values: 1=Yes; 0=No

surgical maneuvers			
Complications from mechanical ventilation	niv2_complic	String	Entry valid if (it1_post_est=1 or tecnica_1=2). Permitted values; 1=Yes; 2=No
Typology complications from mechanical ventilation	niv2_complic_sp	String	Entry valid if inv2_compl=1. Permitted values :1=Air leak syndrom; 2=Facial decubitus; 3=Tracheal granuloma; 4=Other complication; 5=Glottis edema
Other typology complications from mechanical ventilation	niv2_complic_sp2	String	Entry valid if complications from mechanical ventilation (niv2_complic_sp=4).
Date start	it2del_dt	Date	Entry valid if [niv2_fallimento]=1. Format DDMMYYYY
Time start	it2dal_hh	Hour	Entry valid if [niv2_fallimento]=1. Format HHMM
Date end	it2al_dt	Date	Entry valid if [niv2_fallimento]=1. Format DDMMYYYY
Time end	it2al_hh	Hour	Entry valid if [niv2_fallimento]=1. Format HHMM
Variable	Variable name	Measureme nt unit	Notes
Use of Nitrous oxide	it2_no	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of HFOV	it2_hfov	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of NAVA	it2_nava	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No



Use of cough machine	it2_tosse	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of curarization	it2_curariz	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of surfactant	it2_surfactante	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No
Extubation	it2_estubazione	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Planned; 2=Unplanned/accidental; 3=Not carried out
Reason	it2_est_motivo	String	Entry valid if extubation not carried out (it2_estubazione=3). Permitted values: 1=Tracheotomy; 2=Death; 3=Transfer to other ward / hospital
Use of NIV post extubation	it2_post_est	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No
Complications from mechanical ventilation	it2_complic	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No
Typology complications following mechanical ventilation	it2_complic_sp	it1_complic_sp2	Entry valid if complications following mechanical ventilation (it2_complic=1). Permitted values: 1=Air leak syndrome; 2=Facial decubitus; 3=Tracheal granuloma; 4=Other complication; 5=Glottis edema
Other typology complications following	it2_complic_sp2	String	Entry valid if other complications following mechanical ventilation (it2_complic_sp=4).

mechanical ventilation			
Date NIV started	niv3del_dt	Date	Entry valid if [it2_post_est]=1. Date format DDMMYYYY
Time NIV started	niv3dal_hh	Hour	Entry valid if [it2_post_est]=1. Format HHMM
Date NIV ended	niv3al_dt	Date	Entry valid if [it2_post_est]=1. Date format DDMMYYYY
Time NIV ended	niv3al_hh	Hour	Entry valid if [it2_post_est]=1. Format HHMM
Mode of NIV ventilation	niv3_modalita	String	Entry valid if [it2_post_est]=1. Permitted values: 1=PSV/BiPAP (Ipap-Epap); 2=A-PCV; 3=CPAP; 4=NAVA
Nasal mask	niv3_interf__1	Flag	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No
Variable	Variable name	Measurement unit	Notes
Face mask (oro-nasal)	niv3_interf__2	Flag	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No
Nasal cannula	niv3_interf__3	Flag	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No
Helmet	niv3_interf__4	Flag	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No
Full face (including eyes)	niv3_interf__5	Flag	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No
Other	niv3_interf__6	Flag	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No
Use of cough machine	niv3_tosse	String	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No



NIV failure	niv3_fallimento	String	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No
Hypercapnia	niv3_fallimento_d__1	Flag	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 0=No
Hypoxia	niv3_fallimento_d__2	Flag	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 0=No
Blockage secretions	niv3_fallimento_d__3	Flag	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 0=No
Agitation	niv3_fallimento_d__4	Flag	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 0=No
Intolerance	niv3_fallimento_d__5	Flag	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 0=No
Ineffective coughing	niv3_fallimento_d__6	Flag	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 0=No
Execution of invasive / surgical maneuvers	niv3_fallimento_d__7	Flag	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 0=No
Complications from mechanical ventilation	niv3_complic	String	Entry valid if [it2_post_est]=1. Permitted values; 1=Yes; 2=No
Typology complications from mechanical ventilation	niv3_complic_sp	String	Entry valid if [niv3_complic]=1. Permitted values :1=Air leak syndrom; 2=Facial decubitus; 3=Tracheal granuloma; 4=Other complication; 5=Glottis edema
Other typology complications from mechanical ventilation	niv3_complic_sp2	String	Entry valid if [niv3_complic_sp]=4

Date start	it3del_dt	Date	Entry valid if [niv3_fallimento]=1. Format DDMMYYYY
Time start	it3dal_hh	Hour	Entry valid if [niv3_fallimento]=1. Format HHMM
Date end	it3al_dt	Date	Entry valid if [niv3_fallimento]=1. Format DDMMYYYY
Time end	it3al_hh	Hour	Entry valid if [niv3_fallimento]=1. Format HHMM

Variable	Variable name	Measureme nt unit	Notes
Use of nitrous oxide	it3_no	String	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of HFOV	it3_hfov	String	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of NAVA	it3_nava	String	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of cough machine	it3_tosse	String	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of curarization	it3_curariz	String	Entry valid if [niv2_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of surfactant	it3_surfactante	String	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 2=No
Extubation	it3_estubazione	String	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Planned; 2=Unplanned/accidental; 3=Not carried out
Reason	it3_est_motivo	String	Entry valid if [it3_estubazione]=3. Permitted values: 1=Tracheotomy;



			2=Death; 3=Transfer to other ward / hospital
Use of NIV post extubation	it3_post_est	String	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 2=No
Complications from mechanical ventilation	it3_complic	String	Entry valid if [niv3_fallimento]=1. Permitted values: 1=Yes; 2=No
Typology complications following mechanical ventilation	it3_complic_sp	it1_complic_sp2	Entry valid if complications following mechanical ventilation (it3_complic=1). Permitted values: 1=Air leak syndrome; 2=Facial decubitus; 3=Tracheal granuloma; 4=Other complication; 5=Glottis edema
Other typology complications following mechanical ventilation	it3_complic_sp2	String	Entry valid if other complications following mechanical ventilation (it3_complic_sp=4).
Date NIV started	niv4del_dt	Date	Entry valid if [it3_post_est]=1. Date format DDMMYYYY
Time NIV started	niv4dal_hh	Hour	Entry valid if [it3_post_est]=1. Format HHMM
Date NIV ended	niv4al_dt	Date	Entry valid if [it3_post_est]=1. Date format DDMMYYYY
Time NIV ended	niv4al_hh	Hour	Entry valid if [it3_post_est]=1. Format HHMM
Mode of NIV ventilation	niv4_modalita	String	Entry valid if [it3_post_est]=1. Permitted values: 1=PSV/BiPAP



Variable	Variable name	Measurement unit	Notes
			(Ipap-Epap); 2=A-PCV; 3=CPAP; 4=NAVA
Nasal mask	niv4_interf__1	Flag	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
Face mask (oro-nasal)	niv4_interf__2	Flag	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
Nasal cannula	niv4_interf__3	Flag	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
Helmet	niv4_interf__4	Flag	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
Full face (including eyes)	niv4_interf__5	Flag	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
Other	niv4_interf__6	Flag	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
Use of cough machine	niv4_tosse	String	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
NIV failure	niv4_fallimento	String	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
Hypercapnia	niv4_fallimento_d__1	Flag	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 0=No
Hypoxia	niv4_fallimento_d__2	Flag	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 0=No
Blockage secretions	niv4_fallimento_d__3	Flag	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 0=No
Agitation	niv4_fallimento_d__4	Flag	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 0=No
Intolerance	niv4_fallimento_d__5	Flag	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 0=No



Ineffective coughing	niv4_fallimento_d__6	Flag	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 0=No
Execution of invasive / surgical maneuvers	niv4_fallimento_d__7	Flag	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 0=No
Complications from mechanical ventilation	niv4_complic	String	Entry valid if [it3_post_est]=1. Permitted values; 1=Yes; 2=No
Typology complications from mechanical ventilation	niv4_complic_sp	String	Entry valid if [niv4_complic]=1. Permitted values :1=Air leak syndrom; 2=Facial decubitus; 3=Tracheal granuloma; 4=Other complication; 5=Glottis edema
Other typology complications from mechanical ventilation	niv4_complic_sp2	String	Entry valid if [niv4_complic_sp]=4
Date start	it4del_dt	Date	Entry valid if [niv4_fallimento]=1. Format DDMMYYYY
Time start	it4dal_hh	Hour	Entry valid if [niv4_fallimento]=1. Format HHMM
Date end	it4al_dt	Date	Entry valid if [niv4_fallimento]=1. Format DDMMYYYY
Variable	Variable name	Measureme nt unit	Notes
Time end	it4al_hh	Hour	Entry valid if [niv4_fallimento]=1. Format HHMM
Use of Nitrous oxide	it4_no	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 2=No

Use of HFOV	it4_hfov	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of NAVA	it4_nava	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of cough machine	it4_tosse	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of curarization	it4_curariz	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 2=No
Use of surfactant	it4_surfactante	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 2=No
Extubation	it4_estubazione	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Planned; 2=Unplanned/accidental; 3=Not carried out
Reason	it4_est_motivo	String	Entry valid if [it4_estubazione]=3. Permitted values: 1=Tracheotomy; 2=Death; 3=Transfer to other ward / hospital
Use of NIV post extubation	it4_post_est	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 2=No
Complications from mechanical ventilation	it4_complic	String	Entry valid if [niv4_fallimento]=1. Permitted values: 1=Yes; 2=No
Typology complications following mechanical ventilation	it4_complic_sp	it1_complic_ sp2	Entry valid if complications following mechanical ventilation (it4_complic=1). Permitted values: 1=Air leak syndrome; 2=Facial decubitus; 3=Tracheal granuloma; 4=Other complication; 5=Glottis edema



Other typology complications following mechanical ventilation	it4_complic_sp2	String	Entry valid if other complications following mechanical ventilation (it4_complic_sp=4).
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9. Table INFECTION

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Primary key. Medical chart ID number
Date of assessment	valut_dt	Date	Fomat DDMMYYYY
Site of infection	sede_inf	String	Permitted values TABLE SITE OF INFECTION
Other site of infection	sede_inf_spec	String	Entry valid if other site of infection.
Diagnosis infection	diagnosi_inf	String	Permitted values: 1=Suspected; 2=Ascertained (check that test for positive culture and microorganisms was filled out)
Typology infection	tipo_inf	String	Permitted values: 1=Community; 2=Nosocomial (48 h from hospitalization)
Microorganismo isolated	micro_isolato1	String	Entry valid if diagnosi_inf=2. Permitted values TABLE MICROORGANISM ISOLATED
None	antibiogramma_s_1	Flag	Entry valid if diagnosi_inf=2. Permitted values: 1=Yes; 2=No



Penicillin	antibiogramma_s_2	Flag	Entry valid if diagnosi_inf=2. Permitted values: 1=Yes; 2=No
Cefalosporin	antibiogramma_s_3	Flag	Entry valid if diagnosi_inf=2. Permitted values: 1=Yes; 2=No
Carbapenem	antibiogramma_s_4	Flag	Entry valid if diagnosi_inf=2. Permitted values: 1=Yes; 2=No
Cillin / Oxacillin	antibiogramma_s_5	Flag	Entry valid if diagnosi_inf=2. Permitted values: 1=Yes; 2=No
Macrolides	antibiogramma_s_6	Flag	Entry valid if diagnosi_inf=2. Permitted values: 1=Yes; 2=No
Glycopeptides	antibiogramma_s_7	Flag	Entry valid if diagnosi_inf=2. Permitted values: 1=Yes; 2=No
Microorganism isolated 2	micro_isolato2	String	Entry valid if [micro_isolato1] <> "". Permitted values TABLE MICROORGANISM ISOLATED
None	antibiogramma_s_2_1	Flag	Entry valid if [micro_isolato1] <> "". Permitted values: 1=Yes; 0=No
Penicillin	antibiogramma_s_2_2	Flag	Entry valid if [micro_isolato1] <> "". Permitted values: 1=Yes; 0=No
Cefalosporin	antibiogramma_s_2_3	Flag	Entry valid if [micro_isolato1] <> "". Permitted values: 1=Yes; 0=No
Carbapenem	antibiogramma_s_2_4	Flag	Entry valid if [micro_isolato1] <> "". Permitted values: 1=Yes; 0=No



Cillin / Oxacillin	antibiogramma_s_2__5	Flag	Entry valid if [micro_isolato1] <> "". Permitted values: 1=Yes; 0=No
Macrolides	antibiogramma_s_2__6	Flag	Entry valid if [micro_isolato1] <> "". Permitted values: 1=Yes; 0=No
Antibiotic therapy	t_antibiotica	String	Permitted values: 1=Yes; 2=No
Variable	Variable name	Measur ement unit	Notes
Antiviral therapy	t_antibiotica_s4	String	Permitted values: 1=Yes; 2=No
Antifungal therapy	t_antifungina	String	Permitted values: 1=Yes; 2=No
Prophylaxis	t_antibiotica_s__1	Flag	Entry valid if [t_antibiotica]=1 or [t_antibiotica_s4]=1 or [t_antifungina]=1. Permitted values: 1=Yes; 0=No
Empiric	t_antibiotica_s__2	Flag	Entry valid if [t_antibiotica]=1 or [t_antibiotica_s4]=1 or [t_antifungina]=1. Permitted values: 1=Yes; 0=No
Targeted	t_antibiotica_s__3	Flag	Entry valid if [t_antibiotica]=1 or [t_antibiotica_s4]=1 or [t_antifungina]=1. Permitted values: 1=Yes; 0=No
Suspected evolution of infection into sepsis / severe sepsis	sepsi	String	Permitted values: 1=Yes; 2=No

/ septic shock			
Presence of other infections	altre_infezioni	String	Permitted values: 1=Yes; 2=No
Date of assessment	valut_dt_2	Date	Fomat DDMMYYYY
Site of infection	sede_inf_2	String	Entry valid if [altre_infezioni]=1. Permitted values TABLE SITE OF INFECTION
Other site of infection	sede_inf_spec_2	String	Entry valid if [sede_inf_2]=-9900. Entry valid if other site of infection.
Diagnosis infection	diagnosi_inf_2	String	Entry valid if [altre_infezioni]=1. Permitted values: 1=Suspected; 2=Ascertained (check that test for positive culture and microorganisms was filled out)
Typology infection	tipo_inf_2	String	Entry valid if [altre_infezioni]=1. Permitted values: 1=Community; 2=Nosocomial (48 h from hospitalization)
Microorganismo isolated	micro_isolato3	String	Entry valid if diagnosi_inf_2=2. Permitted values TABLE MICROORGANISM ISOLATED
None	antibiogramma_s_3__1	Flag	Entry valid if diagnosi_inf_2=2. Permitted values: 1=Yes; 2=No
Penicillin	antibiogramma_s_3__2	Flag	Entry valid if diagnosi_inf_2=2. Permitted values: 1=Yes; 2=No



Cefalosporin	antibiogramma_s_3__3	Flag	Entry valid if diagnosi_inf_2=2. Permitted values: 1=Yes; 2=No
Carbapenem	antibiogramma_s_3__4	Flag	Entry valid if diagnosi_inf_2=2. Permitted values: 1=Yes; 2=No
Cillin / Oxacillin	antibiogramma_s_3__5	Flag	Entry valid if diagnosi_inf_2=2. Permitted values: 1=Yes; 2=No
Variable	Variable name	Measur ement unit	Notes
Macrolides	antibiogramma_s_3__6	Flag	Entry valid if diagnosi_inf_2=2. Permitted values: 1=Yes; 2=No
Glycopeptides	antibiogramma_s_3__7	Flag	Entry valid if diagnosi_inf_2=2. Permitted values: 1=Yes; 2=No
Microorganism isolated 2	micro_isolato4	String	Entry valid if [micro_isolato3] <> "". Permitted values TABLE MICROORGANISM ISOLATED
None	antibiogramma_s_4__1	Flag	Entry valid if [micro_isolato4] <> "". Permitted values: 1=Yes; 0=No
Penicillin	antibiogramma_s_4__2	Flag	Entry valid if [micro_isolato4] <> "". Permitted values: 1=Yes; 0=No
Cefalosporin	antibiogramma_s_4__3	Flag	Entry valid if [micro_isolato4] <> "". Permitted values: 1=Yes; 0=No
Carbapenem	antibiogramma_s_4__4	Flag	Entry valid if [micro_isolato4] <> "". Permitted values: 1=Yes; 0=No



Cillin / Oxacillin	antibiogramma_s_4_5	Flag	Entry valid if [micro_isolato4] <> "". Permitted values: 1=Yes; 0=No
Macrolides	antibiogramma_s_4_6	Flag	Entry valid if [micro_isolato4] <> "". Permitted values: 1=Yes; 0=No
Antibiotic therapy	t_antibiotica_2	String	Entry valid if altre_infezioni=1. Permitted values: 1=Yes; 2=No
Antiviral therapy	t_antibiotica_s5	String	Entry valid if altre_infezioni=1. Permitted values: 1=Yes; 2=No
Antifungal therapy	t_antifungina_2	String	Entry valid if altre_infezioni=1. Permitted values: 1=Yes; 2=No
Prophylaxis	t_antibiotica_s_2_1	Flag	Entry valid if [t_antibiotica_2]=1 or [t_antibiotica_s5]=1 or [t_antifungina_2]=1. Permitted values: 1=Yes; 0=No
Empiric	t_antibiotica_s_2_2	Flag	Entry valid if [t_antibiotica_2]=1 or [t_antibiotica_s5]=1 or [t_antifungina_2]=1. Permitted values: 1=Yes; 0=No
Targeted	t_antibiotica_s_2_3	Flag	Entry valid if [t_antibiotica_2]=1 or [t_antibiotica_s5]=1 or [t_antifungina_2]=1. Permitted values: 1=Yes; 0=No
Suspected evolution of infection into	sepsi_2	String	Permitted values: 1=Yes; 2=No



sepsis / severe sepsis / septic shock			
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10. Table SEPSIS (if infection has evolved into sepsis)

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Primary key. Medical chart ID number
Sepsi	infezione_sepsi	String	Permitted values: 1=Yes; 2=No
Pediatric SOFA	intro_sepsi	String	
Date sepsis evolved	sepsi_dt	Date	Format DDMMYYYY
Age in months	eta_sepsi	Numeric	
Eye opening	occhi_s	String	Permitted values: 1=Spontaneous; 2=To speech; 3=To pain; 4=Nil
Best verbal response	verbale_s	String	Permitted values TABLE BEST VERBAL RESPONSE
Best motor response	motoria_s	String	Permitted values TABLE BEST MOTOR RESPONSE
Score on Glasgow scale	glasgow_s	Numeric	
Bilirubin	bilirubina	Numeric	If value is normal, i.e. < 1.2 mg/dl (to convert from μmoles/L to mg/dl divide by 17.1), do not fill out
PLT	plt	Numeric	If value is normal, i.e. PLT ≥ 150 10 ⁹ /L (=10 ³ /μL), do not fill out



PaO2 mmHg	pao2_s	Numeric	Indicate Spo2 value if PaO2 not available
FiO2	fio2_s	Numeric	
SaO2	sao2_s	Numeric	
Ratio PaO2 in mmHg/FiO2	pao2_su_fio2_s	Numeric	Calculation: [pao2_s]/[fio2_s]
Ratio SaO2/FiO2	sao2_su_fio2_s	Numeric	Calculation: [sao2_s]/[fio2_s]
MAP mmHg or amine infusion mcg/kg/min - Matics et al age < 1 month	map_1	String	Entry valid only if eta_sespsi<1. Permitted values: 0=> 46; 1=< 46; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0
MAP mmHg or amine infusion mcg/kg/min - Matics et al 1 month - 1 year	map_2	String	Entry valid if [eta_sespsi]<12 and [eta_sespi]>=1. Permitted values: 0=> 55; 1=< 55; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 o adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or



Variable	Variable name	Measurement unit	Notes
			adrenaline > 0.1 or noradrenaline > 0.1
MAP mmHg or amine infusione mcg/kg/min - Matics et al 12 - 23 months (1-2 years)	map_3	String	Entry valid if [eta_sepsi]<24 and [eta_sepsi]>=12. Permitted values: 0=> 60; 1=< 60; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1
MAP mmHg or amine infusion mcg/kg/min - Matics et al 24 - 59 months (2 - 5 years)	map_4	String	Entry valid if [eta_sepsi]<60 and [eta_sepsi]>=24. Permitted values: 0=> 62; 1=< 62; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1
MAP mmHg or amine infusion	map_5	String	Entry valid if [eta_sepsi]<144 and [eta_sepsi]>=65.



<p>mcg/kg/min - Matics et al 60 - 143 months (5 - 12 years)</p>			<p>Permitted values: 0=> 65; 1=< 65; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1</p>
<p>MAP mmHg or amine infusion mcg/kg/min - Matics et al 144 - 216 months (12 - 18 years)</p>	<p>map_6</p>	<p>String</p>	<p>Entry valid if [eta_sepsi]<216 and [eta_sepsi]≥144. Permitted values: 0=> 67; 1=< 67; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1</p>
<p>MAP mmHg or amine infusion mcg/kg/min - Matics et al age > 216 months (> 18 years)</p>	<p>map_7</p>	<p>String</p>	<p>Entry valid if [eta_sepsi]≥216. Permitted values: 0=> 70; 1=< 70; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1;</p>



			4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1
MAP mmHg - Schlapbach et al age < 24 months	map_8	String	Entry valid if [eta_sepsi]<24. Permitted values: 0=> 60; 1=44 - 59; 2=31 - 43; 4=≤ 30

Variable	Variable name	Measurement unit	Notes
MAP mmHg - Schlapbach et al 24 - 72 months	map_9	String	Entry valid if [eta_sepsi]>=24 and [eta_sepsi]<72. Permitted values: 0=≥ 62; 1=46 - 61; 2=32 - 44; 4=≤ 31
MAP mmHg - Schlapbach et al 72 - 156 months	map_10	String	Entry valid if [eta_sepsi]>=72 and [eta_sepsi]<156. Permitted values: 0=≥ 65; 1=49 - 64; 2=36 - 48; 4=≤ 35
MAP mmHg - Schlapbach et al 156 - 216 months	map_11	String	Entry valid if [eta_sepsi]>=156 and [eta_sepsi]<216. Permitted values: 0=≥ 67; 1=52 - 66; 2=38 - 51; 4=≤ 37
SBP mmHg or amine infusion mcg/kg/min - Shime et al 0 - 1 week	sbp_1	String	Entry valid if [eta_sepsi]<=0.25. Permitted values: 0=>60; 1=< 60; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose;



			3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1;
SBP mmHg or amine infusion mcg/kg/min - Shime et al 1 week - 1 month	sbp_2	String	Entry valid if [eta_sepsi]>0.25 and [eta_sep si]<=1. Permitted values: 0=>65; 1=< 65; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1;
SBP mmHg or amine infusion mcg/kg/min - Shime et al 1 month - 12 months	sbp_3	String	Entry valid if [eta_sepsi]>1 and [eta_sepsi]<=12. Permitted values: 0=>70; 1=< 70; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1;



SBP mmHg or amine infusion mcg/kg/min - Shime et al 13 months - 71 months	sbp_4	String	Entry valid if [eta_sepsi]>12 and [eta_seps i]<=71. Permitted values: 0=>75; 1=<75; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1;
Variable	Variable name	Measurement unit	Notes
SBP mmHg or amine infusion mcg/kg/min - Shime et al 71 months - 143 months	sbp_5	String	Entry valid if [eta_sepsi]>71 and [eta_seps i]<=143. Permitted values: 0=>80; 1=<80; 2=Dopamine ≤ 5 or dobutamine any dose or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1;
SBP mmHg or amine infusion mcg/kg/min - Shime et al 144 months - 216 months	sbp_6	String	Entry valid if [eta_sepsi]>144 and [eta_seps i]<=216. Permitted values: 0=>90; 1=<90; 2=Dopamine ≤ 5 or dobutamine any dose



			or milrinone any dose; 3=Dopamine > 5 or adrenaline ≤ 0.1 or noradrenaline ≤ 0.1; 4=Dopamine > 15 or adrenaline > 0.1 or noradrenaline > 0.1;
Creatininemia to convert mmoles/L to mg/dl divide by 0.0884 mg/dl	creatininemia_s	Numeric	
pSOFA score	psofa_matics	Numeric	
pSOFA (Schlapbach et al)	psofa_schlapbac h	Numeric	
pSOFA (Shime et al)	psofa_shime	Numeric	
Lactates mEq/l	lattati	Numeric	
Volemic filling	riemp_volume	String	Permitted values: 0=Not carried out; 1=20 ml/kg; 2=40 ml/k; 3=60 ml/kg
Colloid	coll_alb__1	Flag	Permitted values: 1=Yes; 0=No
Albumine	coll_alb__2	Flag	Permitted values: 1=Yes; 0=No
Not carried out	emoderivati__1	Flag	Permitted values: 1=Yes; 0=No
EC	emoderivati__2	Flag	Permitted values: 1=Yes; 0=No
PFC	emoderivati__3	Flag	Permitted values: 1=Yes; 0=No



PLT	emoderivati__4	Flag	Permitted values: 1=Yes; 0=No
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11. Table DISCHARGE

Variable	Variable name	Measurement unit	Notes
Medical chart ID number	n_cartella	String	Primary key for "DISCHARGE" table. Medical chart ID number
Date discharge TIP	dimissione_dt	Date	Date format DDMMYYYY
Time discharge TIP	dimissione_hh	Hour	Time format HHMM
Hospital stay (days)	durata_degenza	Numeric	Calculate
Diagnosis discharge	diagnosi	String	Permitted values TABLE DIAGNOSIS
Typology accident	se_incidenti	String	Entry valid if [diagnosi]=1. Permitted values TABLE ACCIDENTS
Typology congenital cardiovascular	cardio_cong	String	Entry valid if [diagnosi]=2. Permitted values TABLE CONGENITAL CARDIOVASCULAR
Typology acquired cardiovascular	cardio_acq	String	Entry valid if [diagnosi]=3. Permitted values TABLE ACQUIRED CARDIOVASCULAR
Typology neurological	neurologico	String	Entry valid if [diagnosi]=4. Permitted values TABLE NEUROLOGICAL
Typology upper respiratory tract	resp_aerea_sup	String	Entry valid if [diagnosi]=5. Permitted values TABLE UPPER RESPIRATORY TRACT

Typology lower respiratory tract	resp_aerea_inf	String	Entry valid if [diagnosi]=6. Permitted values TABLE LOWER RESPIRATORY TRACT
Typology respiratory other	resp_altro	String	Entry valid if [diagnosi]=7. Permitted values TABLE RESPIRATORY OTHER
Typology kidney	renale	String	Entry valid if [diagnosi]=8. Permitted values TABLE KIDNEY
Typology gastrointestinal	gastro	String	Entry valid if [diagnosi]=9. Permitted values TABLE GASTROINTESTINAL
Typology miscellaneous	miscellanea	String	Entry valid if [diagnosi]=10. Permitted values TABLE MISCELLANEOUS
Diagnosis discharge (2)	diagnosi_2	String	Permitted values TABLE DIAGNOSIS
Typology accident (2)	se_incidenti_2	String	Entry valid if [diagnosi_2]=1. Permitted values TABLE ACCIDENTS
Typology congenital cardiovascular (2)	cardio_cong_2	String	Entry valid if [diagnosi_2]=2. Permitted values TABLE CONGENITAL CARDIOVASCULAR
Typology acquired cardiovascular (2)	cardio_acq_2	String	Entry valid if [diagnosi_2]=3. Permitted values TABLE ACQUIRED CARDIOVASCULAR
Typology neurological (2)	neurologico_2	String	Entry valid if [diagnosi_2]=4. Permitted values TABLE NEUROLOGICAL

Typology upper respiratory tract (2)	resp_aerea_sup_2	String	Entry valid if [diagnosi_2]=5. Permitted values TABLE UPPER RESPIRATORY TRACT
Typology lower respiratory tract (2)	resp_aerea_inf_2	String	Entry valid if [diagnosi_2]=6. Permitted values TABLE LOWER RESPIRATORY TRACT
Typology respiratory other (2)	resp_altro_2	String	Entry valid if [diagnosi_2]=7. Permitted values TABLE RESPIRATORY OTHER
Variable	Variable name	Measurement unit	Notes
Typology kidney (2)	renale_2	String	Entry valid if [diagnosi_2]=8. Permitted values TABLE KIDNEY
Typology gastrointestinal (2)	gastro_2	String	Entry valid if [diagnosi_2]=9. Permitted values TABLE GASTROINTESTINAL
Typology miscellaneous (2)	miscellanea_2	String	Entry valid if [diagnosi_2]=10. Permitted values TABLE MISCELLANEOUS
Diagnosis discharge (3)	diagnosi_3	String	Permitted values TABLE DIAGNOSIS
Typology accident (3)	se_incidenti_3	String	Entry valid if [diagnosi_3]=1. Permitted values TABLE ACCIDENTS
Typology congenital cardiovascular (3)	cardio_cong_3	String	Entry valid if [diagnosi_3]=2. Permitted values TABLE CONGENITAL CARDIOVASCULAR

Typology acquired cardiovascular (3)	cardio_acq_3	String	Entry valid if [diagnosi_3]=3. Permitted values TABLE ACQUIRED CARDIOVASCULAR
Typology neurological (3)	neurologico_3	String	Entry valid if [diagnosi_3]=4. Permitted values TABLE NEUROLOGICAL
Typology upper respiratory tract (3)	resp_aerea_sup_3	String	Entry valid if [diagnosi_3]=5. Permitted values TABLE UPPER RESPIRATORY TRACT
Typology lower respiratory tract (3)	resp_aerea_inf_3	String	Entry valid if [diagnosi_3]=6. Permitted values TABLE LOWER RESPIRATORY TRACT
Typology respiratory other (3)	resp_altro_3	String	Entry valid if [diagnosi_3]=7. Permitted values TABLE RESPIRATORY OTHER
Typology kidney (3)	renale_3	String	Entry valid if [diagnosi_3]=8. Permitted values TABLE KIDNEY
Typology gastrointestinal (3)	gastro_3	String	Entry valid if [diagnosi_3]=9. Permitted values TABLE GASTROINTESTINAL
Typology miscellaneous (3)	miscellanea_3	String	Entry valid if [diagnosi_3]=10. Permitted values TABLE MISCELLANEOUS
Result discharge TIP	esito_tip	String	Permitted values; 1=Alive; 2=Dead
Mode of death	mod_decesso	String	Entry valid if [esito_tip]=2. Permitted values 1=Dead despite cardiopulmonary intensive care; 2=Suspension of treatment in life

			support vitale; 3=Abstension from beginning life support; 4=Decision to not resuscitate; 5=Cerebral death
If deceased, validation of death	deceduto	String	Entry valid if [esito_tip]=2. Permitted values 1=Yes; 2=No
Retrieval of organs	prelievo_organ i	String	Entry valid if [esito_tip]=2. Permitted values 1=Yes; 2=No
If alive, destination	destinazione	String	Entry valid if [esito_tip]=1. Permitted values 1=Ward; 2=Other hospital; 3=Domicilio
Activation ADI	adi	String	Entry valid if [destinazione]=3. Permitted values 1=Yes; 2=No
If other hospital	dest_altro_osp	String	Entry valid if [destinazione]=2. Permitted values 1= Hospitalization ward; 2=PIC
Variable	Variable name	Measureme nt unit	Notes
Specify ward	reparto	String	Entry valid if [destinazione]=1
POPC score	popc_dimissio ne	String	Entry valid if [esito_tip]=1. Permitted values TABLE POPC SCORE
Home ventilation	ventila_dom	String	Entry valid if [destinazione]=3. Permitted values 1=Yes; 2=No
Discharge hospital	dimissione_sel	String	Entry valid if [esito_tip]=1 and [destinazione]=1. Permitted values: 1=Yes; 2=No; 3=Unknown
Result of hospital discharge	esito_osp	String	Entry valid if [dimissione_sel]=1. Permitted values: 1=Alive; 2=Dead

Date of hospital discharge	dimissione_osp_dt	Date	Entry valid if [esito_tip]=1 and [destinazione]=1. Date format DDMMYYYY
Notes	note	String	Entry valid if [esito_tip]=1 and [destinazione]=1

TABLE POPC

Code	Description	Notes
1	Good overall performance	Normal, age appropriate, healthy, alert, able to carry out normal activities in everyday life
2	Slight overall disability	Possibility of minor physical problems still compatible with a normal life; aware and able to interact appropriately and/or carry out activities independently
3	Moderate overall disability	Possibility of moderate disability from non-cerebral dysfunction with or without cerebral dysfunction; aware and autonomous in everyday activities; support teacher at school
4	Severe overall disability	Possibility of severe disability from non-cerebral dysfunction with or without cerebral dysfunction; conscious but dependent on others for everyday activities
5	Coma or vegetative state	
6	Cerebral death	

TABLE PRIORITY LEVEL

Code	Description	Notes
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1	PRIORITY 1	“Critical,” unstable patients with a need for intensive treatment (e.g., ventilation, amines) and monitoring that cannot be provided outside of the PIC. For these patients there are generally no limits for the intensity of treatment to be implemented. E.g.: acute or post-operative respiratory failure with the need for mechanical ventilation, shock, etc.
2	PRIORITY 2	Patients requiring intensive monitoring and, potentially, immediate treatment. For these, there are generally no limits for the intensity of care to be received (e.g. patient with chronic comorbidity with an acute medical or surgical event).
3	PRIORITY 3	Patients who are at "critical" level and unstable but have reduced chances of recovery due to the underlying disease or the nature of their acute illness. These patients can receive intensive treatments to overcome an acute phase but may have limits in the degree of intensity of care (no intubation, no CPR maneuvers)
4	PRIORITY 4a	Patients for whom PIC hospitalization is not appropriate because they are "too healthy for PIC hospitalization". Patients who predictably have no or little benefit from hospitalization in the PIC and for whom treatment can be carried out in departments other than the PIC
5	PRIORITY 4b	Patients for whom PIC hospitalization is not appropriate because they are "too sick for PIC hospitalization". Patients with terminal and irreversible pathology who are at imminent risk of death

TABLE_PROVENANCE

Cod e	Description
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1	EMS/118/Ambulance
2	Ward
3	Operating room
4	Other hospital
5	Home
6	Hemodynamics
7	Other provenance
8	Hospice

TABLE_WARD

Codice	Description
1	Pediatric
2	Pediatric surgery
3	Orthopedic
4	Neurosurgery
5	Cardiosurgery
6	Maxillofacial /ENT/respiratory tract surgery
7	Pediatric oncology
9	Delivery room
10	Obstetric
11	Neonatal pathology
12	Intensive care
8	Other

TABLE_GENERAL_SPEC_SURGERY



Cod e	Description
1	Gastrointestinal
2	Urinary
3	Thoracic
4	Maxillofacial/ENT/respiratory tract surgery
5	Ophthalmology
6	Orthopedic

TABLE TYPOLOGY MAIN HOSPITALIZATION

Cod e	Description
1	Respiratory failure
2	Altered senses / Convulsive seizures
3	Metabolic disorders / Dehydration
4	Cardiocirculatory failure (not septic shock)
5	Acute kidney failure
6	Sepsis-related diagnosis (different from respiratory, cardiac, SNC)
7	Monitoring/ observation
8	Planned for invasive procedures
9	Premature
10	Perinatal asphyxia
11	Congenital cardiopathy

TABLE TYPOLOGY BRAIN INJURY

Cod e	Description
1	Intraparenchymal post-traumatic hemorrhage
2	Peridural post-traumatic hematoma
3	Subdural post-traumatic hematoma
4	Acute post-traumatic cerebral edema
5	DAI diffuse axonal injury

TABLE BEST VERBAL RESPONSE

Cod e	Description
1	Vocalizes, smiles, follows objects
2	Irritable, cries, but consolable
3	Cries after painful stimuli
4	Cries at pain
5	Nil

TABLE BEST MOTOR RESPONSE

Cod e	Description
1	Normal spontaneous movements
2	Responds to touch
3	Responds to pain
4	Flexion to pain
5	Extension to pain
6	Nil



TABLE VERY HIGH RISK DIAGNOSIS

Cod e	Description
1	None/Uncertain
2	Cardiac arrest before admission to PIC
3	Severe combined immunodeficiency
4	Leukemia or lymphoma after first induction
5	Bone marrow transplant
6	Hepatic failure as primary reason for hospitalization

TABLE HIGH RISK DIAGNOSIS

Cod e	Description
1	None/Uncertain
3	Cardiomyopathy or myocarditis
4	Hypoplastic left heart
5	Neurodegenerative disorders
6	Spontaneous cerebral hemorrhage
8	HIV infection
11	Necrotizing enterocolitis

TABLE LOW RISK DIAGNOSIS

Cod e	Description
1	None / Uncertain
2	Obstructive apnea
3	Asthma
4	Bronchiolitis
5	Diabetic Ketoacidosis
6	Croup
7	Seizures

TABLE PROCEDURE

Cod e	Description
1	PFO, Direct closure
2	DIA, Direct closure
3	DIA, Closure with Patch
4	DIA, Single atrial septation
5	DIA, Creation, enlargement
6	DIA, Partial closure
7	Fenestration, Interatrial septum
8	DIV, Direct closure
9	DIV, Closure with Patch
10	DIV multiple, correction
11	DIV, Creation, enlargement
12	Fenestration, Interventricular septum



13	Complete CAV, Correction
14	Intermediate CAV, Correction
15	Partial CAV, Correction
16	Aortapulmonary window, Correction
17	Pulmonary artery arising from aorta (hemitruncus), Correction
18	Truncus arteriosus, Correction
19	Truncal, Valve, Valvuloplastic
20	Truncal, Valve, Substitution
21	Partial RVPA, Correction
22	Partial RVPA in VCI (Scimitar), Correction
23	Total RVPA, Correction
24	Cor Triatriatum, Correction
25	Pulmonary veins, Stenosis, Correction
26	Intra-atrial tunnel (non-Mustard, non-Senning)
27	Systemic Venous Return, Anomaly, Correction
28	Systemic Venous Return, Stenosis, Correction
29	Tetralogy of Fallot, Correction, Non-ventriculotomy
30	Tetralogy of Fallot, Correction, Ventriculotomy, Non-transannular Patch
31	Tetralogy of Fallot, Correction, Transannular Patch
32	Tetralogy of Fallot, Correction with Right Ventricle-Pulmonary Artery Conduit
33	Canal - Fallot, Correction
34	Tetralogy of Fallot, Absence of pulmonary valve, Correction
35	Pulmonary Atresia with DIV (including Tetralogy of Fallot with Pulmonary Atresia), Correction
36	Pulmonary Atresia with DIV and Systemic Pulmonary Collateral Vessels (Pseudotruncus), Correction
37	Unifocalization of major pulmonary collateral arteries
38	Occlusion of major systemic pulmonary collateral arteries
39	Tricuspid, Valvuloplasty



40	Tricuspid, Substitution
Cod e	Description
41	Tricuspid, Closure (Exclusion, Univentricular approach)
42	Tricuspid, Valvular excission (without substitution)
43	Obstruction to the right ventricular outflow, Correction
44	1 1/2 Ventricle, Correction
45	Pulmonary artery, Truncus, Plastic
46	Pulmonary artery, Stenosis, Branch, Central (between pulmonary hila), Plastic
47	Pulmonary artery, Stenosis, Branch, Peripheral (at or beyond pulmonary hila), Plastic
48	Double-chambered right ventricle, Correction
49	Conduit, Substitution
50	Pulmonary, Valve, Valvuloplastic
51	Pulmonary, Valve, Substitution
52	Conduit, Interposition, Right ventricle - Pulmonary artery
53	Conduit, Interposition, Left ventricle - Pulmonary artery
54	Aorta, Valve, Valvuloplastic
55	Aorta, Valve, Substitution, Mechanical prothesis
56	Aorta, Valve, Substitution, Biological prothesis
57	Aorta, Valve, Substitution, Homograft
58	Substitution of the aortic root (Preserving the native aortica valve)
59	Substitution of the aortic root, Protesi Meccanica
60	Substitution of the aortic root, Homograft
61	Ross
62	Konno
63	Ross-Konno
64	Aorta, Stenosis, Subvalvular, Correction
65	Aorta, Stenosis, Subvalvular, Correction
66	Sinus of Valsalva, Aneurysm, Correction



67	Aorta-left ventricular tunnel, Correction
68	Mitral, Valve, valvuloplasty
69	Mitral, Stenosi, Membrana Sopra Valvolare Mitralica, Correction
70	Mitral, Valve, Substitution
71	Norwood
72	Hypoplastic left heart, Biventricular correction
73	Transplant, Heart
74	Transplant, Heart-Lung(s)
75	Ventriculoplastic Partial Left Ventricle (Surgical reduction of the left ventricular volume) (Batista)
76	Pericardium, Drainage procedure
77	Pericardiectomy
78	Fontan, <i>Atriopulmonary connection</i>
79	Fontan, <i>Atrioventricular connection</i>
80	Fontan, Intracardiac Tunnel, Fenestrated
81	Fontan, Intracardiac Tunnel, Non Fenestrated
82	Fontan, Extracardiac Tunnel, Fenestrated
83	Fontan, Extracardiac Tunnel, Non Fenestrated
84	Transposition congenitally corrected, Correction, Atrial Switch+Arterial Switch (Double Switch)
85	Transposition congenitally corrected, Correction, Atrial+ Rastelli Switch
86	Transposition congenitally corrected, Correction, DIV Closure
87	Transposition congenitally corrected, Correction, DIV Closure+Left ventricle to pulmonary artery conduit
88	Arterial Switch
89	Arterial Switch and DIV closure
90	Senning
91	Mustard
92	Rastelli
93	REV



94	VDDU, Correction, Intraventricular Tunnel
95	Double outlet left ventricle, Correction
96	Coronary, Anomalous left coronary artery from the pulmonary artery, Correction
97	Coronary Fistula, Ligation
98	Aorto-Coronary Bypass
99	Aortic coarctation, Aortoplasty, Termino-terminal
100	Aortic coarctation, Aortoplasty, Extended termino-terminal
101	Aortic coarctation, Aortoplasty, Subclavian <i>flap</i>
102	Aortic coarctation, Aortoplasty, Patch
103	Aortic coarctation, Aortoplastica, Interposizione di Condotto
104	Hypoplasia of the aortic arch, Aortoplastica
105	Interruption of the Aortic Arch, Correction
106	Patent arterial duct, Surgical closure
107	Vascular ring, Correction
108	Pulmonary Artery Sling, Correction
109	Aortic aneurysm, Correction
110	Aortic dissection, Correction
111	Pulmonary biopsy
112	Transplant, Lung(s)
113	Pectus, Correction
114	Pacemaker, Permanent implant
115	Pacemaker, Procedure, Other
116	Defibrillator, Implant
117	Defibrillator, Procedure, Other
118	Arrhythmia, Atrial, Surgical ablation
119	Systemic-to-pulmonary shunt, Modified Blalock-Taussig (BT)
120	Systemic-to-pulmonary shunt, Central (or at truncus of the pulmonary artery)
121	Systemic-to-pulmonary shunt, Ligation +/- Section
122	Banding of the Pulmonary Artery



123	Debanding of the Pulmonary Artery
124	Damus-Kaye-Stansel (DKS)(Creation of Aorto-Pulmonary Connection without Reconstruction of the aortic arch)
125	Bi-directional Glenn, (mono-cava-bi-pulmonary)
126	Unidirectional Glenn (mono-cava-mono-pulmonary)
127	Bilateral Glenn (bi-cava-bi-pulmonary)
Cod e	Description
128	HemiFontan
129	Aneurysm, Left Ventricle, Correction
130	Aneurysm, Right Ventricle, Correction
131	Aneurysm, Pulmonary artery, Correction
132	Cardiac tumor, Resection
133	Pulmonary artery, Truncus, Ligation
134	Pulmonary embolectomy
135	Pleura, Drainage Procedure
136	Thoracic duct, Ligation
137	Pleura, Decortication
138	Aortic counterpulsator, Insertion
139	ECMO, Procedure
140	Ventricular Assist Device Right/Left
141	Bronchoscopy
142	Diaphragm, Plication
143	Closure of dilated sternum
144	Mediastinum, Surgical exploration
145	Sternotomy, wound drainage
146	DIV + Aortic coarctation, Correction
147	DIV + Hypoplasia of the arch, Correction
148	Substitution of the aortic root, Biological prothesis
149	Arrhythmia, Ventricular, Surgical ablation



150	Intra-Atrial Tunnel, Mustard or Senning repair
151	Atrial fenestration, Closure
152	Conduit, Interposition, Aorta ventricle
153	Ebstein, Valvuloplasty
154	Fontan, Repair or Conversion (Re-do Fontan)
155	Pulmonary embolectomy, Acute Pulmonary Embolism
156	Pulmonary embolectomy, Chronic Pulmonary Embolism

TABLE MAIN DIAGNOSIS

Cod e	Description
1	Accidents
2	Cardiovascular, congenital
3	Cardiovascular, acquired
4	Neurological
5	Respiratory, upper respiratory tract
6	Respiratory, lower respiratory tract
7	Respiratory, other
8	Kidney
9	Gastrointestinal
10	Miscellaneous

TABLE TYPOLOGY ACCIDENT

Code	Description
100	accidents, other
101	anaphylaxis



102	burns
103	carbon monoxide poisoning
104	drug toxicity, iatrogenic
105	electrocution
106	poisoning
107	suffocation
108	hyperthermia
109	hypothermia
110	drowning
111	ingestion
112	smoke inhalation
113	injury, other
114	injury, abdominal
115	injury, thoracic
116	injury, facial
117	injury, cranial
118	injury, skeletal
119	injury, spinal

TABLE TYPOLOGY CONGENITAL CARDIOVASCULAR

Code	Description
200	cardiovascular, congenital, other
201	pulmonary valve agenesis
202	anomalous coronary artery
203	aortic insufficiency
204	aortic stenosis
224	AP window

205	defect of the atrial septum
225	arterovenous malformation
206	atrioventricular canal
207	coarctation
208	Cor triatriatum
226	Double-outlet right ventricle
209	Ebstein's anomaly
210	hypoplastic left heart syndrome
211	interrupted or hypoplastic aortic arch
227	obstruction of the left ventricle
212	mitral insufficiency

Code	Description
213	mitralic stenosis
214	patent ductus arteriosus
215	Pulmonary atresia or stenosis
228	Pulmonary failure
229	obstruction and atrium estrus
216	single ventricle
217	TAPVD
218	Tetralogy of Fallot
219	transposition of the great arteries (TGA)
220	atresia or stenosis of the tricuspid
221	tricuspid insufficiency
222	Truncus arteriosus
223	Defect of the interventricular septum



TABLE TYPOLOGY CARDIOVASCULAR ACQUIRED

Code	Description
250	cardiovascular, acquired, other
251	heart failure
252	cardiac tumor
253	cardiomyopathy
254	supraventricular arrhythmia
255	ventricular arrhythmia
256	endocarditis
257	hypertension, pulmonary
258	hypertension, systemic
259	Kawasaki disease
260	pericardial effusion or tamponade
263	heart and lung transplant
264	heart transplant
261	thrombosis
262	vasculitis

TABLE TYPOLOGY NEUROLOGICAL

Code	Description
300	neurological, other
301	botulism
302	cerebral abscess
303	cerebral arteriovenous malformation
304	cerebral death
305	infarction or cerebral ischemia



306	brain tumor
324	brain aneurysm
307	malfunctioning or infection shunt VP
308	encephalitis
309	encephalopathy, acute, hypoxic ischemic
310	encephalopathy, acute, other
311	encephalopathy, chronic degenerative (e.g. Leigh syndrome)
312	encephalopathy, chronic static (e.g. cerebral paralysis)
313	Guillain-Barre syndrome
314	hydrocephalus
315	hemorrhage, spontaneous intracranial
10042	secondary cerebral hemorrhage
316	intracranial hypertension (increase in intracranial pressure)
317	meningitis
318	meningomyelocele or spina bifida
325	muscular dystrophy (any type: Duchenne, nemaline, of the girdle...)
326	myasthenia gravis
327	spinal muscular atrophy (SMA) any type
319	myopathy
320	neuropathy
321	seizures
322	spinal cord injury
328	tetanus
323	venous sinus thrombosis
329	cerebral edema

TABLE TYPOLOGY UPPER RESPIRATORY TRACT



Code	Description
400	upper respiratory tract, other
401	choanal atresia or stenosis
402	epiglottitis
403	foreign body, inhalation
404	laryngotracheobronchitis (croup)
405	obstructive sleep apnea
406	Pierre Robin syndrome
407	retropharyngeal abscess
413	subglottic hemangioma
408	subglottic stenosis
409	tracheitis
410	obstruction of upper respiratory tract, other
411	infection of the upper respiratory tract, other
412	vocal cord paresis

TABLE TYPOLOGY LOWER RESPIRATORY TRACT

Code	Description
430	lower respiratory tract, other
431	asthma
432	bronchiolitis
433	Chronic respiratory failure (including bronchodisplasia)
434	tracheal and/or bronchus malacia
435	mediastinal mass
436	stenosis, tracheal and/or bronchial
437	tracheo-esophageal fistula
438	vascular ring

TABLE OF OTHER RESPIRATORY TYPOLOGY

Code	Description
450	Respiratory, other
451	air leak syndrome
453	ARDS
454	ab ingestis
455	Chylothorax
458	Cystic fibrosis
459	Empyema
461	Hypoventilation, central
469	Infection of the lower respiratory tract, other
462	Lung abscess
470	Pertussis
464	Pleural effusion
465	Pneumonia
471	Lung transplant
466	Lung hypoplasia
468	Respiratory disease
460	Infant respiratory distress syndrome

TABLE OF RENAL TYPOLOGY

Code	Description
500	Kidney, other
501	Hemolytic-uremic syndrome (HUS)



502	Nephrotic or nephritic syndrome
505	Kidney transplant
503	Acute kidney disease
504	Chronic kidney disease
506	Infection of urinary tract

TABLE OF GASTROINTESTINAL TYPOLOGY

Code	Description
600	Gastrointestinal, other
620	Biliary atresia
601	Intestinal obstruction
621	Intestinal perforation
602	Colitis
603	Gastroenteritis
604	Gastrointestinal hemorrhage
606	Hepatitis
622	Hirschsprung's disease
607	Intussusception
608	Liver disease, other
609	Liver failure, acute
610	Liver failure, chronic
611	Necrotizing enterocolitis
623	Newborn icterus
612	Esophageal atresia
624	Esophageal foreign bodies
613	Pancreatitis
614	Peritonitis
625	Portal hypertension



626	Liver transplant
615	Pyloric stenosis
616	Short bowel syndrome
617	Duodenal ulcer
618	Gastric ulcer or gastritis
619	Esophageal or gastric varices
627	Volvulus

TABLE OF MISCELLANEOUS TYPOLOGY

Code	Description
800	Miscellaneous, other
801	ALTE (Acute life threatening event - near miss SIDS)
802	Cardiac arrest, in hospital
803	Cardiac arrest, outside of hospital
804	Chromosomal abnormality
805	Coagulopathy
839	Craniosynostosis
806	Dehydration
807	Dermatological disorders
808	Diabetes insipidus
809	Diabetes mellitus with ketoacidosis
810	Diabetes mellitus without ketoacidosis
Code	Description
811	Electrolyte disorders
812	Endocrine disorders
813	Gangrene
847	Hematological disorders
814	Patient on home ventilator



815	Hypoglycemia
816	Elective diagnostic monitoring
817	UTI procedures (e.g. insertion of CVC)
818	Congenital immunodeficiency
819	Acquired immunosuppression
820	Metabolic disorder
821	Leukemia or lymphoma
822	Necrotizing fasciitis
823	Neutropenia
848	Organ donor
824	Pancytopenia
825	Pheochromocytoma
843	Previous bone marrow transplant
827	Respiratory arrest, in hospital
828	Respiratory arrest, outside of hospital
844	Scoliosis
829	Sepsis
830	Shock, cardiogenic
831	Shock, hypovolemic
832	Shock, septic
833	SIRS
834	Solid tumor (non-lymphoma)
835	Solid tumor (non-malignant)
836	Syndrome or malformation (non-chromosomal)
837	Toxic shock syndrome
838	Transplant, bone marrow
845	Tumor lysis syndrome
846	Wound infection
840	Hydrops fetalis



841	Diabetic mother
842	IUGR
826	Premature
472	Transient tachypnea of the newborn (TTN)
463	Meconium aspiration syndrome (MAS)
456	Congenital diaphragmatic hernia (CDH)
457	Congenital pulmonary anomaly
460	Hyaline membrane disease (HMD)
605	Gastroschisis or omphalocele
611	Necrotizing enterocolitis
623	Icterus neonatorum
10009	Post-operative monitoring
9997	Bladder exstrophy

TABLE OF TYPE OF VASCULAR ACCESS

Code	Description
1	Jugular int
2	Subclavian
3	Femoral
4	Axillary
5	Anonymous
6	PICC
7	Surgical access
8	Midline
9	Artery (non umbelical)

10	Umbilical venous catheter
11	Umbilical arterial catheter

TABLE OF GRADUAL SUSPENSION

Code	Description
1	10% (every 12 hours)
2	10% (every 24 hours)
3	20% (every 12 hours)
4	20% (every 24 hours)
5	10% (every 12 hours - every 24 hours)
6	20% (every 12 hours - every 24 hours)

TABLE OF SITES OF INFECTION

Code	Description
1	Absence of clear site
2	Vascular catheter
3	Vascular catheter, medicated
4	Cutaneous/subcutaneous
17	Pleural empyema
18	Endocarditis
5	Wound
6	Gastro-intestinal



7	Genito-urinary
16	Mediastinitis
8	Osteomyelitis
9	Otitis
10	Pericarditis/myocarditis
20	Lungs (community-acquired)
11	Lungs - VAP (ventilator-associated nosocomial infection)
12	Sinusitis
13	SNC (ventricular-derived)
19	SNC (non-ventricular-derived)
14	Lower respiratory tract (non pneumonia)
15	Upper respiratory tract
-9900	Other

TABLE OF MICROORGANISMS ISOLATED

Code	Description
700	Infezione, other
701	Acinetobacter baumannii
702	Adenovirus
740	Aspergillus
703	Bacteria, other
704	Bacteria, gram negative, other



705	Bacteria, gram positive, other
741	Anaerobic bacteria
706	Candida
742	Chlamydia
707	Clostridium
800	Covid-19
708	Cytomegalovirus
709	Epstein-Barr virus
730	Escherichia coli
710	Enterovirus
711	Fungus, other
712	Haemophilus influenzae Type B
713	Hepatitis, viral
714	Herpes simplex virus
715	HIV
716	Influenza virus
732	Klebsiella
717	Legionella
733	Malaria
736	Measles virus
718	Meningococcus
743	Morbillo virus
744	Mycobacterium
719	Mycoplasma
Code	Description
720	Parainfluenza virus
721	Pertussis
722	Pneumococcus

723	Pneumocystis carinii
734	Pseudomonas
724	Rotavirus
725	RSV
726	Salmonella
727	Staphylococcus aureus
728	Staphylococcus, other
729	Stenotrophomonas
735	Group B Streptococcus
737	Streptococcus, other
738	Varicella
739	Virus, other
799	No organism detected

Appendix C - Data set structure of Certificate of Delivery Care Registry (CeDAP)

CeDAP (Ministerial Decree no. 349 of 16 July 2001) is organized in two relational tables, called CAP1 and CAP2:

- 1) table CeDAP 1: collects information referring to the birthplace, parents, pregnancy;
- 2) table CeDAP 2: collects information referring to the childbirth, newborn, and the possible presence of congenital malformations or the causes of neonatal mortality.

The linkage between table CAP1 and table CAP2 occurs via the presence in both of parallel fields such as the code for the healthcare unit in which the delivery took place, hospital code, delivery code; these constitute the uniqueness of the key which must be

guaranteed for the entire year of reference. In CAP2 the uniqueness of the record is guaranteed by the progressive child/birth order field.

Table CeDAP 1

Variable	Measure ment unit	Notes
Hospital code	String	Primary key for the “CeDAP 1” table If the delivery took place in hospital or with the assistance of staff employed by public or private hospitals: code of the hospital where the delivery took place or in which the staff assisting the birth functionally is employed. Otherwise (including unplanned home birth): RRR99999 (RRR=region code)
Code for healthcare unit in which delivery took place	String	Primary key for the “CeDAP 1” table
Delivery code	String	Primary key for the “CeDAP 1” table. A unique delivery identifier at hospital level.
Mother's date of birth	Date	Format DDMMYYYY
Mother's citizenship	String	ISTAT code
Mother's place of birth	String	ISTAT code. If the mother was born in a foreign country, indicate the code 999 instead of the province, followed by the code of the foreign country defined by the Ministry of the Interior for the population registry. In the case of “Woman wishes not to be named”, indicate only the first three characters that identify the province, according to the ISTAT code.

Mother's place of residence	String	ISTAT code. In the case of "Woman wishes not to be named" (unrecognized child or unknown parentage) the first three characters that identify the province, according to the ISTAT code, must be entered with the code 999 and for the subsequent ones three characters must be omitted.
Region and local health board of the mother's place of residence	String	Region: Permitted values are three-character codes defined by the Ministerial Decree of 17 September 1986, published in the Official Gazette n. 240 of 15 October 1986, and subsequent amendments, also used in the models for surveying the management and economic activities of local health unit. ASL: The field must be completed with the three-character codes of the ASL (source MRAFase1). Use 999 for residents abroad.
Variable	Measurement unit	Notes
Maternal educational level	String	Permitted values: 1=Laurea; 2=University diploma or laurea breve; 3=Secondary school diploma; 4=Primary school diploma; 5=Elementary school diploma or no qualification

Maternal employment status	String	This index is intended to record the professional condition (employed/unemployed), professional position and branch of economic activity. The three-character code is composed as follows: First digit - 1=employed; 2=unemployed; 3=looking for a job; 4=student; 5=housewife; 6=other condition. If employed, enter second digit (professional position) and third digit (branch of economic activity): Second digit - 1=entrepreneur or self-employed; 2=other self-employed; 3=employee: manager or directive board member; 4=employed in tertiary sector; 5=employed in primary or secondary sector; 6=other employee (intern, home worker, etc.). Third digit - 1=agriculture, hunting and fishing; 2=industry; 3=commerce, public services, hospitality; 4=public administration; 5=other private services
Maternal marital status	String	Permitted values: 1=Never married; 2=Married; 3=Separated; 4=Divorced; 5=Widowed
Wedding date	Date	If married woman, indicate the month and year of only or last marriage. Format MMYYYY
Previous conceptions	String	Indicate whether the woman has had other conceptions before this birth.
Number of previous births	Numeric	Indicate the total number of births the woman has had before the current one.
Number of live newborns	Numeric	To insert the number of live newborns
Stillborn	Numeric	Insert the number of stillborns

Number of spontaneous abortions	Numeric	Insert the number of spontaneous abortions
Voluntary termination of pregnancy (VTP)	Numeric	Insert the number of VTP
Previous cesarean sections	Numeric	Indicate number of C-sections
Date of last birth	Date	Format DDMMYYYY
Father's date of birth	Date	Format DDMMYYYY
Father's citizenship	String	The same considerations apply as for the mother's citizenship.
Father's place of birth	String	The same considerations apply as for the mother's place of birth.
Paternal educational level	String	The same considerations apply as for the mother's educational qualification
Paternal employment status	String	The same considerations apply as for the professional status of the mother.

Variable	Measure ment unit	Notes
Consanguineous relationship	String	Permitted values: 1=4th degree (children of brothers/sisters); 2=5th degree (spouse married to son or daughter of a 1st cousin); 3=6th degree (second cousins).
Pregnancy check-ups	String	Permitted values: 1=none; 2=1-4; 3=>4
First check-up during pregnancy	Numeric	Specify the number of completed weeks in which the first appointment (for assessment and check-up) of the pregnancy took place.
Number of ultrasound examinations	Numeric	If the number of ultrasound examinations are more than 9, insert the value 9.
Amniocentesis	String	Permitted values: 1=Yes; 2=No

Chorionic villi	String	Permitted values: 1=Yes: 2=No
Fetoscopy/funiculocentesis	String	Permitted values: 1=Yes: 2=No
Ultrasound > 22 weeks	String	Permitted values: 1=Yes: 2=No
Course of pregnancy	String	Permitted values: 1=physiological; 2=pathological Pregnancy with a pathological course means a pregnancy in which maternal-fetal morbidity has occurred.
Fetal growth defect	String	Fetal growth defect refers to slowed intrauterine growth (values lower than the 10th percentile) diagnosed in the pre-natal phase. Permitted values: 1=Yes: 2=No
Medical assisted procreation (PMA)	String	Indicate whether conception took place with the application of a medically assisted procreation technique. Permitted values: 1=Yes: 2=No
Method of medically-assisted procreation	String	If conception occurred through the use of medically assisted reproduction techniques, specify the method followed: 1=only pharmacological treatment for induction of ovulation; 2=IUI (Intra Uterine Insemination) medically assisted procreation method consisting of the transfer of male gametes into the uterine cavity; 3=GIFT (Gamete IntraFallopian Transfer) medically assisted procreation method consisting of the transfer of gametes (male and female) into the fallopian tubes of the fallopian tube, generally laparoscopically; 4=IVF (Fertilization in Vitro



		and Embryo Transfer) medically assisted procreation method which involves in vitro fertilization and the transfer of the embryos thus obtained into the uterus; 5=ICSI (Intra Cytoplasmic Sperm Injection) medically assisted procreation method which involves in vitro fertilization through the injection of a sperm into the cytoplasm of an oocyte and the transfer of the embryos thus obtained into the uterus; 6=Other techniques
Gestational age	Numeric	Weeks of amenorrhoea

Table CeDAP 2

Variable	Measurement unit	Notes
Hospital code	String	Primary key for the "CeDAP 2" table
Code for healthcare unit in which delivery took place	String	Primary key for the "CeDAP 2" table
Delivery code	String	Primary key for the "CeDAP 2" table
Progressive child/birth order	String	Primary key for the "CeDAP 2" table
Place of birth	String	Permitted values: 1=hospital; 2=home; 3=if delivery occurred in other assisted situation; 4=other (street, transport, etc.)
Type of labour	String	Permitted values: 1=spontaneous; 2=induced
Induction of labor	String	Permitted values: 1=pharmacological; 2=amniorrhexis
Fetal presentation at birth	String	Permitted values: 1=vertex; 2=breech; 3=crown; 4=bregma; 5=facial;6=shoulder

Mode of delivery	String	Permitted values: 1= spontaneous vaginal birth; 2= elective C-section; 3=C-section during labor; 4=forceps-assisted delivery; 5=delivery with the help of suction cup; 6=other
Date of delivery	Date	Indicate the date with a 12-character code (day, month, year, hour, minute)
Type of delivery	String	Permitted values: 1=single birth; 2=multiple birth
Number of male births	Numeric	Nel caso di parto plurimo precisare il numero dei nati di sesso maschile
Number of female births	Numeric	Nel caso di parto plurimo precisare il numero dei nati di sesso femminile
Obstetrician/midwives	String	Permitted values: 1=Yes: 2=No
Obstetrician/midwives-gynecologist	String	Permitted values: 1=Yes: 2=No
Pediatrician/neonatologist	String	Permitted values: 1=Yes: 2=No
Anesthetist	String	Permitted values: 1=Yes: 2=No
Other medical staff	String	Permitted values: 1=Yes: 2=No
Presence in delivery room	String	Indicate which individuals were present during delivery: 1=newborn's father; 2=other family member of person in labor; 3=other close acquaintance of person in labor
Infant sex	String	Permitted values: 1=Male; 2=Female
The appearance of external genitalia	String	Permitted values: 1=male; 2=female; 3=indeterminate
Birth order	String	In the case of multiple births, indicate the birth order. Include stillbirths.
Birth weight	Numeric	Expressed in grams
Birth length	Numeric	Expressed in cm
Head circumference	Numeric	Expressed in cm



Vitality	String	Permitted values: 1=born alive; 2=stillborn
Apgar score	Numeric	5-minute APGAR score
Newborn resuscitation	String	Permitted values: 1=Yes: 2=No
Presence of malformations	String	Permitted values: 1=Yes: 2=No
Rh prophylaxis	String	Permitted values: 1=Yes: 2=No
Variable	Measurement unit	Notes
Main illness of fetus	String	Used International Classification of Diseases, Ninth Revision codes Clinical Modification
Description: main illness of fetus	String	
Other illness of fetus	String	Used International Classification of Diseases, Ninth Revision codes Clinical Modification
Description other illness of fetus	String	
Main maternal illness concerning fetus	String	Used International Classification of Diseases, Ninth Revision codes Clinical Modification
Description: main maternal illness concerning fetus	String	
Other maternal illness concerning fetus	String	Use International Classification of Diseases, Ninth Revision codes Clinical Modification
Description: other maternal illness concerning fetus	String	
Other pertinent circumstances	String	Use International Classification of Diseases, Ninth Revision codes Clinical Modification
Description: other pertinent circumstances	String	



Moment of death	String	Permitted values: 1=death occurred before labor; 2=death occurred during labor; 3=death occurred during delivery; 4=unknown
Instrumental tests carried out in case of malformations	String	Indicate whether instrumental tests were carried out. Permitted values: 1=Yes: 2=No
Photographs taken in case of malformations	String	Indicate whether photographs were taken. Permitted values: 1=Yes: 2=No
Autopsy	String	Permitted values: 1= cause of death identified was confirmed by autopsy; 2=result of autopsy available later; 3=autopsy was not carried out
Malformations diagnosed 1	String	Use International Classification of Diseases, Ninth Revision codes Clinical Modification
Malformations diagnosed 2	String	Use International Classification of Diseases, Ninth Revision codes Clinical Modification
Malformations diagnosed 3	String	Use International Classification of Diseases, Ninth Revision codes Clinical Modification
Karyotype	String	Specify in full the cytogenetic diagnosis carried out in order to identify numerical and structural chromosomal anomalies
Gestational age at diagnosis of malformation	Numeric	Indicate gestational age, in weeks, at which malformation was diagnosed
Neonatal age at diagnosis of malformation	Numeric	Indicate neonatal age, in days, at which malformation was diagnosed
Sibling malformations	String	Permitted values: 1=Yes: 2=No
Maternal malformations	String	Permitted values: 1=Yes: 2=No
Paternal malformations	String	Permitted values: 1=Yes: 2=No
Maternal grandparents malformations	String	Permitted values: 1=Yes: 2=No



Variable	Measurement unit	Notes
Paternal grandparents malformations	String	Permitted values: 1=Yes: 2=No
Maternal family members malformations	String	Permitted values: 1=Yes: 2=No
Paternal family members malformations	String	Permitted values: 1=Yes: 2=No
Illness during pregnancy - 1	String	Use International Classification of Diseases, Ninth Revision codes Clinical Modification
Description illness during pregnancy - 1	String	
Illness during pregnancy - 2	String	Use International Classification of Diseases, Ninth Revision codes Clinical Modification
Description illness during pregnancy - 2	String	

Appendix D – Environmental data

Veneto Region - weather database available by station

(<https://www.ambienteveneto.it/datiolari/>)

Variable	Measurement unit	Notes
Data measured	Date	Format DD/MM/YYYY HH
Temperature at 2 m (°C) - average	Numeric	
Rain (mm) - total	Numeric	
Relative humidity at 2 m (%) - min	Numeric	
Relative humidity at 2 m (%) - max	Numeric	
Global radiation (W/m2) - total	Numeric	
Pressure at sea level (hPa) - average	Numeric	
Wind at 10 m - average speed(m/s)	Numeric	
Wind at 10 m - prevailing direction (degrees)	Numeric	
Wind at 10 m - prevailing direction (sector)	String	Permitted values: E=east; NNE= north- north-east; NNO= north- north-west; ESE=east-south-east; NO=north-west; NE=north-east; ENE= east-north- east; S=south;



		SSO= south- south-west; OSO=west-south-west; SO=south-west; N=north; O=west; ONO=west-north-west; SSE=south-south-east; SE= south-east
Hydrometric level (m) - min	Numeric	
Hydrometric level (m) - average	Numeric	
Hydrometric level (m) - max	Numeric	
Flow (m ³ /s) - min	Numeric	
Flow (m ³ /s) - average	Numeric	
Flow (m ³ /s) - max	Numeric	
Leaf wettability (% time)	Numeric	



Veneto Region - weather station database (identifier, name, location-province)

Identifier	Name	Location (province)
19	Agordo	Belluno
3	Arabba	Belluno
53	Auronzo	Belluno
264	Belluno - aeroporto	Belluno
402	Biois a Cencenighe	Belluno
216	Cansiglio - Tramedere	Belluno
9	Caprile	Belluno
247	Casamazzagno	Belluno
61	Cimacanalè (Santo Stefano di Cadore)	Belluno
92	Col Indes (Tambre)	Belluno
239	Col di Pra'	Belluno
237	Cortina d'Ampezzo - Gilardon	Belluno
246	Costalta	Belluno
59	Domegge di Cadore	Belluno
223	Falcade	Belluno
47	Faloria	Belluno
217	Feltre	Belluno
610	Fener	Belluno
56	Forno di Zoldo - Campo	Belluno
616	Fortogna (Longarone)	Belluno
15	Gares	Belluno
612	La Guarda (Cesiomaggiore)	Belluno
200	Lamon - Sala	Belluno
199	Longarone	Belluno
60	Malga Campobon (San Pietro di Cadore)	Belluno
11	Malga Ciapela	Belluno
238	Misurina	Belluno
544	Mondeval di Sopra (Selva di Cadore)	Belluno
67	Monte Avena	Belluno
545	Passo Cimabanche	Belluno
37	Passo Falzarego	Belluno



91	Passo Monte Croce Comelico	Belluno
80	Passo Pordoi	Belluno
203	Passo Valles	Belluno
17	Perarolo	Belluno
132	Pescul	Belluno
55	Pian del Crep (Val di Zoldo)	Belluno
48	Podestagno (Cortina d'Ampezzo)	Belluno
505	Ponte Rio Cordon (Selva di Cadore)	Belluno
245	Quero	Belluno
		Location
Identifier	Name	(province)
219	Rovina di Cancia (Borca di Cadore Q1335)	Belluno
236	San Martino d'Alpago	Belluno
21	Sant'Andrea (Gosaldo)	Belluno
22	Sant'Antonio Tortal	Belluno
266	Santa Giustina Bellunese	Belluno
58	Santo Stefano di Cadore	Belluno
268	Sella Ciampigotto	Belluno
235	Soffranco	Belluno
25	Sospirolo	Belluno
93	Torch	Belluno
224	Valle di Cadore	Belluno
262	Valpore (Seren del Grappa)	Belluno
50	Villanova (Borca di Cadore)	Belluno
169	Agna	Padova
152	Balduina (Sant'Urbano)	Padova
611	Bovolenta	Padova
179	Campodarsego	Padova
110	Cittadella	Padova
175	Codevigo	Padova
211	Codevigo - Ca' di Mezzo	Padova
142	Faedo (Cinto Euganeo)	Padova
265	Galzignano - Ca' Demia	Padova
177	Grantorto	Padova
111	Legnaro	Padova

151	Masi	Padova
106	Montagnana	Padova
201	Monte Grande (Teolo)	Padova
572	Ospedaletto Euganeo	Padova
234	Padova	Padova
551	Sant'Elena	Padova
170	Teolo	Padova
122	Trebaseleghe	Padova
182	Tribano	Padova
115	Adria - Bellombra	Rovigo
96	Bagnolo di Po - Pellizzare	Rovigo
113	Castelnovo Bariano	Rovigo
98	Concadirame (Rovigo)	Rovigo
116	Frassinelle Polesine	Rovigo
121	Lusia	Rovigo
622	Pettorazza Grimani loc. Botti Barbarighe	Rovigo
101	Porto Tolle - Pradon	Rovigo
Identifier	Name	Location (province)
112	Rosolina - Po di Tramontana	Rovigo
99	San Bellino	Rovigo
231	Sant'Apollinare (Rovigo)	Rovigo
221	Trecenta	Rovigo
114	Villadose	Rovigo
577	Breda di Piave Via Bovon	Treviso
102	Castelfranco Veneto	Treviso
100	Conegliano	Treviso
156	Crespano del Grappa	Treviso
195	Farra di Soligo	Treviso
574	Follina	Treviso
186	Gaiarine	Treviso
197	Maser	Treviso
227	Mogliano Veneto	Treviso
28	Monte Cesen	Treviso
619	Montebelluna loc. Contea	Treviso



620	Nervesa della Battaglia	Treviso
196	Oderzo	Treviso
204	Ponte di Piave	Treviso
187	Roncade	Treviso
220	Treviso	Treviso
189	Valdobbiadene - Bigolino	Treviso
185	Vazzola - Tezze	Treviso
188	Villorba	Treviso
240	Vittorio Veneto	Treviso
183	Volpago del Montello	Treviso
184	Zero Branco	Treviso
136	Sappada	Udine
425	Bibione	Venezia
230	Campagna Lupia - Valle Averte	Venezia
160	Cavallino Treporti	Venezia
178	Cavarzere	Venezia
613	Chioggia (centro)	Venezia
168	Chioggia - Sant'Anna	Venezia
164	Eraclea	Venezia
454	Favaro Veneto	Venezia
165	Fossalta di Portogruaro	Venezia
615	Jesolo - Cortellazzo	Venezia
166	Lugugnana (Portogruaro)	Venezia
617	Marcon loc. Zuccarello	Venezia
167	Mira	Venezia
Identifier	Name	Location (province)
163	Noventa di Piave - Grassaga	Venezia
159	Portogruaro - Lison	Venezia
623	Stra	Venezia
252	Venezia - Istituto Cavanis	Venezia
123	Arcole	Verona
118	Bardolino - Calmasino	Verona
251	Bosco Chiesanuova	Verona
127	Buttapietra	Verona



510	Caprino Veronese - Platano	Verona
129	Castelnuovo del Garda	Verona
260	Colognola ai Colli	Verona
120	Dolce'	Verona
128	Grezzana	Verona
126	Illasi	Verona
124	Marano di Valpolicella	Verona
621	Peschiera - Dolci	Verona
119	Roverchiara	Verona
108	Salizzole	Verona
87	San Bortolo	Verona
71	San Giovanni Ilarione	Verona
125	San Pietro in Cariano	Verona
117	Sorga'	Verona
253	Valeggio sul Mincio	Verona
131	Vangadizza (Legnago)	Verona
633	Verona - Santa Caterina	Verona
104	Villafranca di Verona	Verona
218	Asiago - aeroporto	Vicenza
72	Astico a Pedescala	Vicenza
145	Barbarano Vicentino	Vicenza
232	Bassano del Grappa	Vicenza
147	Breganze	Vicenza
148	Brendola	Vicenza
190	Brustole' (Velo d'Astico)	Vicenza
68	Castana	Vicenza
409	Chiampo	Vicenza
73	Contra' Doppio (Posina)	Vicenza
88	Crespadoro	Vicenza
618	Crosara (Marostica)	Vicenza
501	Dolina Campoluzzo (Monte Lozze)	Vicenza
600	Grumolo delle Abbadesse	Vicenza
614	Isola Vicentina	Vicenza
Identifier	Name	Location (province)



105	Lonigo	Vicenza
139	Lusiana	Vicenza
134	Malo	Vicenza
191	Molini (Laghi)	Vicenza
81	Monte Summano	Vicenza
74	Monte Verena	Vicenza
83	Montecchio Precalcino	Vicenza
149	Montegalda	Vicenza
140	Passo Santa Caterina (Valdagno)	Vicenza
192	Passo Xomo (Posina)	Vicenza
248	Piana di Marcesina - Rendole	Vicenza
82	Pove del Grappa - Costalunga	Vicenza
77	Recoaro Mille	Vicenza
135	Rifugio la Guardia (Recoaro Terme)	Vicenza
144	Rosa'	Vicenza
625	Staro (Valli del Pasubio)	Vicenza
624	Tonezza del Cimone	Vicenza
146	Trissino	Vicenza
76	Turcati (Recoaro Terme)	Vicenza
79	Valdagno	Vicenza
137	Valli del Pasubio	Vicenza
451	Vicenza - Sant'Agostino	Vicenza