Healthcare non-expenditure statistics manual and guidelines for completing the Joint questionnaire on non-monetary healthcare statistics

2023 edition

MANUALS AND GUIDELINES

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Healthcare non-expenditure statistics manual and guidelines for completing the Joint questionnaire on non-monetary healthcare statistics

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Contents

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([1]) Commission Regulation (EU) 2022/2294 of 23 November 2022 implementing Regulation (EC) No 1338/2008 of the European Parliament and of the Council as regards statistics on healthcare facilities, healthcare human resources and healthcare utilisation - OJ L 304, 24.11.2022, p. 42. http://data.europa.eu/eli/reg/2022/2294/oj

Abbreviations and acronyms

ALOS	Average length of stay
CAT	Computerized axial tomography scanner
CONVAL	Content Validation Service in EDAMIS4
CT	Computed tomography scanner
DSD	Data Structure Definition
DG SANTE	Directorate-General for Health and Food Safety
EC	European Commission
EDAMIS	Electronic Data Files Administration and Management Information System
ESS-MH	European Statistical System – Metadata Handler
EU	European Union
FTE	Full-time equivalent
GDPR	General Data Protection Regulation (EU)
HCNE	Healthcare non-expenditure statistics
HDD	Hospital Discharges Data
HC	Classification of Healthcare Functions
HP	Classification of Health Care Providers
ICD	International Classification of Diseases
ICHA	International Classification for Health Accounts
ICT	Information and Communication Technologies
ICU	Intensive Care Unit
ILO	International Labour Organization
ISCO	International Standard Classification of Occupations
ISED	International Standard Classification of Education
ISHMT	International Shortlist for Hospital Morbidity Tabulation
ISO	International Organization for Standardization
JQNMHC	Joint Questionnaire on Non-Monetary Healthcare Statistics (OECD-Eurostat-WHO-Europe)
NUTS	Nomenclature of Territorial Units for Statistics
MS	EU Member States
MRI	Magnetic resonance imaging
OECD	The Organisation for Economic Co-operation and Development
PET	Positron Emission Tomography
Reporting countries	27 EU-MS, EFTA Countries, EU candidate countries (Albania, Moldova, Montenegro, North Macedonia, Serbia, Türkiye, Ukraine) and potential candidate countries (Bosnia and Herzegovina, Georgia, Kosovo ([2])).
SDMX	Statistical Data and Metadata eXchange
SHA	System of Health Accounts
SPECT	Single Photon Emission Computed Tomography
STRUVAL	Structural Validation Service in EDAMIS4
WHO	World Health Organisation

([2]) This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

1 Introduction

1.1. Aim

This manual provides the guidelines for reporting countries ([3]) when completing the OECD/Eurostat/WHO-Europe Joint Questionnaire on Non-Monetary Healthcare statistics (JQNMHC). The manual covers both the mandatory and the voluntary data collection. These data are also known as Healthcare non-Expenditure statistics (HCNE). The manual is not a legally binding document but is intended as a help for countries.

The overall objective of this joint data collection is to provide internationally comparable data on key aspects of healthcare systems, focussing on non-monetary resources of healthcare systems. This data collection complements the existing joint OECD/Eurostat/WHO-Europe data collection on Health Accounts.

1.2. Contacts

Contacts for the data collection are:

Eurostat: ESTAT-JQNMHCS(a)ec.europa.eu

OECD: JQNMHC(a)oecd.org

WHO-Europe: euJDC(a)who.int

1.3. Background

1.3.1. Overview

OECD, Eurostat and WHO-Europe have collected data on non-monetary healthcare resources for many years. The most important reason for joint data collection is to reduce the burden of data collection on the national authorities responsible for providing statistical information to the international organisations, as they have to send the data only once. Moreover, a joint effort promotes the use of international standards and definitions and improves the consistency of data reported by international organisations.

([3]) Countries covered by Commission Regulation (EU) 2022/2294 implementing Regulation (EC) No 1338/2008 of the European Parliament and of the Council as regards statistics on healthcare facilities, healthcare human resources and healthcare utilization.

In 2010, the first Joint OECD/Eurostat/WHO-Europe Questionnaire on Non-Monetary Healthcare statistics, focused on healthcare resources, was launched. At that point, Eurostat requested data for two separate data collections:

- The JQNMHC; the joint data collection with OECD and WHO-Europe on healthcare resources (human and physical) using one focal point for all three organisations;
- A separate data collection on healthcare activities (additional Eurostat questionnaire).

In 2013, healthcare activities were incorporated in the joint data collection. As a result, the Eurostat data collection is split into:

- The JQNMHC with OECD and WHO-Europe, on healthcare resources (human and physical) and healthcare activities (with some additional Eurostat variables) using one focal point for all three organisations;
- A separate module on regional data, hospital technical resources and physicians by detailed categories (additional Eurostat module).

In 2015, a new module on health workforce migration was added to the JQNMHC responding to the growing need to have data on movement of healthcare personnel.

In 2021, pilot indicators on Intensive Care Units and Teleconsultations were included for the first time.

The data collection taking place in 2023, for reference year 2021, is the first collection where a set of variables are mandatory for reporting countries. The variables provided on voluntary basis remain important to collect annually and improve in the future.

1.3.1. Working on a legal basis for the data collection

As foreseen in Regulation (EC) 1338/2008 on Community statistics on public health and health and safety at work ([4]), in 2009 Eurostat initiated work to develop a legal basis for collecting non-monetary healthcare data.

A Task Force chaired by Eurostat with the participation of nine Member States and DG SANTE was set up in December 2013. The Task Force proposed a dataset to meet the main needs on healthcare statistics at EU level. The work to improve the data availability and comparability continued. Eurostat launched grant actions in two rounds in order to support Member States in improving their data, and organised a workshop on healthcare non-expenditure statistics in which countries shared their experience in gathering data and making estimates.

In 2019, the Task Force on Healthcare non-Expenditure reviewed the minimum dataset foreseen to be mandatory in the future. An ad-hoc pilot data collection on hospital beds was made and a revised minimum dataset was discussed in the Technical Group Healthcare non-Expenditure. The focus is on the most policy-relevant indicators while taking into account data availability.

Following the discussions and consultations of Member States, the Commission adopted Commission Regulation (EU) 2022/2294 specifying a number of mandatory variables for reporting countries covered by it (Annex A).

1.4. User needs

The main users of the data are European Commission Directorates-Generals Health and Food Safety (DG SANTE), Employment, Social Affairs & Inclusion (DG EMPL) and Economic and Financial Affairs (DG ECFIN) in view of health policy papers and health strategies. Other policy-makers, national

([4]) http://data.europa.eu/eli/reg/2008/1338/2021-01-01

administrations, researchers, media and the general public are other users of the statistics. The statistics cater for the need to describe, compare and analyse healthcare resources and activities on national, and for some variables, regional (NUTS2) level. Users are sometimes requesting data on an even more disaggregated level but this has so far not been feasible.

1.5. Legal basis

Regulation (EC) No 1338/2008 of the European Parliament and of the Council on Community statistics on public health and health and safety at work, implemented by Commission Regulation (EU) 2022/2294 as regards statistics on healthcare facilities, healthcare human resources and healthcare utilisation.

Derogations to the above requirements are specified in Commission Implementing Decision (EU) 2022/2306 ([5]) granting derogations to certain Member States with respect to the transmission of statistics pursuant to Regulation (EC) No 1338/2008 of the European Parliament and of the Council, as regards statistics on healthcare facilities, healthcare human resources and healthcare utilisation.

1.6. Other

This manual contains information on a data collection which is carried out jointly with OECD and WHO-Europe and identifies what is specific for countries covered by Regulation (EC) No 1338/2008 as implemented by Commission Regulation (EU) 2022/2094. This manual has been consulted with EU Member State experts and should be the primary source for these countries.

Questions from countries regarding the data collection are answered on an ongoing basis. A Questions&Answers document can be found on CIRCABC (link below), it is regularly updated:

https://circabc.europa.eu/ui/group/7b3a8e80-bdaa-483c-96ef-c4d152b50172/library/cba6ec75-9639-4de9-a56c-517c0c3f962f?p=1&n=25&sort=modified_DESC

([5]) Commission Implementing Decision (EU) 2022/2306 of 23 November 2022 granting derogations to certain Member States with respect to the transmission of statistics pursuant to Regulation (EC) No 1338/2008 of the European Parliament and of the Council, as regards statistics on healthcare facilities, healthcare human resources and healthcare utilisation. http://data.europa.eu/eli/dec_impl/2022/2306/oj

2 Methodology

2.1. General information

The joint questionnaire on non-monetary healthcare statistics consists of four joint parts and one 'Eurostat module':

- Health employment and education (e.g. number of physicians, nurses, graduates, etc.);
- Health workforce migration (e.g. stock and flow of foreign-trained physicians and nurses);
- Physical and technical resources (e.g. number of beds, medical equipment, etc.);
- Healthcare activities (e.g. number of consultations, hospital discharges, surgical procedures, etc.);
- Eurostat module (additional data related to health employment, physical and technical resources and healthcare activities).

The data are collected in Excel reporting questionnaires with numerical data (in Excel 97-2003 format).

Disaggregated Hospital Discharges Data (HDD) shall be sent in two separate text files (.CSV); one for regional data and one for national data.

Pilot data collections are integrated in the above-mentioned questionnaires. To consult a list of all variables collected, please see Annex B.

For reference metadata, please see Chapter 7.

2.2. Coverage

The data shall cover the whole country.

2.3. Data sources

The data shall mainly be compiled from administrative records, as referred to in Article 17a of Regulation (EC) No 223/2009 on European statistics ([6]).

([6]) Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009R0223-20150608

2.3.1 Administrative sources

Administrative data comes from the national statistics or other national authorities. The administrative sources used by reporting countries may vary by country and variable, but generally refer to:

- registered health human resources and healthcare facilities. For healthcare staff, countries may use a central register for medical professionals, business registers or other forms of data collection. The underlying totality of institutions for which data collections are available may differ. In some countries, data may not yet be available for a subgroup of institutions (e.g. private hospitals) or professionals (e.g. practising physiotherapists). This is specified in the reference metadata.
- registered patients (treated or procedures applied). The underlying totality of institutions for which data collections are available may differ. In some countries, data may not be available for a subgroup of institutions (e.g. private hospitals). This is specified in the reference metadata.

2.3.2 Other sources

When administrative records are not available or of insufficient quality or coverage, use of other sources, methods or innovative approaches are accepted. It is important that the sources enable the production of comparable statistics.

Concerning the variables of the JQNMHC on cancer screening, statistics collected as part of the European Health Information Survey (EHIS) can be used.

2.4. Treatment of non-existing data and real zero

When data is not available, the cell shall be left empty.

Data that cannot exist shall be indicated as such. For variables where data is missing because it cannot exist, the dissemination tables shall be flagged with the **M-flag**. This is the case for statistics on cancer screening programmes in countries where such programmes do not exist. For further information, please consult Chapter 5 of this manual.

Real zero (0) is used when there are 0 observations of a particular variable although the variable exist in the country. This could be the case for a particular surgical procedure in a specific year, for example.

2.5. Reference period

Calendar year.

2.6. Reporting schedule

All data and national reference metadata for the reference year T shall be transmitted T+2 years by the dates in the table below for the mandatory variables (Article 6 of Regulation (EU) 2022/2294). For the non-mandatory variables, reporting countries are kindly requested to send all the data by 28 February if possible.

Table 1: Annual reporting schedule

Data section + reference metadata	Deadline
1. Data on Health Employment	28 February (mandatory from reference year 2023)
2. Data on Health Graduates	28 February (mandatory from reference year 2021)
3. Data on Hospital Beds and Beds in Residential Long-Term Care Facilities	28 February (mandatory from reference year 2021)
4. Data on Devices for Medical Imaging	28 February (mandatory from reference year 2021)
5. Data on Ambulatory Care	28 February (mandatory from reference year 2021)
6. Data on Hospital Care	31 August (mandatory from reference year 2023)
7. Data on Surgical Procedures	31 August (mandatory from reference year 2023)

2.7. Units of measurement

Number at the end of the reference (calendar) year.

Number, headcount.

Average number during reference year.

For some variables on health employment, number of full-time equivalent (FTE) persons is used.

For some variables on healthcare activities, percentage (%) of those screened/immunised is used.

3 Classifications (Definitions)

3.1. Harmonised definitions

The definitions for all variables of the joint questionnaire on non-monetary healthcare statistics are provided here. Mandatory variables under Regulation (EU) 2022/2294 are identified as such. The definitions are the same as, to the largest extent, and rely as much as possible on the following existing international classifications:

- International Standard Classification of Occupations, ISCO-08, ILO (2009): http://www.ilo.org/public/english/bureau/stat/isco/index.htm;
- International Classification of Diseases (ICD), WHO: https://www.who.int/standards/classifications/classification-of-diseases ;
- International Shortlist for Hospital Morbidity Tabulation (ISHMT): http://stats.oecd.org/wbos/fileview2.aspx?IDFile=e477970b-3024-4188-8dc6-13f3db201846;
- International Classification for Health Accounts (ICHA), *A System of Health Accounts*, OECD, WHO and Eurostat (2011): https://ec.europa.eu/eurostat/en/web/products-manuals-and-guidelines/-/ks-05-19-103.

3.2. Health employment and education

Statistics in this section (Table 2) should reflect the situation at the end of the reference period (calendar year). Statistics in this section are based on headcount.

Mandatory variables related to health employment (e.g. physicians, midwives and nurses, dentists, pharmacists, etc.) are requested according to the concept:

"Practising" (i.e. healthcare professionals directly providing services to patients)

For professions regulated under Directive 2005/36/EC ([7]) on the recognition of professional qualifications, all staff reported in the variables below need to meet the requirements of the Directive. The definitions in the Directive are not based on the tasks carried out but on the educational level reached.

([7]) Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications, as amended. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02005L0036-20211210

Table 2: Health employment

Physicians (Head Count)

Variable Number	Variable Name	ISCO-08 Code	Status
V1.1	Practising physicians		Mandatory
	Professionally active physicians		Voluntary
	Physicians licensed to practice		Voluntary
V1.1	***Physicians by age group and sex***		
	Physicians by age group (less than 35, 35-44, 45-54, 55-64, 65-74, 75+) and by sex		Mandatory
V1.2	***Physicians by categories***		Mandatory
	Generalist medical practitioners	2211	
V1.2.1	– General practitioners		Mandatory
V1.2.2	– Other generalist (non-specialist) medical practitioners	2212	Mandatory
	Specialist medical practitioners		
V1.2.3	– Paediatricians		Mandatory
V1.2.4	– Obstetricians and gynaecologists		Mandatory
V1.2.5	– Psychiatrists		Mandatory
V1.2.6	– Group of non-surgical specialists		Mandatory
V1.2.7	– Group of surgical specialists		Mandatory
V1.2.8	– Other specialists not elsewhere classified		Mandatory
V1.2.9	Medical doctors not further defined	2210	Mandatory

Midwives (Head Count)

Variable Number	Variable Name	ISCO-08 Code	Status
V1.3	Practising midwives		Mandatory
	Professionally active midwives		Voluntary
	Midwives licensed to practice		Voluntary

Nurses (Head Count)

Variable Number	Variable Name	ISCO-08 Code	Status
	Practising nurses		Voluntary
V1.4	– Professional nurses, practising		Mandatory
–	– Associate professional nurses, practising	3221	Voluntary
	Professionally active nurses		Voluntary
	– Professional nurses, professionally active	2221	Voluntary
	– Associate professional nurses, professionally active	3221	Voluntary
	Nurses licensed to practice		Voluntary
	– Professional nurses, licensed to practice	2221	Voluntary
	– Associate professional nurses, licensed to practice	3221	Voluntary

Caring personnel (Personal care workers) (Head Count)

Variable Number	Variable Name	ISCO-08 Code	Status
	Practising caring personnel (personal care workers)	5321 & 5322	Voluntary
	Professionally active caring personnel (personal care workers)		Voluntary

Dentists (Head Count)

Variable Number	Variable Name	ISCO-08 Code	Status
V1.5	Practising Dentists	2261	Mandatory
	Professionally active Dentists		Voluntary
	Dentists licensed to practice		Voluntary

Pharmacists (Head Count)

Variable Number	Variable Name	ISCO-08 Code	Status
V1.6	Practising Pharmacists	2262	Mandatory
	Professionally active pharmacists		Voluntary
	Pharmacists licensed to practise		Voluntary

Physiotherapists (Head Count)

Variable Number	Variable Name	ISCO-08 Code	Status
	Practising physiotherapists	2264	Voluntary

Notes: V = Variable
Fields in grey indicate non-mandatory variables

3.2.1. Practising physicians

Variable 1.1. Mandatory from reference year 2023, number (headcount)

Definition 1: '**Practising physicians'** means medical doctors who have graduated in medicine from medical faculties or similar institutions and are licensed to practice. Practising physicians provide services for individual patients, families and communities. It also refers to interns and resident physicians who have graduated in medicine from medical faculties or similar institutions and who provide services under supervision of other medical doctors.

Only physicians meeting the requirements of Directive 2005/36/EC on the recognition of professional qualifications shall be included.

Includes:

- Practising physicians who have completed studies in medicine at university level (granted by adequate diploma) and who are licensed to practice
- Interns and resident physicians (with adequate diploma and providing services under supervision of other medical doctors during their postgraduate internship or residency in a healthcare facility)
- Salaried and self-employed physicians delivering services irrespectively of the place of service provision
- Foreign physicians licensed to practice and actively practising in the country
- All physicians providing services for patients, including radiology, pathology, microbiology, haematology, hygiene.

Further information on inclusion criteria
Countries may have national criteria concerning the minimum requirements for physicians to be considered practising. These criteria should be described in the reference metadata. They could include a minimum number of hours of consultations per week, or a minimum income from the social security insurance, and apply if the physician has other activities or is retired and receives a pension.

Excludes:

- Students who have not yet graduated
- Dentists, stomatologists, dental and maxillofacial surgeons
- Physicians working in administration, research and in other posts that excludes direct contact with patients
- Unemployed physicians and retired physicians
- Physicians working abroad.

3.2.2. Professionally active physicians

Number (headcount)

Professionally active physicians includes practising physicians and other physicians for whom their medical education is a prerequisite for the execution of the job.

Includes:

- Physicians who provide services for individual patients
- Physicians working in administration and management positions requiring a medical education
- Physicians conducting research into human disorders and illness and preventive and curative methods
- Physicians participating in the development and implementation of health promotion and public health laws and regulations
- Physicians preparing scientific papers and reports

Excludes:

- Dentists, stomatologists, dental and maxillofacial surgeons
- Physicians who hold a post / job under which medical education is not required
- Unemployed physicians and retired physicians
- Physician working abroad.

3.2.3. Physicians licensed to practice

Number (headcount)

Physicians licensed to practice includes practising and other (non-practising) physicians who are registered and entitled to practice as healthcare professionals.

Includes:

- Physicians who provide services for individual patients
- Physicians for whom their medical education is a prerequisite for the execution of the job
- Physicians for whom their medical education is NOT a prerequisite for the execution of the job
- Physicians licensed to practice but who due to various reasons are not economically active (e.g. unemployed or retired)
- Physicians working abroad

Excludes:

- Dentists, stomatologists, dental and maxillofacial surgeons

3.2.4. Physicians by age and sex

Variable 1.1. Mandatory from reference year 2023; characteristics and breakdowns:

- Practising physicians (see inclusion/exclusion above).
- Number (headcount) at the end of the reference period.
- Total and breakdown by age and by sex (male/female).
- Age groups: less than 35, 35–44, 45–54, 55–64, 65–74, 75 and older.

3.2.5. Number of practising physicians by category

Variable 1.2. Mandatory from reference year 2023; characteristics and breakdowns:

- Practising physicians (see inclusion/exclusion above).
- Number (headcount) at the end of the reference period.
- Breakdown by category (see inclusion/exclusion criteria below).

Definition 2: **'Category of practising physicians'** means the predominant (main) area of practice of doctors.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the minimum basic/specialist medical training of doctors of medicine.

The data collection includes three broad categories of doctors (corresponding to the ISCO-08 codes at the 4-digit level) and eight sub-categories (Figure 1).

Generalist medical practitioners (ISCO-08 code: 2211)

1.2.1 General practitioners
1.2.2 Other generalist (non-specialist) medical practitioners

Specialist medical practitioners (ISCO-08 code: 2212)

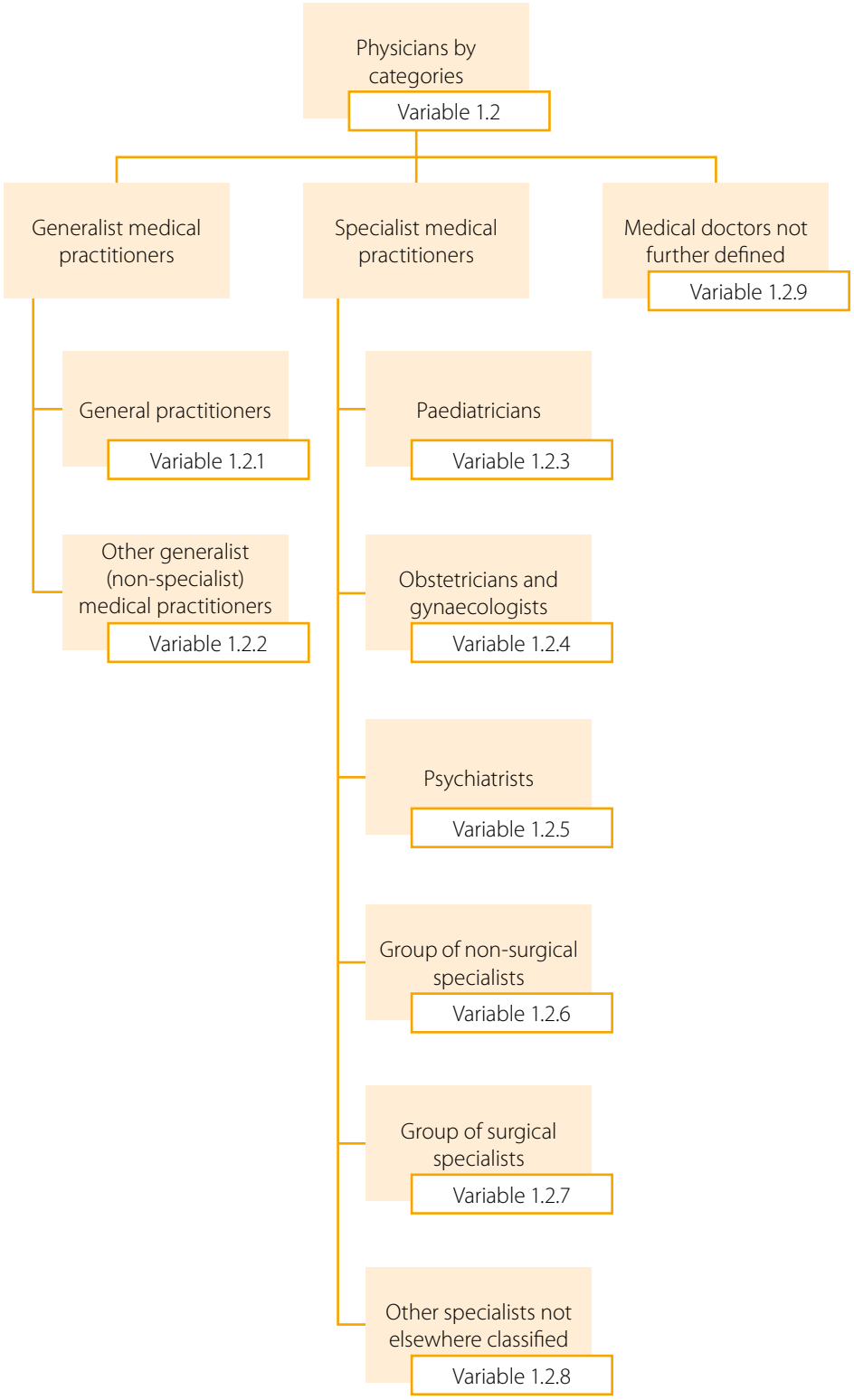
1.2.3 Paediatricians
1.2.4 Obstetricians and gynaecologists
1.2.5 Psychiatrists
1.2.6 Group of non-surgical specialists
1.2.7 Group of surgical specialists
1.2.8 Other specialists not elsewhere classified

1.2.9 Medical doctors not further defined (ISCO-08 code: 2210)

The table on physicians by categories should cover the whole physician workforce, including **medical interns and residents** as well as physicians without specialisation. Theoretically, the two first broad categories ('Generalist medical practitioners' and 'Specialist medical practitioners') should cover all physicians. In accordance with ISCO-08 definition, the last category **'Medical doctors not further defined'** should be used only if some doctors cannot be classified under 'Generalist medical practitioners' or 'Specialist medical practitioners'. Data senders are strongly encouraged to verify that physicians have been properly allocated to the specific categories. **The sum of the three broad categories should add up to the total number of (practising) physicians.**

Further information on Medical interns and residents
Medical interns and residents who are pursuing postgraduate training should be allocated in their area of training. If they have not chosen a specialisation yet, they are considered as "Other generalist (non-specialist) medical practitioners". Physicians in training who cannot be split according to the specialty in which they are training should be reported in the category "Medical doctors not further defined".

Figure 1: Variable 1.2: Physicians by Category



3.2.5.1. GENERALIST MEDICAL PRACTITIONERS (ISCO-08 CODE: 2211)

Generalist medical practitioners do not limit their practice to certain disease categories or methods of treatment, and may assume responsibility for the provision of continuing and comprehensive medical care to individuals, families and communities.

Includes:

- General practitioners
- District medical doctors - therapists
- Family medical practitioners
- Primary healthcare physicians
- Medical doctors (general)
- Medical officers (general)
- Medical interns or residents specialising in general practice or without any area of specialisation yet

Further information on inclusion:
Medical interns and residents who have completed basic medical university education and are undertaking postgraduate clinical training are included here, if they are specialising in general practice or if they have not chosen their area of specialisation yet.

Excludes:

- Paediatricians
- Obstetricians and gynaecologists
- Specialist physicians (internal medicine)
- Psychiatrists
- Clinical officers
- Feldschers

The broad category '**General medical practitioners**' is split to distinguish the number of '**General practitioners**' ('family doctors'), providing continuous medical care to individuals and families most often in primary care sector, from '**Other generalists/non-specialists**' who may be working in hospitals.

3.2.5.1.1. GENERAL PRACTITIONERS

Definition 3: **'General practitioners'** means medical doctors who assume responsibility for the provision of continuing and comprehensive medical care to individuals, families and communities.

Evidence of formal qualifications of general practitioners is specified in Directive 2005/36/EC, Annex V, section V.1, table 5.1.4.

Includes:

- General practitioners
- District medical doctors - therapists
- Family medical practitioners ('family doctors')
- Medical interns or residents specialising in general practice

Further information on inclusion:
Some countries may consider 'General practice' and 'Family medicine' as medical specialisations, but these occupations should always be classified here.

Offices of general medical practitioners (Classified as HP.3.1.1 in SHA2011) includes establishments of doctors who hold a degree in medicine and are primarily engaged in the independent practice of general medicine.

Excludes:

- Paediatricians
- Other generalist (non-specialist) medical practitioners

3.2.5.1.2. OTHER GENERALIST (NON-SPECIALIST) MEDICAL PRACTITIONERS

Definition 4: **'Other generalist (non-specialist) medical practitioners'** means practitioners who do not limit their practice to certain disease categories or methods of treatment. They do not work in an area of specialisation.

Includes:

- Generalists not included under general practitioners
- Generalist/non-specialist practitioners working in hospital or in other settings
- Medical interns or residents without any area of specialisation yet

Excludes:

- General practitioners ('family doctors')
- Paediatricians
- Occupational medicine physicians

3.2.5.2. SPECIALIST MEDICAL PRACTITIONERS (ISCO-08 CODE: 2212)

Specialist medical practitioners diagnose, treat and prevent illness, disease, injury, and other physical and mental impairments in humans, using specialised testing, diagnostic, medical, surgical, physical and psychiatric techniques, through application of the principles and procedures of modern medicine. They specialise in certain disease categories, types of patient or methods of treatment and may conduct medical education and research in their chosen areas of specialisation.

Includes:

- Paediatricians
- Obstetricians and gynaecologists
- Psychiatrists
- Group of non-surgical specialists
- Group of surgical specialists
- Medical interns or residents training for a specialty

Excludes:

- General practitioners
- Dental practitioners
- Dental surgeons
- Oral and maxillofacial surgeons

Further information on inclusion and exclusion:
Medical interns and residents training as specialist practitioners (except general practice) are included here.

Although in some countries 'stomatology' may be considered as a medical specialisation, stomatologists should be included in dentists.

3.2.5.2.1. PAEDIATRICIANS

Definition 5: **'Paediatricians'** means medical doctors who deal with the development, care, and diseases of children.

Includes:

- Medical interns or residents specialising in paediatrics

Excludes:

- Paediatric specialties (e.g. child psychiatry, child/paediatric surgery, child/paediatric gynaecology, paediatric cardiology, paediatric oncology, etc.)

3.2.5.2.2. OBSTETRICIANS AND GYNAECOLOGISTS

Definition 6: **'Obstetricians'** means medical doctors who specialise in pregnancy and childbirth. 'Gynaecologists' means medical doctors who specialise in the functions and diseases specific to women and girls, especially those affecting the reproductive system.

Includes:

- Child/paediatric gynaecology
- Reproduction medicine
- Genetics
- Medical interns or residents specialising in obstetrics and gynaecology

3.2.5.2.3. PSYCHIATRISTS

Definition 7: **'Psychiatrists'** means medical doctors who specialise in the prevention, diagnosis and treatment of mental illness.

Includes:

- Psychiatry
- Neuropsychiatry
- Adult and geronto-psychiatry
- Child psychiatry
- Psychiatry - addictive disorders / diseases
- Social psychiatry
- Psychiatric rehabilitation
- Medical interns or residents training in these psychiatric specialties

Excludes:

- Psychologists

3.2.5.2.4. GROUP OF NON-SURGICAL SPECIALISTS

Definition 8: **'Group of non-surgical specialists'** means medical doctors who specialise in the diagnosis and non-surgical treatment of physical disorders and diseases.

Includes:

- Internal medicine
- Cardiology
- Endocrinology
- Gastroenterology
- Pulmonology
- Respiratory medicine
- Oncology
- Gynaecologic oncology
- Immunology
- Rheumatology
- Neurology

- Oto-rhino-laringology
- Radiology
- Infectious diseases
- Microbiology-bacteriology
- Haematology
- Dermatology
- Pathology
- Occupational medicine, Community medicine (including hygiene, epidemiology and assessment medicine)
- Medical interns or residents training in these specialties.
- Paediatric cardiology
- Paediatric oncology
- Neonatology

Excludes:

- Surgery
- Gynaecology and obstetrics
- Paediatrics
- Psychiatry
- General practice

3.2.5.2.5. GROUP OF SURGICAL SPECIALISTS

Definition 9: **'Group of surgical specialists'** means medical doctors who specialise in the use of surgical techniques to treat disorders and diseases.

Includes:

- General surgery
- Neurological surgery
- Plastic surgery
- Orthopaedics
- Ophthalmology
- Urology, nephrology
- Other types of surgery
- Anaesthesiology
- Intensive care
- Accident and emergency medicine
- Medical interns or residents training in these specialties
- Child/paediatric surgery

Excludes:

- Dental surgery
- Oral and maxillofacial surgery

3.2.5.2.6. OTHER SPECIALISTS NOT ELSEWHERE CLASSIFIED

Definition 10: **'Other specialists not elsewhere classified'** means physician specialists not covered by definitions 5 to 9.

The definitions 5 to 9 are available in section SPECIALIST MEDICAL PRACTITIONERS.

Includes:

- Other specialists not elsewhere classified
- Medical interns or residents training in these other specialties

3.2.5.3. MEDICAL DOCTORS NOT FURTHER DEFINED (ISCO-08 CODE: 2210)

Definition 11: **'Medical doctors not further defined'** means medical practitioners who cannot be classified in the other categories (definition 3 to 10).

The definitions 3 to 10 are available in sections GENERALIST MEDICAL PRACTITIONERS and SPECIALIST MEDICAL PRACTITIONERS).

Includes:

- Medical practitioners who cannot be classified in the other categories
- Medical interns or residents who cannot be classified in the other categories

In accordance with ISCO-08 definition, this category should be used only if some doctors cannot be classified under 'Generalist medical practitioners' or 'Specialist medical practitioners.

3.2.6. Practising midwives

Variable 1.3. Mandatory from reference year 2023, total number (headcount)

Definition 12: **'Practising midwives'** means persons who have a recognised qualification in midwifery, have a license to practice and provide services directly to patients. A midwife is a midwifery professional or a midwifery associate professional. Midwifery professionals provide care and advice to women during pregnancy, labour and childbirth and the post-natal period. Midwifery professionals deliver babies working independently or in collaboration with medical doctors, nurses and other healthcare workers and provide advice and assistance to parents in relation to baby care. Midwifery associate professionals deliver or assist doctors or midwifery professionals in the delivery of babies. Midwifery associate professionals provide antenatal and post-natal care and instruct parents in baby care.

Only midwives meeting the requirements of Directive 2005/36/EC on the recognition of professional qualifications shall be included.

Includes:

- Midwifery professionals (ISCO-08 2222) and midwifery associate professionals (ISCO-08 3222) meeting the requirements of Directive 2005/36/EC on the recognition of professional qualifications
- Persons who have completed their studies/education in midwifery and who are licensed to practice and provide services directly to patients
- Salaried and self-employed midwives delivering services irrespectively of the place of service provision
- Foreign midwives licensed to practice and actively practising in the country

Excludes:

- Students who have not yet graduated
- Midwives working in administration, management, research and in other posts excluding direct contact with patients
- Unemployed midwives and retired midwives
- Midwives working abroad

Further information

*To avoid double-counting of persons **practising** both as midwives and as nurses, countries should report by the main occupation, or alternatively make an estimation. Explanations should be added in the national metadata.*

3.2.7. Professionally active midwives

Number (headcount)

Professionally active midwives includes practising and other (non-practising) midwives for whom their education is a prerequisite for the execution of the job.

Includes:

- Midwifery professionals and midwifery associate professionals meeting the requirements of Directive 2005/36/EC on the recognition of professional qualifications
- Midwives providing services directly to patients
- Midwives working in administration, management, research and in other posts excluding direct contact with patients

Excludes:

- Midwives who hold a post / job under which midwifery education is not required
- Unemployed midwives and retired midwives
- Midwives working abroad

3.2.8. Midwives licensed to practice

Number (headcount)

Midwives licensed to practice have acquired the requisite education and qualifications to be registered and/or legally licensed to practice midwifery. They include both practising and other (non-practising) midwives.

Only midwives meeting the requirements of Directive 2005/36/EC on the recognition of professional qualifications shall be included.

Includes:

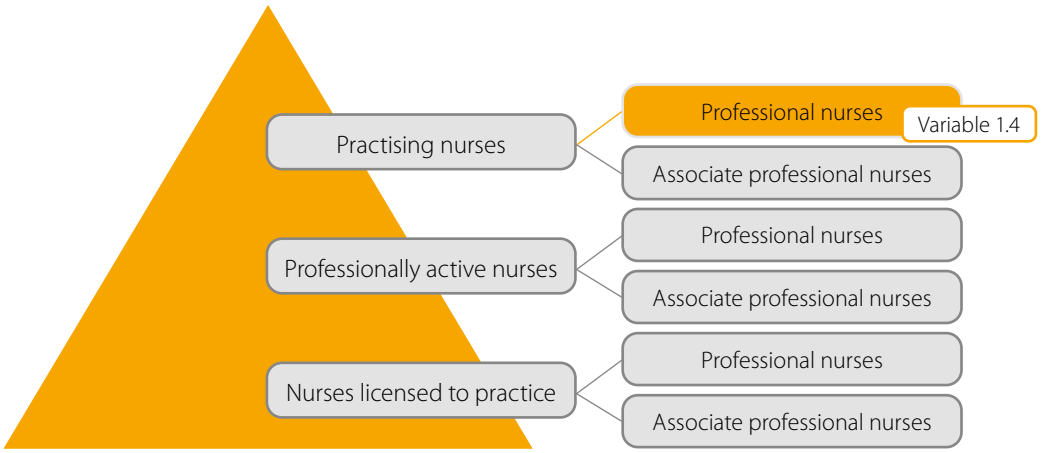
- Midwifery professionals and midwifery associate professionals meeting the requirements of Directive 2005/36/EC on the recognition of professional qualifications
- Midwives who provide services directly to patients
- Midwives for whom their midwifery education is a prerequisite for the execution of the job
- Midwives for whom their midwifery education is NOT a prerequisite for the execution of the job
- Midwives licensed to practice but who due to various reasons are not economically active (e.g. unemployed or retired)
- Midwives working abroad

Further information
*Persons **licensed** both as midwives and as nurses can be reported in both categories.*

3.2.9. Nurses

For the countries reporting to Eurostat, variable 1.4 correspond to professional practising nurses, while all other variables are voluntary (Figure 2). The variables on associate professional nurses are collected for the benefit of OECD and WHO-Europe.

Figure 2: Variables of nurse collected



Notes: Fields in grey indicate non-mandatory variables

3.2.9.1. PRACTISING NURSES

Number (headcount)

Practising nurses provide services directly to patients.

Includes:

- Professional nurses
- Associate professional nurses
- Foreign nurses licensed to practice and actively practising in the country

Excludes:

- Midwifery professionals and midwifery associate professionals
- Students who have not yet graduated
- Nursing aids/assistants and personal care workers who do not any recognised qualification/ certification in nursing
- Nurses working in administration, management, research and in other posts that exclude direct contact with patients
- Unemployed nurses and retired nurses no longer practising
- Nurses working abroad.

Further information
*To avoid double-counting of persons **practising** both as midwives and as nurses, countries should report by the main occupation alternatively make an estimation.*

The variable includes all types of practising nurses with a specialization on top of the general care professional qualification.

3.2.9.2. PROFESSIONALLY ACTIVE NURSES

Number (headcount)

Professionally active nurses includes practising nurses and other nurses for whom their education is a prerequisite for the execution of the job.

Includes:

- Professional nurses
- Associate professional nurses

- Nurses providing services directly to patients
- Nurses working in administration, management, research and in other posts excluding direct contact with patients

Excludes:

- Nurses who hold a post / job under which nursing education is not required
- Unemployed nurses and retired nurses
- Nurses working abroad

3.2.9.3. NURSES LICENSED TO PRACTICE

Number (headcount)

A nurse licensed to practice has completed a programme of nursing education and is qualified and authorised in his/her country to practice nursing. They include practising and other (non-practising) nurses.

Includes:

- Professional nurses
- Associate professional nurses
- Nurses who provide services directly to patients
- Nurses for whom their nursing education is a prerequisite for the execution of the job
- Nurses for whom their nursing education is NOT a prerequisite for the execution of the job
- Nurses licensed to practice but who due to various reasons are not economically active (e.g. unemployed or retired)
- Nurses working abroad

Excludes:

- Healthcare assistants and personal care workers (nursing aids), who do not have any recognised qualification/certification in nursing

Further information
*Persons **licensed** both as midwives and as nurses can be reported in both categories.*

3.2.9.4. PROFESSIONAL NURSES

Definition 13: **'Practising nurses'** means persons who have a recognised qualification in nursing, have a license to practice and provide services directly to patients. A nurse is a nursing professional or a nursing associate professional. Nursing professionals assume responsibility for the planning and management of the care of patients, including the supervision of other healthcare workers, working autonomously or in teams with medical doctors and others in the practical application of preventive and curative measures. Nursing associate professionals generally work under the supervision of, and in support of implementation of healthcare, treatment and referrals plans established by medical, nursing and other health professionals.

Number (headcount)

Variable 1.4. Mandatory variable from reference year 2023, total number (headcount) (only practising professional nurses are mandatory; see figure 2)

The nurses fulfilling the requirements of Directive 2005/36/EC on the recognition of professional qualifications correspond to Variable 1.4 and shall be reported in the columns for 'professional nurses'.

Nursing professionals assume responsibility for the planning and management of the care of patients, including supervision of other health care workers, working autonomously or in teams with medical doctors and others in the practical application of preventive and curative measures.

All nurses reported (i.e. both professional and associate professional nurses) need to fulfil the requirements of Directive 2005/36/EC on the recognition of professional qualifications.

Includes:

- Nurses which have an education in compliance with the EC Directive on professional qualifications (eg minimum 3 years for a general nurse) and specialist nurses with an equivalent education (or longer).
- General care nurse
- Specialist nurse
- Clinical nurse
- District nurse
- Nurse anaesthetist
- Nurse educator
- Nurse practitioner
- Public health nurse
- Specialist nurse

Excludes:

- Healthcare assistants and personal care workers (nursing aids), who do not have any recognised qualification/certification in nursing
- Midwife (unless they work most of the time as nurses)
- Paramedical practitioner
- University lecturer
- Vocational education teacher
- Associate professional nurse (see definition below)
- Midwifery professionals and midwifery associate professionals

Further information
*To avoid double-counting of persons **practising** both as midwives and as nurses, countries should report by the main occupation alternatively make an estimation.*

The variable includes all types of practising nurses with a specialization on top of the general care professional qualification.

3.2.9.5. ASSOCIATE PROFESSIONAL NURSES (ISCO-08 CODE: 3221)

Number (headcount)

Nursing associate professionals generally work under the supervision of, and in support of implementation of health care, treatment and referrals plans established by medical, nursing and other health professionals.

Includes:

- Nursing associate professionals
- Assistant nurse
- Enrolled nurse
- Practical nurse

Excludes:

- Professional nurses fulfilling, as a minimum, the requirements related to 'nurse responsible for general care' in Directive 2005/36/EC on the recognition of professional qualifications
- Professional nurse
- Clinical nurse consultant
- Specialist nurse
- Midwife (unless they work most of the time as nurses)
- Associate professional midwife
- Nursing aide
- Medical assistant (ISCO-08 code: 3256).

Countries, for which this category is not relevant, shall report '0'.

Please note that Eurostat will not disseminate data reported for associate nurse graduates; however, the category remains relevant to OECD and WHO.

Box 1: Professional nurses vs Associate professional nurses

In the reporting questionnaire on Health Employment and Education, EU countries should report in sheet 'Nurses', under the column 'Professional nurses', only nurses who have an education in compliance with the Directive 2005/36/EC on professional qualifications (i.e. a minimum 3 years for a general nurse) and specialist nurses with an equivalent education (or longer). The data reported under the column 'Practising nurses', sub-column 'Professional nurses' shall correspond to Variable 1.4 'Practising nurses' of Regulation (EU) 2022/2294.

The column 'Associate professional nurses' can be used by countries for which this category is relevant, to report data. Countries, for which this category is not relevant, should report '0'.

The data reported under the column 'Total nurses', should be equal to the sum of the two above-mentioned categories (i.e. Total nurses = professional nurses + associate professional nurses).

Country	Nurses														
	Practising nurses						Professionally active nurses						Nurses licensed to practice			
	Total nurses	Code*	Professional nurses	Code*	Associate professional nurses	Code*	Total nurses	Code*	Professional nurses	Code*	Associate professional nurses	Code*	Total nurses	Code*	Professional nurses	Code*	Associate professional nurses	Code*
	Number		Number		Number		Number		Number		Number		Number		Number		Number	
YEARS	(head count)		(head count)		(head count)		(head count)		(head count)		(head count)		(head count)		(head count)		(head count)	
2015	122127	E	122127	E	0		151812	E	151812	E	0		191805		191805		0	
2016	124196		124196		0		143470	B	143470	B	0		198030		198030		0	
2017	127681		127681		0		146094		146094		0		204256		204256		0	
2018	126496		126496		0		148782		148782		0		210507		210507		0	
2019													214352		214352		0	
2020													218665		218665		0	
2021													223645		223645		0	
2022																		

* B: Break in series; D: Deviation from definition; E: Estimate; P: Provisional data; M: Missing value (data cannot exist).

In the sheet 'Hospital Employment', under the column 'Professional nurses and midwives employed in hospitals' countries should report the nurses, and midwives, who meet the requirements of Directive 2005/36/EC on the recognition of professional qualifications. In the column 'Associate professional nurses employed in hospitals', countries, for which this category is relevant, can report data. Countries, for which this category is not relevant, should report '0'.

In the sheet 'Graduates', EU countries shall report in column 'Nurses', sub-column 'Professional', only nurses graduating with an education in compliance with Directive 2005/36/EC (i.e. a minimum 3 years for a general nurse) and specialist nurses with an equivalent education (or longer). The data reported shall correspond to Variable 2.5 'Number of nursing graduates' of Regulation (EU) 2022/2294.

The column 'Associate professional nurses' can be used by countries for which this category is relevant, to report data. Countries, for which this category is not relevant, should report '0'.

In the column 'Total nurses', the sum of the two above-mentioned categories should be reported.

3.2.10. Practising caring personnel (personal care workers)

Number (headcount)

The category 'Caring personnel (personal care workers)' includes:

- Healthcare assistants in institutions (ISCO-08 5321)
- Home-based personal care workers (ISCO-08 5322).

The ISCO-08 definitions are provided to guide the data collection of '**Caring personnel (personal care workers)**', who may also be referred to as "nursing aides" or given other titles in different countries. These caregivers are not nurses, but they do provide personal care to patients in institutions or at home.

Healthcare assistants (ISCO-08 code: 5321) provide direct personal care and assistance with activities of daily living to patients and residents in a variety of healthcare settings such as hospitals, clinics, and residential nursing care facilities (HP.2.1). They generally work in implementation of established care plans and practices, and under the direct supervision of medical, nursing or other health professionals or associate professionals.

Includes:

- Nursing aide (clinic or hospital)
- Patient care assistant
- Psychiatric aide
- Foreign healthcare assistants practising in the country

Excludes:

- Nurse

Home-based personal care workers (ISCO-08 code: 5322) provide routine personal care and assistance with activities of daily living to persons who are in need of such care due to effects of ageing, illness, injury, or other physical or mental condition in private homes and other independent residential settings (institutions are not included).

Includes:

- Home care aide
- Nursing aide (home)
- Personal care provider
- Foreign personal care workers practising in the country

Excludes:

- Nurse
- Social worker

3.2.11. Professionally active caring personnel (personal care workers)

Number (headcount)

Professionally active caring personnel includes practising caring personnel and other caring personnel for whom their education is a prerequisite for the execution of the job.

Includes:

- Caring personnel providing services directly to patients
- Caring personnel working in administration, management, research and in other posts that exclude direct contact with patients

Excludes:

- Unemployed caring personnel and retired caring personnel
- Caring personnel working abroad

3.2.12. Practising dentists (ISCO-08 code: 2261)

Variable 1.5. Mandatory variable from reference year 2023, number (headcount)

Definition 14: **'Practising dentists'** means persons who have a recognised qualification in dentistry, have a license to practice and provide services for patients. Dentists diagnose and treat diseases, injuries and malformations of the teeth gums and related oral structures. They restore normal oral function using a broad range of treatments, such as surgery and other specialist techniques, and advice on oral health. It also refers to interns and resident dentists who have graduated in dentistry from the faculties of medicine and dentistry or similar institutions and who provide services under supervision of other dentists.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the minimum training requirements of dentists.

Includes:

- Practising dentists who have completed studies in dentistry / stomatology at university level (granted by an adequate diploma) and who are licensed to practice
- Interns (with an adequate diploma and providing services under supervision of other dentists or dental specialists during their postgraduate internship in a healthcare facility)
- Salaried and self-employed dentists delivering services irrespectively of the place of service provision
- Foreign dentists licensed to practice and actively practising in the country
- Stomatologists
- Dental surgeons
- Maxillofacial surgeons

Excludes:

- Students who have not yet graduated
- Dentists working in administration, research and in other posts that exclude direct contact with the patients
- Unemployed dentists and retired dentists
- Dentists working abroad.

3.2.13. Professionally active dentists

Number (headcount)

Professionally active dentists are practising dentists and other dentists for whom their education in dentistry / stomatology is a prerequisite for the execution of the job.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the minimum training requirements of dentists.

Includes:

- Dentists who provide services for patients
- Dentists working in administration and management positions requiring education in dentistry
- Dentists conducting research into oral health and dental care
- Dentists who participate in public action to maintain or improve standards of oral health and dental care
- Dentists preparing scientific papers and reports

Excludes:

- Dentists who hold a post/job for which education in dentistry is not required
- Unemployed dentists and retired dentists
- Dentists working abroad

3.2.14. Dentists licensed to practice

Number (headcount)

Dentists licensed to practice includes practising and other (non-practising) dentists, who are registered and entitled to practice as healthcare professionals in the field of dentistry. They include stomatologists, dental and maxillofacial surgeons.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the minimum training requirements of dentists.

Includes:

- Dentists who provide services for patients
- Other dentists for whom their education in dentistry / stomatology is a prerequisite for the execution of the job
- Other dentists for whom their education in dentistry / stomatology is NOT a prerequisite for the execution of the job
- Dentists registered as healthcare professionals and licensed to practice but who are not economically active (e.g. unemployed or retired)
- Dentists working abroad.

3.2.15. Practising pharmacists (ISCO-08 code: 2262)

Variable 1.6. Mandatory variable from reference year 2023, number (headcount)

Definition 15: **'Practising pharmacists'** means persons who have a recognised qualification in pharmacy and have a license to practice. Pharmacists compound and dispense medications following prescriptions issued by physicians, dentists, or other authorized health practitioners. Pharmacists prepare, dispense or sell medicines and drugs for patients and provide advice.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the minimum training requirements of pharmacists.

Includes:

- Practising pharmacists who have completed studies in pharmacy at university level (granted by adequate diploma) and who are licensed to practice
- Salaried and self-employed pharmacists delivering services irrespectively of the place of service provision
- Pharmacists working in hospitals
- Foreign pharmacists licensed to practice pharmacy and actively practising in the country

Excludes:

- Students who have not yet graduated
- Pharmacists working in administration, research and in other posts that exclude direct contact with the patients
- Pharmacists working in the pharmaceutical industry
- Unemployed pharmacists and retired pharmacists
- Pharmacists working abroad

3.2.16. Professionally active pharmacists

Number (headcount)

Professionally active pharmacists are practising pharmacists and other pharmacists for whom their education in pharmacy is a prerequisite for the execution of the job.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the minimum training requirements of pharmacists.

Includes:

- Pharmacists who provide services for patients
- Pharmacists working in administration and management positions requiring a pharmacy education
- Pharmacists conducting research, testing drugs to determine identity, purity and strength
- Pharmacists participating in development of controls and regulations
- Pharmacists preparing scientific papers and reports

Excludes:

- Pharmacists who hold a post/job for which pharmacy education is not required
- Unemployed pharmacists and retired pharmacists
- Pharmacists working abroad.

3.2.17. Pharmacists licensed to practice

Number (headcount)

Pharmacists licensed to practice includes practising and other (non-practising) pharmacists who are registered and entitled to practice.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the minimum training requirements of pharmacists.

Includes:

- Pharmacists who provide services for patients
- Pharmacists for whom their pharmacy education is a prerequisite for the execution of the job
- Pharmacists for whom their pharmacy education is NOT a prerequisite for the execution of the job
- Pharmacists licensed to practice but who are not economically active (e.g. unemployed or retired)
- Pharmacists working abroad

3.2.18. Practising physiotherapists (ISCO-08 code: 2264)

Number (headcount)

Practising physiotherapists assess, plan and implement rehabilitative programs that improve or restore human motor functions, maximize movement ability, relieve pain syndromes, and treat or prevent physical challenges associated with injuries, diseases and other impairments. They apply a broad range of physical therapies and techniques such as movement, ultrasound, heating, laser and other techniques.

Includes:

- Geriatric physical therapist
- Paediatric physical therapist
- Orthopaedic physical therapist
- Physiotherapist

Excludes:

- Podiatrist
- Occupational therapist
- Acupressure therapist
- Hydrotherapist
- Massage therapist
- Physiotherapy technician
- Shiatsu therapist
- Chiropractor
- Osteopath

3.2.19. Total hospital employment

Number (headcount) and number of full-time equivalent (FTE) persons

Total hospital employment covers persons employed in general and specialised hospitals.

Includes:

- Self-employed.
- Service contracts with non-employed health professionals on treatment of hospital patients (headcounts).

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the minimum training conditions of the relevant staff categories.

The main priority is to collect data on the **total** number of people working in hospitals on a **headcount** basis. Data for six categories of hospital workers are requested. In addition to headcounts, data are also collected on a FTE basis.

Three methods to convert headcounts into FTE data are proposed below, and national correspondents may choose one of them to do the conversion, depending on the availability of detailed data on actual/usual or contractual hours of work.

(1) For countries which have detailed data on actual or usual working hours

Full-time equivalent (FTE) employment should be measured by the number of hours actually or usually worked divided by the average number of hours worked in full-time jobs.

For example: if the standard working hours for a full-time job in the country is 40 hours per week, and the actual or usual working hours of a doctor or a nurse in hospital is 30 hours, s(he) should be counted as 0.75 FTE. If s(he) works 50 hours, s(he) should be counted as 1.25 FTE.

(2) For countries which only have detailed data on contractual working hours

A worker with a full-time employment contract should be counted as 1 FTE. Concerning workers who do not have a full-time employment contract, full-time equivalent should be measured by the number of hours of work mentioned in each contract divided by the normal number of hours worked in full-time jobs.

For example: if the standard working hours for a full-time job in the country is 40 hours per week, and if the contract of a nurse is 30 hours per week, s(he) should be counted as 0.75 FTE.

(3) For countries which do not have any detailed information on working hours

A worker with a full-time employment contract should be counted as 1 FTE. Concerning workers with part-time contracts, the practice in many countries is simply to consider that 2 part-time workers = 1 FTE.

Breakdowns:

3.2.19.1. PHYSICIANS EMPLOYED IN HOSPITALS

Number of physicians directly employed by a hospital.

3.2.19.2. PROFESSIONAL NURSES AND MIDWIVES EMPLOYED IN HOSPITALS

Number of professional nurses and midwives directly employed by a hospital. For EU countries, these are nurses and midwives fulfilling the requirements of Directive 2005/36/EC on the recognition of professional qualifications.

3.2.19.3. ASSOCIATE PROFESSIONAL NURSES EMPLOYED IN HOSPITALS

Number of associate professional nurses (see definition of associate professional nurses above) directly employed in a hospital.

Countries, for which this category is not relevant, shall report '0'.

3.2.19.4. HEALTHCARE ASSISTANTS EMPLOYED IN HOSPITALS (ISCO-08 CODE: 5321)

Number of healthcare assistants (ISCO-08 code: 5321) directly employed by a hospital.

3.2.19.5. OTHER HEALTH SERVICE PROVIDERS EMPLOYED IN HOSPITALS

Includes:

- Dentists
- Pharmacists
- Physiotherapists
- Psychologists
- Dieticians
- Audiologists and speech therapists
- Laboratory assistants
- Other health professionals and associate professionals

3.2.19.6. OTHER STAFF EMPLOYED IN HOSPITALS

Other employees not elsewhere classified.

3.2.20. Medical graduates

Variable 2.1. Mandatory variable from reference year 2021, number (headcount)

Definition 16: **'Medical graduates'** means persons who have graduated in medicine from medical faculties or similar institutions in the reporting country, i.e., who have completed basic medical education.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the Basic medical training for doctors of medicine.

Excludes:

- Graduates in pharmacy, dentistry / stomatology, public health and epidemiology
- Individuals who have completed post-graduate studies or training in medicine

3.2.21. Dentist graduates

Variable 2.2. Mandatory variable from reference year 2021, number (headcount)

Definition 17: **'Dentistry graduates'** means persons who have obtained a recognised qualification in dentistry in the reporting country.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the Basic dental training of dentists.

3.2.22. Pharmacist graduates

Variable 2.3. Mandatory variable from reference year 2021, number (headcount)

Definition 18: **'Pharmacy graduates'** means persons who have obtained a recognised qualification in pharmacy in the reporting country.

refer to Directive 2005/36/EC on the recognition of professional qualifications for the training requirements of pharmacists.

3.2.23. Midwives graduates

Variable 2.4. Mandatory variable from reference year 2021, number (headcount)

Definition 19: **'Midwifery graduates'** means persons who have obtained a recognised qualification in midwifery in the reporting country.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the training requirements of midwives.

3.2.24. Nursing graduates

Number of students who have obtained a recognised qualification in nursing in a given year.

Inclusion:

- Graduates from an education programme required to become:
  - a professional nurse, including general care and specialist nurse (see definition for professional nurses)
  - an associate professional nurse (see definition for associate professional nurses)

Exclusion:

- Graduates from other fields of studies which do not provide a recognised foundation for the practice of nursing
- Graduates from a midwifery programme.

Note: If ISCED-2011 code 723 is used for the calculation of this indicator, then graduates from a midwifery programme should be subtracted.

3.2.25. Professional nursing graduates

Variable 2.5. Mandatory variable from reference year 2021, number (headcount)

Definition 20: **'Nursing graduates'** means persons who have obtained a recognised qualification in nursing in the reporting country.

Please refer to Directive 2005/36/EC on the recognition of professional qualifications for the training requirements of nurses.

Excludes:

- Graduates from other fields of studies which do not provide a recognised foundation for the practice of nursing
- Graduates from an associate professional nurse programme.
- Graduates from a midwifery programme.

Note: In the European Union, a Directive has defined the training of nurses responsible for general care as comprising at least three years of study or 4600 hours of theoretical and clinical training, the duration of the theoretical training representing at least one-third and the duration of the clinical training at least one half of the minimum duration of the training. Member States may grant partial exemptions to persons who have received part of their training on courses which are of at least an equivalent level (article 31, Directive 2005/36/EC of the European Parliament and of the Council which has been updated with Directive 2013/55/EC).

3.2.26. Associate professional nursing graduates

Number of students who have obtained a recognised qualification as an associate professional nurse in a given year (see definition for "associate professional nurses").

Exclusion:

- Graduates from a professional nurse programme.

Countries, for which this category is not relevant, shall report '0'.

3.3. Health workforce migration

The main purpose of this part of the Joint Questionnaire is to improve the monitoring of international health workforce migration through the collection of a minimum dataset that is relevant to both source and destination countries.

The main features of the data collection are that it:

- focuses on doctors and nurses only;
- focuses mainly on the **place of training** (defined as the place of first qualification);
- collects immigration data from destination countries by all countries of origin, based on available national sources (e.g., professional registries, specific surveys of health personnel);
- collects data based on measures of **total stock** and **annual inflows**.

Data are requested according to the concept:

'Practising' (i.e. healthcare professionals directly providing services to patients)

If not possible, the data can be reported for professionally active physicians or physicians licensed to practise. To be reported in the metadata.

The number should be at the end of the calendar year.

For professions regulated under Directive 2005/36/EC on the recognition of professional qualifications, all staff reported in the variables below need to meet the requirements of the Directive.

The list of countries/places of training was slightly updated in the 2020 Joint Questionnaire. International Organization for Standardization (ISO) codes are available and may be used for automated data filling.

Countries which have not submitted data yet are strongly encouraged to look at possible data sources that might be used to fill this gap and to provide as much as possible data by countries of origin. The data collection also allows a reporting of the overall number of 'domestic-born but foreign-trained' doctors and nurses (people born in a country who went to study in another country but have come back afterwards to practice in their home country) separately from the 'foreign-born and foreign-trained'. All national correspondents are invited to provide this useful additional information when possible.

3.3.1. Stock of doctors (physicians) by country of first qualification

Number (headcount)

Breakdown:

- Domestically trained doctors
- Foreign-trained doctors
  - of which native-born but foreign-trained;
  - by country of first qualification.
- Unknown place of training
- % of foreign-trained doctors

Foreign-trained doctors means doctors who have obtained their first medical qualification (degree) in another country and are entitled to practice in the receiving country.

Includes:

- Foreign-trained doctors who have obtained any type of registration to practice in the receiving country.
- Medical interns and residents who have obtained a medical degree in another country but have not yet obtained a (full) registration to practice in the receiving country.

Excludes:

- Foreign-trained doctors who are registered to practice in the receiving country but are practising in another country (temporarily or permanently).

3.3.2. Annual inflow of foreign-trained doctors

Number (headcount)

Breakdown by country of first qualification

The number of doctors who have obtained their first medical qualification (degree) in another country and are receiving a new authorisation in a given year to practice in the receiving country.

Includes:

- If the source is professional registers (preferred source): Foreign-trained doctors coming in the country under all types of registration status (full, temporary, limited, provisional or conditional registration).
- If the source is working permits delivered to immigrants (possible alternative source): Foreign-trained doctors coming in the country under a permanent or temporary working permit.
- Medical interns and residents who have obtained a medical degree in another country but have not yet obtained a (full) registration to practice in the receiving country.

3.3.3. Stock of nurses by country of first qualification

Number (headcount)

Breakdown:

- Domestically trained nurses
- Foreign-trained nurses
  - of which native-born but foreign-trained;
  - by country of first qualification.
- Unknown place of training
- % of foreign-trained nurses.

The number of nurses who have obtained a recognised qualification in nursing in another country and are working as a nurse in the receiving country.

Includes:

- Foreign-trained nurses who have obtained any type of registration to practice in the receiving country.
- Nurses who have obtained a recognised qualification in nursing in another country but have not yet obtained a (full) registration to practice in the receiving country.

Excludes:

- Foreign-trained nurses who are registered to practice in the receiving country but are practising in another country (temporarily or permanently).

3.3.4. Annual inflow of foreign-trained nurses by country of first qualification

Number (headcount)

Breakdown by country of first qualification

The number of nurses who have obtained a recognised qualification in nursing in another country and are receiving a new authorisation in a given year to practice in the receiving country.

Includes:

- If the source is professional registers (preferred source): Foreign-trained nurses coming in the country under all types of registration status (full, temporary, limited, provisional or conditional registration).
- If the source is working permits delivered to immigrants (possible alternative source): Foreign-trained nurses coming in the country under a permanent or temporary working permit.

3.4. Physical and technical resources

3.4.1. Total Hospitals

Number (at the end of the reference year)

Breakdown by sector and classification

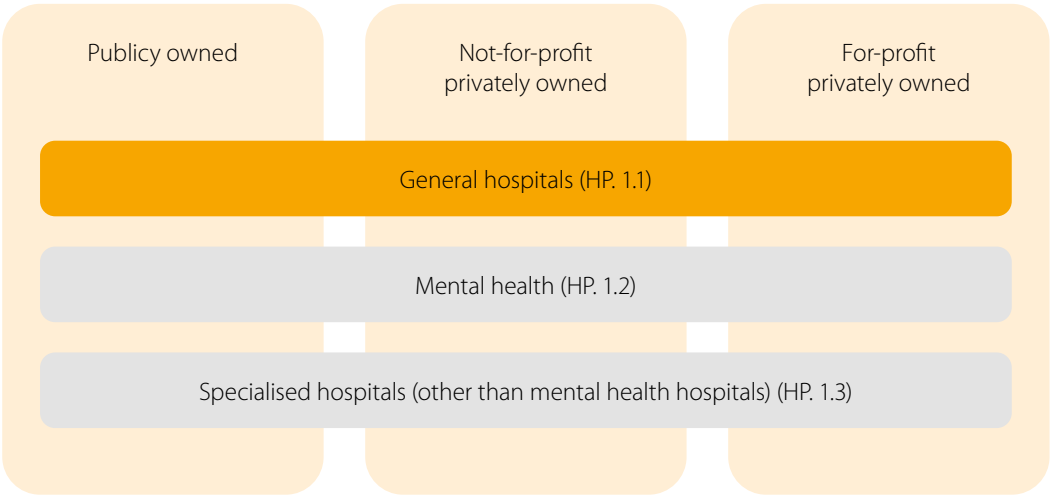
Definition 21: **'Hospitals'** means the licensed establishments that are primarily engaged in providing medical, diagnostic and treatment services that include physician, nursing and other health services to inpatients and the specialised accommodation services required by inpatients and which may also provide day care, outpatient and home healthcare services.

The priority is to collect data on the total number of hospitals.

Includes (Figure 3):

- General hospitals (HP .1.1)
- Mental health hospitals (HP .1.2)
- Specialised hospitals (other than mental health hospitals) (HP .1.3)

Figure 3: Sectors and classifications of hospitals



Notes: Fields in grey indicate variables not collected as such by the JQNMHC.

Breakdown by sector:

3.4.1.1. PUBLICLY OWNED HOSPITALS

Hospitals (HP.1) that are owned or controlled by a government unit or another public corporation (where control is defined as the ability to determine the general corporate policy).

3.4.1.2. NOT-FOR-PROFIT PRIVATELY OWNED HOSPITALS

Hospitals (HP.1) that are legal or social entities created for the purpose of producing goods and services, whose status does not permit them to be a source of income, profit, or other financial gain for the unit(s) that establish, control or finance them.

3.4.1.3. FOR-PROFIT PRIVATELY OWNED HOSPITALS

Hospitals (HP.1) that are legal entities set up for the purpose of producing goods and services and are capable of generating a profit or other financial gain for their owners.

Breakdown by classification (only HP.1.1 is collected):

3.4.1.4. GENERAL HOSPITALS (HP.1.1)

General hospitals (HP.1.1) comprise licensed establishments primarily engaged in providing general diagnostic and medical treatment (both surgical and non-surgical) to inpatients with a wide variety of medical conditions. These establishments may provide other services, such as outpatient services, anatomical pathology services, diagnostic X-ray services, clinical laboratory services or operating room services for a variety of procedures, and/or pharmacy services, that are usually used by internal patients (intermediate outputs within the hospital treatment) but also by outside patients (see A System of Health Accounts, 2011 Edition ([8])).

Includes:

- General acute care hospitals
- Community, county, and regional hospitals (other than specialised hospitals)
- Army, veterans, prison and police hospitals if settled in a separate establishment (other than specialised hospitals, e.g. forensic hospitals)
- Teaching hospitals, university hospitals (other than specialised hospitals)
- General hospitals run by private companies if set up as a separate independent establishment
- General hospitals of private non-profit-organisations (e.g. Red Cross or Red Crescent) (other than specialised hospitals)
- Integrated Community healthcare centers primarily engaged in inpatient service.

Excludes:

- Kidney dialysis centers (HP.3.4.4)

Further information
The definition above is based on SHA 2011, which does not mention exclusion criteria. If the reporting country excludes certain establishments, this should be clarified in the reference metadata.

3.4.2. Hospital beds

Average number during the reference period or total number at the end of the reference period.

Definition 22: **'Hospital beds'** means those beds which are regularly maintained and staffed and immediately available for the care of admitted patients. Both occupied and unoccupied beds are included in this concept. Excluded are recovery trolleys and beds for same day care (day case care and outpatient care), provisional and temporary beds. Hospital beds can be partitioned by category of care (definitions 23 and 24) and by function (definitions 25 - definition 28) of care.

The concept seeks information on the operational capacity of hospital beds, the immediately available beds. The annual average number gives a more stable indication of capacity, as it avoids peaks. If the total number at the end of the reference period is given, it can be any representative day in the last month of the reference period, to be mentioned in the national reference metadata.

([8]) https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-05-19-103

Includes:

- Beds in all hospitals, including general hospitals (HP.1.1), mental health hospitals (HP.1.2), and other specialised hospitals (HP.1.3);
- Occupied and unoccupied beds.

Excludes:

- Surgical tables, recovery trolleys, emergency stretchers, beds for same-day care, cots for healthy infants;
- Beds in wards which were closed for any reason;
- Provisional and temporary beds;
- Beds in residential long-term care facilities (HP.2).

Hospital beds are allocated to **two main care categories**, for which data are collected (Figure 4):

- Somatic care beds (Variable 3.1)
- Psychiatric care beds (Variable 3.2)

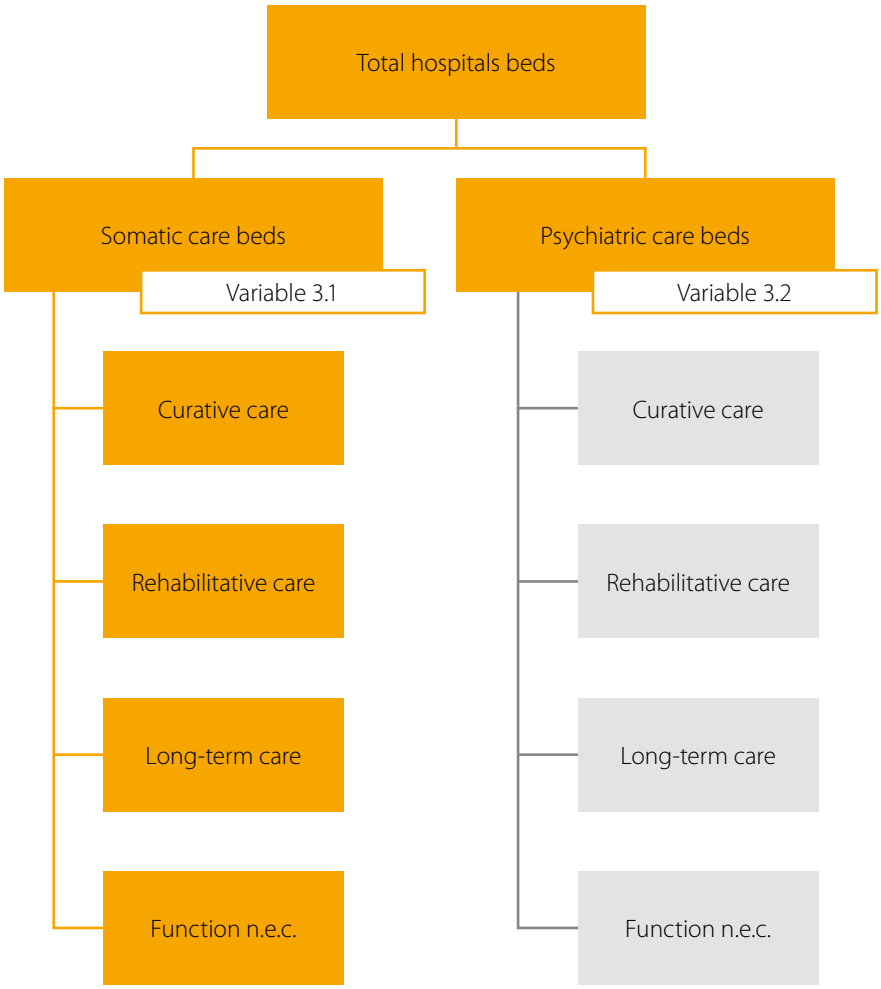
Definition 23: **'Somatic care'** means healthcare relating to the body, as distinguished from psychiatric care.

Definition 24: **'Psychiatric care'** means healthcare concerning the mind, e.g. dealing with mental and behavioural disorders.

Each category has a **breakdown by function**. The breakdown by function is mandatory for somatic care beds. Psychiatric care beds split by function are voluntary variables.

- Curative (acute) care beds;
- Rehabilitative care beds;
- Long-term care beds;
- Other hospital beds.

Figure 4: Breakdown of hospital beds



This is consistent with the System of Health Accounts (SHA) ([9]) classification that is used internationally to collect data on hospital expenditure.

The functions are defined as follows.

Curative (acute) care beds

Definition 25: **'Curative care'** means the healthcare services during which the principal intent is to relieve symptoms or to reduce the severity of an illness or injury, or to protect against its exacerbation or complication that could threaten life or normal function.

Curative care (acute care) beds in hospitals (HP.1) are hospital beds that are available for curative care (HC.1 in the SHA classification).

Includes:

- Beds in all hospitals, including general hospitals (HP.1.1), mental health hospitals (HP.1.2) and other specialised hospitals (HP.1.3)
- Beds accommodating patients where the principal clinical intent is to do one or more of the following: manage labour (obstetrics), cure illness or provide definitive treatment of injury, perform surgery, relieve symptoms of illness or injury (excluding palliative care), reduce severity of illness or

([9]) https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-05-19-103

injury, protect against exacerbation and/or complication of illness and/or injury which could threaten life or normal functions, perform diagnostic or therapeutic procedures
- Beds for somatic curative (acute) care and psychiatric curative (acute) care

Excludes:

- Beds allocated for other functions of care (such as rehabilitation, long-term care and palliative care).

Rehabilitative care beds

Definition 26: **'Rehabilitative care'** means the services to stabilise, improve or restore impaired body functions and structures, compensate for the absence or loss of body functions and structures, improve activities and participation and prevent impairments, medical complications and risks.

Rehabilitative care beds in hospitals (HP.1) are hospital beds that are available for rehabilitative care (HC.2 in the SHA classification).

Includes:

- Beds in all hospitals, including general hospitals (HP.1.1), mental health hospitals (HP.1.2) and other specialised hospitals (HP.1.3)
- Beds accommodating patients for services with the principle intent to stabilise, improve or restore impaired body functions and structures, compensate for the absence or loss of body functions and structures, improve activities and participation and prevent impairments, medical complications and risks
- Beds for somatic rehabilitative care and psychiatric rehabilitative care

Excludes:

- Beds allocated for other functions of care (such as curative care, long-term care and palliative care).

Long-term care beds

Definition 27: **'Long-term care (health)'** means the range of medical and personal care services that are consumed with the primary goal of alleviating pain and suffering and reducing or managing the deterioration in health status in patients with a degree of long-term dependency.

Long-term care beds in hospitals (HP.1) are hospital beds accommodating patients requiring long-term care (HC.3 in the SHA classification).

Includes:

- Beds in long-term care departments of general hospitals (HP.1.1), mental health hospitals (HP.1.2) and other specialised hospitals (HP.1.3)
- Beds for somatic long-term care and psychiatric long-term care
- Beds for palliative care

Excludes:

- Beds allocated for other functions of care (such as curative care and rehabilitation).

Other hospital beds, function not elsewhere classified.

All other beds in hospitals (HP.1) not elsewhere classified.

Includes:

- Beds for other healthcare services not elsewhere classified.

3.4.2.1. NUMBER OF HOSPITAL BEDS FOR SOMATIC CARE

Variable 3.1. Mandatory variable from reference year 2021, average number during the reference period or total number at the end of the reference period.

Definition 28: **'Hospital beds for somatic care with function not elsewhere classified'** means beds in hospitals that are not classified as being for curative care, rehabilitative care or long-term care.

Breakdown by function – mandatory variables:

- 'Curative care hospital beds for somatic care' means beds in hospitals that are available for curative somatic care.
- 'Rehabilitative care beds for somatic care' means beds in hospitals that are available for rehabilitative somatic care.
- 'Long-term care beds for somatic care' means beds in hospitals that accommodate patients requiring somatic long-term care.
- Other hospital beds, function not elsewhere classified.

Includes:

- Beds for somatic/physical care in general hospitals (HP.1.1) and specialised hospitals (other than mental health hospitals) (HP.1.3)

Excludes:

- All beds in mental health hospitals (HP.1.2)
- Beds in psychiatric departments of general hospitals (HP.1.1) and specialised hospitals (other than mental health hospitals) (HP.1.3).

3.4.2.2. NUMBER OF HOSPITAL BEDS FOR PSYCHIATRIC CARE

Variable 3.2. Mandatory variable from reference year 2021, average number during the reference period or total number at the end of the reference period.

Definition 29: **'Hospital beds for psychiatric care'** means beds in hospitals accommodating patients with mental health problems. Beds for social long-term care shall be excluded.

Breakdown by function – non-mandatory variables:

- Curative (acute) care beds for psychiatric care;
- Rehabilitative care beds for psychiatric care;
- Long-term care beds for psychiatric care;
- Other hospital beds for psychiatric care.

Includes:

- All beds in mental health hospitals (HP.1.2)
- Beds in psychiatric departments of general hospitals (HP.1.1) and specialised hospitals (other than mental health hospitals) (HP.1.3).

Excludes:

- Beds for social long-term care.
- Beds for somatic/physical care in general hospitals (HP.1.1) and specialised hospitals (other than mental health hospitals) (HP.1.3)

3.4.3. Total hospital beds; breakdown by sector

Average number of available beds over the year (where possible).

Total hospital beds (see definition 22 above) are the sum of the following categories:

- Beds in publicly owned hospitals;
- Beds in not-for-profit privately owned hospitals;
- Beds in for-profit privately owned hospitals.

Since 2022, the data by sector are collected separately from the data by function of care, in a different worksheet (the two worksheets are respectively "HospitalBedsSector" and "HospitalBedsFunction"). However, data should remain consistent, and the total number of hospital beds should be the same in both tables.

The sectors are defined as follows.

3.4.3.1. BEDS IN PUBLICLY OWNED HOSPITALS

Beds in hospitals that are owned or controlled by a government unit or another public corporation (where control is defined as the ability to determine the general corporate policy).

3.4.3.2. BEDS IN NOT-FOR-PROFIT PRIVATELY OWNED HOSPITALS

Beds in hospitals that are legal or social entities created for the purpose of producing goods and services, whose status does not permit them to be a source of income, profit, or other financial gain for the unit(s) that establish, control or finance them.

3.4.3.3. BEDS IN FOR-PROFIT PRIVATELY OWNED HOSPITALS

Beds in hospitals that are legal entities set up for the purpose of producing goods and services and are capable of generating a profit or other financial gain for their owners.

3.4.4 Beds in residential long-term care facilities (Nursing beds)

Variable 3.3. Mandatory variable from reference year 2021, average number during the reference period or total number at the end of the reference period.

Definition 30: **'Residential long-term care facilities'** means the establishments that are primarily engaged in providing residential long-term care that combines nursing, supervisory or other types of care as required by the residents, where a significant part of the production process and the care provided is a mix of health and social services with the health services being largely at the level of nursing care in combination with personal care services.

Definition 31: **'Beds in residential long-term care facilities'** means beds in residential long-term care facilities that are available to persons requiring long-term care.

Includes:

- Long-term nursing care facilities (HP.2.1)
- Other residential long-term care facilities (HP.2.9)

Excludes:

- Beds in hospitals (HP.1) dedicated to long-term care

- Beds in residential settings such as adapted housing that can be considered as people's home.
- Beds in HP.2.2 establishments.

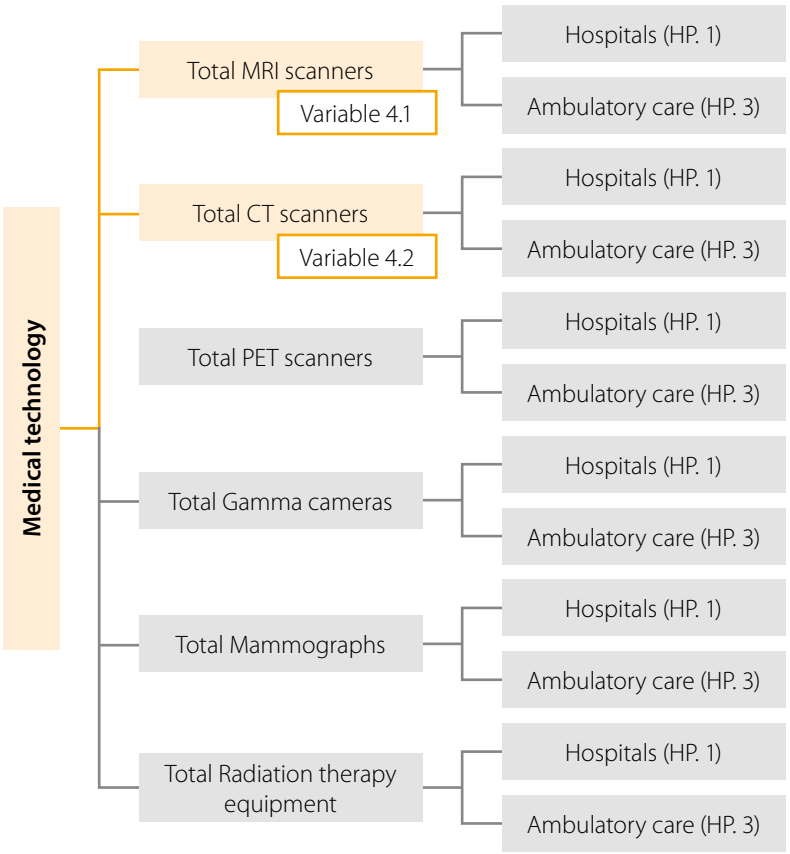
3.4.5. Medical technology

The data collection on medical technology includes six types of diagnostic and therapeutic technologies. Two of those are mandatory variables; Number of MRI units (total number) and Number of CT scanners (total numbers) (Figure 5).

Characteristics and breakdowns:

- Total number at the end of the reference period
- Total number of equipment in all healthcare facilities
- Breakdown by sector; hospitals (HP.1) and providers of ambulatory care (HP.3). If only one of these sectors are available, please add it in the corresponding column in the reporting questionnaire.

Figure 5: Breakdown of Medical Technology



n.b. Fields in grey indicate non-mandatory variables

3.4.5.1. MAGNETIC RESONANCE IMAGING UNITS

Variable 4.1. Mandatory variable from reference year 2021, total number at the end of the reference period.

Definition 32: **'Magnetic resonance imaging (MRI) units'** means machines with an imaging technique designed to visualise internal structures of the body using magnetic and electromagnetic fields which induce a resonance effect of hydrogen atoms. The electromagnetic emission created by these atoms is registered and processed by a dedicated computer to produce the images of the body structures.

3.4.5.2. COMPUTED TOMOGRAPHY SCANNERS

Variable 4.2. Mandatory variable from reference year 2021, total number at the end of the reference period.

Definition 33: **'Computed tomography (CT) scanner'**, also known as Computerized axial tomography (CAT) scanner, means an x-ray machine which combines many x-ray images with the aid of a computer to generate cross-sectional views and, if needed, three-dimensional images of the internal organs and structures of the body.

Excludes:

- Single Photon Emission Computed Tomography (SPECT).

3.4.5.3. POSITRON EMISSION TOMOGRAPHY SCANNERS

Number of Positron Emission Tomography scanner units (PET units)

PET is a highly specialised imaging technique using short-lived radioacute substances. This technique produces three-dimensional images which are used mainly for the assessment of cancer spread in a patient's body.

Includes:

- PET-CT systems using image fusion (superposition of CT and PET images)

3.4.5.4. GAMMA CAMERAS

Number of Gamma cameras

A Gamma camera (including Single Photon Emission Computed Tomography, SPECT) is used for a nuclear medicine procedure in which the camera rotates around the patient to register gamma rays emission from an isotope injected to the patient's body. The gathered data are processed by a computer to form a tomographic (cross-sectional) image.

Includes:

- SPECT-CT systems using image fusion (superposition of SPECT and CT images).

3.4.5.5. MAMMOGRAPHS

Number of dedicated mammography machines (those designed exclusively for taking mammograms). The code is CIM-9 87.37.

3.4.5.6. RADIATION THERAPY EQUIPMENT

Number of machines used for treatment with x-rays or radionuclide.

They include linear accelerators, Cobalt-60 units, Caesium-137 therapy units, low to orthovoltage x-ray units, high dose and low dose rate brachytherapy units and conventional brachytherapy units.

3.5. Health Activities

3.5.1. Ambulatory care

Definition 34: **'Ambulatory care'** means the provision of healthcare services directly to outpatients who do not require inpatient services, including both care provided in offices of general medical practitioners and medical specialists and in establishments specialising in the treatment of day cases and in the delivery of home care services.

3.5.1.1. DOCTOR CONSULTATIONS (IN-PERSON)

Number per capita

Average number of consultations/visits with a physician per person per year.

Includes:

- Consultations/visits both to generalist and specialist medical practitioners
- Consultations/visits at the physician's office
- Consultations/visits in the patient's home
- Consultations/visits in outpatient departments in hospital and ambulatory health care centres

Excludes:

- Teleconsultations
- Telephone and email contacts
- Visits for prescribed laboratory tests
- Visits to perform prescribed and scheduled treatment procedures, e.g. injections, physiotherapy etc.
- Visits to dentists
- Visits to nurses
- Consultations during an inpatient stay or a day care treatment

Note: If the source is administrative data, the rate should be calculated based on the average annual population.

3.5.1.2. DENTIST CONSULTATIONS (IN-PERSON)

Number per capita

Average number of consultations/visits with a dentist per person per year.

Includes:

- Consultations/visits with an orthodontist
- Consultations/visits with a stomatologist/dental/maxillofacial surgeon
- Consultations/visits at the dentist's office
- Consultations/visits in the patient's home
- Consultations/visits in outpatient departments in hospital and ambulatory health care centres.

Excludes:

- Telephone and email contacts
- Visits for prescribed laboratory tests
- Consultations during an inpatient stay or a day care treatment.

Note: If the source is administrative data, the rate should be calculated based on the average annual population.

3.5.1.3. IMMUNISATION AGAINST INFLUENZA

Variable 5.1. Mandatory variable from reference year 2021

Rate of people aged 65 and older who have been immunised against influenza (%)

Definition 35: **'Immunisation against influenza'** means vaccination that protects against infection by influenza viruses.

The rate is calculated as:

Number of people aged 65 and over who have been immunised against influenza during the reference period divided by the average annual population aged 65 and over.

or

Number people aged 65 and over who have been immunised against influenza for the influenza season, defined as July 1 to June 30, which ended in the reference period divided by the population aged 65 and over in the beginning of the reference period.

3.5.1.4. BREAST CANCER SCREENING

The data collection on breast cancer (mammography) screening includes a breakdown between survey data and programme-based data. Countries are invited to transmit both survey data and programme data when these two sources are available.

3.5.1.4.1. Breast cancer screening, survey-based data

Rate of women aged between 50 and 69 screened against breast cancer (%)

The rate is calculated as: Number of women aged 50-69 who have received a bilateral mammography within the past two years (or according to the specific screening frequency recommended in each country) divided by the number of women aged 50-69 answering survey questions on mammography.

3.5.1.4.2. Breast cancer screening, programme-based data

Variable 5.2. Mandatory variable from reference year 2021

Rate of women aged between 50 and 69 screened against breast cancer within a national screening programme (%)

Definition 36: **'Breast cancer screening (mammography) programme'** means an organised screening programme intended for the early detection of breast cancer using bilateral mammography.

The rate is calculated as: number of women aged 50-69 who have been screened against breast cancer within a national screening programme within 24 months before the end of the reference period (or according to the specific screening frequency recommended in each country) divided by the number of women aged 50-69 eligible for an organised screening programme.

If a country does not have such programmes, it will deliver no value with an appropriate flag instead of the rate. A country that has regional programmes that together cover the whole country can combine the data to produce national statistics.

More information
Women with unilateral mastectomy can also be invited to the screening programme and be screened. In this case, the definition could be interpreted as a programme 'offering bilateral mammography', even if unilateral is done.

3.5.1.5. CERVICAL CANCER SCREENING

The data collection on cervical cancer screening includes a breakdown between survey data and programme-based data. Countries are invited to transmit both survey data and programme data when these two sources are available.

3.5.1.5.1. Cervical cancer screening, survey-based data

Rate of women aged 20-69 screened against cervical cancer (%)

The rate is calculated as: Number of women aged 20-69 who have been screened for cervical cancer within the past three years (or according to the specific screening frequency recommended in each country) divided by the number of women aged 20-69 answering the survey question.

3.5.1.5.2. Cervical cancer screening, programme-based data

Variable 5.3. Mandatory variable from reference year 2021

Rate of women aged between 20 and 69 screened against cervical cancer within a national screening programme

Definition 37: **'Cervical cancer screening programme'** means an organised screening programme intended for the early detection of cervical cancer.

The rate is calculated as: number of women aged 20-69 who have been screened for cervical cancer within a national screening programme within 36 months before the end of the reference period (or according to the specific screening frequency recommended in each country) divided by the number of women aged 20-69 eligible for an organised screening programme.

If a country does not have such programmes, it will deliver no value with an appropriate flag instead of the rate. A country that has regional programmes that together cover the whole country can combine the data to produce national statistics.

3.5.1.6. COLORECTAL CANCER SCREENING

The data collection concerns the proportion of target population who have undergone colorectal cancer screening based on the country's colorectal cancer screening policy, which defines among others, the target age range and the screening method and interval.

Breakdowns:

Programme data and survey data are collected for male, female and total of both sexes.

Excludes:

- Persons who underwent follow-up colorectal cancer tests based on the positive result of initial colorectal cancer screening test are excluded from the numerator and denominator for both indicators.

If countries provide multiple screening methods as the initial colorectal cancer screening tests or use different screening intervals for different target age groups, they are asked to take account of differences in screening intervals specified for each method or target age group to calculate the indicators, as much

as possible. For example, if multiple screening methods are available, countries can provide data such as the weighted average of the proportion of regular participants to the stool-based tests for blood over several rounds of screening and the proportion of target population who underwent an endoscopic screening over the same period.

3.5.1.6.1. Colorectal cancer screening rate, survey-based data:

Rate of female/male/total population screened against colorectal cancer (%)

The rate is calculated as follows:

Numerator: the number of survey respondents who had the initial screening test specified in the country's colorectal cancer screening policy during the period specified in the policy.

Denominator: the number of survey respondents who were eligible for the initial screening test specified in the country's colorectal screening policy during the period specified in the policy. Survey respondents who did not answer survey questions on whether s/he has undergone a colorectal cancer screening test should be excluded from the denominator.

3.5.1.6.2. Colorectal cancer screening rate, programme-based data:

Rate of female/male/total population screened against colorectal cancer (%)

The rate is calculated as follows:

Numerator: the number of target population who had the initial screening test specified in the country's colorectal cancer screening programme during the period specified in the screening programme.

Denominator: the number of target population who were eligible for the initial screening test specified in the country's colorectal cancer screening programme during the period specified in the screening programme.

3.5.2. Hospital Care (includes Hospital aggregates)

In the Hospital Care section, aggregated and disaggregated data on total hospital activities are collected, including a specific focus on curative care for some indicators (Table 3). This data collection also serves to collect some aggregate indicators that can be used in analysis of hospital efficiency or utilisation rate (e.g. occupancy rates of hospital beds).

Table 3: Description of variables of Hospital care

Variable	Breakdown	Transmission format	Status
6.1. Number of hospital inpatient discharges	Total number during the reference period. Breakdown by diagnosis, sex, age group and geographical dimension.	Disaggregated data HDD Csv file	Mandatory From reference year 2023
6.2. Number of hospital inpatient bed-days	Total number during the reference period. Breakdown by diagnosis, sex, age group and geographical dimension.	Disaggregated data HDD Csv file	Mandatory From reference year 2023
6.3. Number of hospital day case discharges	Total number during the reference period Breakdown by diagnosis, sex, age group and geographical dimension.	Disaggregated data HDD Csv file	Mandatory From reference year 2023
Inpatient care	Discharges and Average Length of Stay (ALOS)	Aggregate Health Care Activities Excel reporting questionnaire	Voluntary
Inpatient Curative acute care	Discharges, bed-days, ALOS and occupancy rate	Aggregate Health Care Activities Excel reporting questionnaire	See Figure 7

Definition 38: **'Inpatient'** means a patient who receives treatment and/or care in a healthcare facility, who is formally admitted and who requires an overnight stay. **'Inpatient care'** means the care of an inpatient.

Definition 40: **'Day case'** means a patient who receives planned medical and paramedical services delivered in a healthcare facility and who is formally admitted for diagnosis, treatment or other types of healthcare and is discharged on the same day. **'Day care'** is the care of a day case.

Hospital discharges should cover all hospitals (HP.1). They should include deaths in hospital and transfers to another hospital, but exclude transfers to other care units within a same hospital.

Countries using hospital treatment episodes as individual record units (i.e. when patients are transferred among departments in the same hospital, each transfer is recorded as a new admission/discharge) should make an effort to merge related episodes into one discharge record in order to make the data internationally comparable.

In accordance with the International Classification of Diseases (ICD), it is recommended that the main diagnosis be defined as the condition diagnosed at the end of the hospitalisation period, primarily responsible for the patient's need for treatment or examination at the hospital. If there is more than one such condition, the one held responsible for the greatest use of resources should be selected. If no diagnosis was made, the main symptom, abnormal finding or problem should be selected as the main diagnosis.

Countries submitting data according to the International Shortlist for Hospital Morbidity Tabulation (ISHMT) ([10]) should exclude the "external causes of morbidity and mortality" (V, W, X and Y codes, chapter 20 in ICD-10), in order to avoid any double-counting of injuries which are already recorded in "injury, poisoning and certain other consequences of external causes" (S and T codes, chapter 19 in ICD-10). Discharges with unknown diagnosis should be allocated to ISHMT code 1803 (or ICD-10 code R69).

In 2022, a new group (2200) was added to the ISHMT list based on ICD-10 codes U00-U49 ("Provisional assignment of new diseases of uncertain etiology or emergency use"), especially to take into account Covid-19 cases. The "All causes" (ISHMT code 0000) data should include these Covid-19 cases, when they have been coded as principal diagnosis of the hospital discharge.

From reference year 2023, inpatient discharges and day case discharge shall include the geographical dimension 'NUTS2 region of the residence of the discharged patient (for non-residents: country of residence)' ([11]).

Definition 44: **'Resident'** means a usual resident of a geographical area, that is either (i) a person who has lived in his/her place of usual residence for a continuous period of at least 12 months before the reference date; or (ii) a person who arrived in his/her place of usual residence during the 12 months before the reference date with the intention of staying there for at least 1 year. Where the circumstances described in point (i) or (ii) cannot be established, 'usual residence' shall mean the place of legal or registered residence.

Definition 45: **'Non-resident'** means a person who is not a resident of the reporting country.

([10]) Link to the complete shortlist with ICD-10 and ICD-9 codes: https://stats.oecd.org/HEALTH_QUESTIONNAIRE/ISHMT/JQNMHC_ISHMT.pdf

([11]) For information on nomenclature of territorial units for statistics (NUTS) classifications, please consult https://ec.europa.eu/eurostat/web/nuts/background

Box 2: Recommended content of metadata related to the sources and methods of hospital discharges data (HDD)

1) List the type, name, location and owner or operator of the national hospital patient registers or discharge database(s) (NHDDB), which were used to produce the HDD file.

2) Does the NHDDB cover all inpatient institutions in the country, which are classifiable as HP.1 providers according to the "System of Health Accounts"? List types of hospitals, which are covered and not covered, e.g. private hospitals, military or prison hospitals, etc., and, if possible, estimate their total capacity as compared to those that are covered by the NHDDB.

3) Does the NHDDB include all inpatient discharges and day cases in covered hospitals? List cases, which may not be included in the NHDDB (e.g. uninsured patients, non-residents, military staff, etc). If possible, estimate the proportion of missing discharge records.

4) If the discharge records were based on treatment episodes (consultant episodes, department discharges), have such multi-episode cases been combined into one discharge record? If possible, estimate the proportion of multi-episode inpatient cases.

5) If the HDD file includes day cases, how were they defined? Was there a special index flagging planned day cases in the NHDDB or were they identified by the same admission and discharge dates?

6) Describe any other known or suspected peculiarities in the coverage of the data.

7) Explain principles involved in defining the main diagnosis (condition) in the hospital discharge record.

8) Describe any known or suspected peculiarities related to the national diagnostic and recording practices and to how the main condition is selected.

3.5.2.1. HOSPITAL INPATIENT DISCHARGES AND HOSPITAL INPATIENT BED-DAYS

Variable 6.1. Total number of hospital inpatient discharges during the reference period

Variable 6.2. Total number of hospital inpatient bed-days during the reference period.

Mandatory from reference year 2023.

Characteristics and breakdowns:

- Diagnosis by International Classification of Diseases (ICD-9 or ICD-10) or International Shortlist for Hospital Morbidity Tabulation (ISHMT) code. Mental and behavioural disorders do not need to be broken down by diagnosis and can be delivered as a group.
- Sex: male/female.
- Age group: less than 1, 1-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85-89, 90-94, 95 and older.
- Geographical dimension: NUTS2 region. From reference year 2023: NUTS2 region of the residence of the discharged patient (for non-residents: country of residence).

Definition 41: **'Hospital inpatient discharge'** means the discharge (formal release) of an inpatient from a hospital. Healthy newborns shall be excluded.

Definition 42: **'Hospital inpatient bed-days'** means the days that an inpatient spends in a hospital. Healthy newborns shall be excluded.

Includes:

- Discharges and bed-days from all hospitals, including general hospitals (HP.1.1), mental health hospitals (HP.1.2), and other specialised hospitals (HP.1.3)
- Emergency cases and urgent admissions when they resulted in an overnight stay and formal admission
- Patients admitted as day-care patients but who have been retained overnight due to complication
- Deaths in hospital
- Transfers to another hospital

The number of bed-days should be counted as the date of discharge minus the date of admission (for example, a patient admitted on the 25th and discharged on the 26th should be counted as 1 day).

Same day separations of inpatient cases (e.g. inpatients who die or are transferred to another hospital on the day of their admission) should be included in the number of discharges. The corresponding number of bed-days should be set to 1 day.

Cases which are formally admitted but not staying one night (zero-night cases), should count as inpatients of 1 day.

Excludes:

- Transfers to other care units within the same hospital
- Discharges of healthy newborns in the ISHMT-group 'Liveborn infants according to place of birth' (ICD-10 code Z38, ICD-9 codes V30-V39).
- Day cases
- Outpatient cases (including emergency department visits)

Definition 39: **'Outpatient'** means a patient who receives medical and ancillary services in a healthcare facility and who is not formally admitted and does not stay overnight. 'Outpatient care' means the care of an outpatient.

More information
Eurostat is aware that countries are identifying/defining 'Day cases' differently. Please be specific in the metadata on what is reported as inpatients and as day cases, respectively, to facilitate the validation.

3.5.2.2. HOSPITAL DAY CASE DISCHARGES

Variable 6.3. Total number during reference period.

Mandatory variable from reference year 2023.

Definition 43: **'Hospital day case discharge'** means the discharge of a day case. It is the release of a patient who was formally admitted in a hospital for receiving planned medical and paramedical services, and who was discharged on the same day. Healthy newborns shall be excluded.

Characteristics and breakdowns:

- Diagnosis by International Classification of Diseases (ICD-9 or ICD-10) or International Shortlist for Hospital Morbidity Tabulation (ISHMT) code. Mental and behavioural disorders do not need to be broken down by diagnosis and can be delivered as a group.
- Sex: male/female.
- Age group: less than 1, 1-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85-89, 90-94, 95 and older.
- Geographical dimension: NUTS2 region. From reference year 2023: NUTS2 region of the residence of the discharged patient (for non-residents: country of residence).

Includes:

- Non-admitted patients who were subsequently admitted for day-care

Please note that Definition 40 defines 'Day case' as a patient who receives **planned care**. If the planned care cases cannot be identified in your data, explain in the reference metadata how you have identified day cases.

Excludes:

- Healthy newborns
- Inpatient cases
- Outpatient cases (including emergency department visits)
- Patients admitted as day-care patients but who have been retained overnight due to complication
- Patients who die or are transferred to another hospital on the day of their admission.

More information
Eurostat is aware that countries are identifying/defining 'Day cases' differently. Please be specific in the metadata on what is reported as inpatients and as day cases, respectively, to facilitate the validation.

3.5.2.3. AGGREGATED DATA ON INPATIENT DISCHARGES AND AVERAGE LENGTH OF STAY

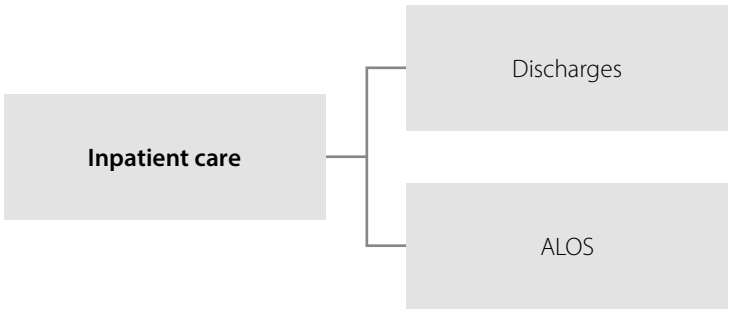
Total number during reference period.

The aggregated numbers of inpatient discharges and the average length of stay (Figure 6) are collected in the excel reporting questionnaire on Health Care Activities. The definitions, inclusion and exclusion criteria concerning Inpatients, Inpatient discharges and Inpatient bed-days above apply.

Average length of stay (ALOS) is calculated by dividing the number of bed-days by the number of discharges during the year. Only the overall average length of stay in all hospitals is requested (no breakdown by diagnostic categories).

National correspondents are invited to review the consistency between the inpatient aggregated data and the disaggregated data on hospital discharges. If there are discrepancies between the data sets, more information should be provided in the national reference metadata (e.g. differences in data sources, in settings/services coverage, etc.).

Figure 6: Inpatient care breakdowns



Notes: Fields in grey indicate non-mandatory variables

3.5.2.4. INPATIENT CURATIVE (ACUTE CARE) AGGREGATES

Total number during reference period

Mandatory variables from reference year 2023:

Variable 6.4: Number of hospital inpatient discharges for patients who have received somatic curative care.

Variable 6.5: Number of hospital inpatient bed-days for patients who have received somatic curative care.

The data on Inpatient curative care are collected in aggregated form in the excel reporting questionnaire Health Care Activities

Definition 25: **'Curative care'** means the healthcare services during which the principal intent is to relieve symptoms or to reduce the severity of an illness or injury, or to protect against its exacerbation or complication that could threaten life or normal function.

Includes:

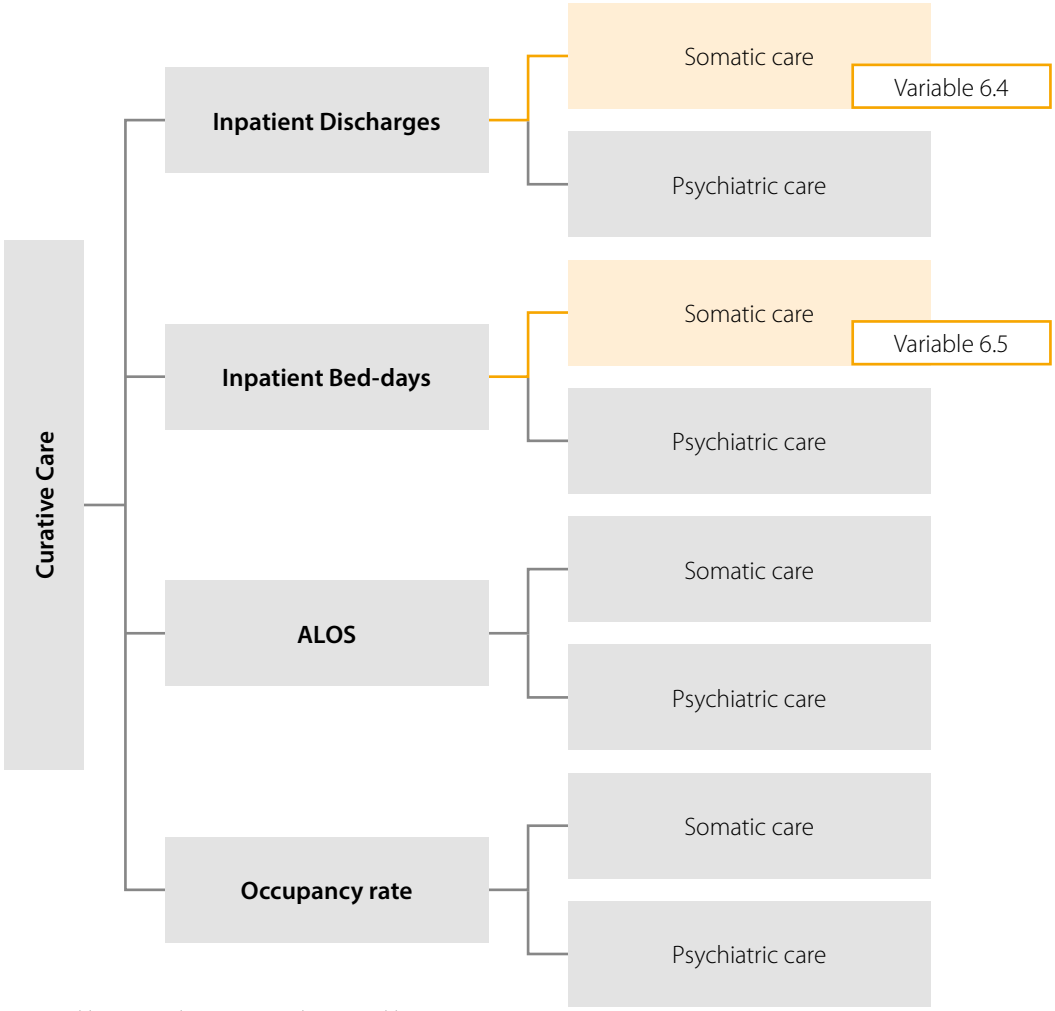
- All components of curative care of illness (including both physical and mental/psychiatric illnesses) or treatment of injury
- Diagnostic, therapeutic and surgical procedures
- Obstetric services

Excludes:

- Other functions of care (such as rehabilitative care, long-term care and palliative care)

Inpatient curative care is furthermore split by somatic and psychiatric care (Definitions 23 and 24 below) (Figure 7).

Figure 7: Inpatient curative care breakdowns



Notes: Fields in grey indicate non-mandatory variables

The following activity indicators are collected in aggregated form:

- Inpatient curative acute care discharges (number): see definition 41 on inpatient discharges and definition 25 on curative care
  - Total, somatic care, psychiatric care
- Inpatient curative acute care bed-days (number): see definition 42 on inpatient discharges and definition 25 on curative care
  - Total, somatic care, psychiatric care
- Inpatient curative acute care ALOS (days): number of curative care bed-days divided by the number of curative care discharges (to be calculated directly in the excel spreadsheet).
  - Total, somatic care, psychiatric care
- Inpatient curative acute care occupancy rate (%): calculated as the number of beds effectively occupied (bed-days) for curative care (HC.1.1) divided by the number of beds available for curative care multiplied by 365 days, with the ratio multiplied by 100.
  Occupancy rate= (total number of bed-days during the year) / (number of beds available*365)*100
  - Total, somatic care, psychiatric care

Definition 23: **'Somatic care'** means healthcare relating to the body, as distinguished from psychiatric care.

Includes:

- General hospitals (HP.1.1) and other specialised hospitals (HP.1.3)

Excludes:

- Mental health hospitals (HP.1.2)
- Psychiatric departments of general hospitals (HP.1.1) and specialised hospitals (other than mental health hospitals) (HP.1.3)
- Cases with main diagnosis included in ICD-10 category V Mental and Behavioural Disorders (ICD-10 codes F00-F99) (these cases should be included in Psychiatric curative care)

Definition 24: **'Psychiatric care'** means healthcare concerning the mind, e.g. dealing with mental and behavioural disorders.

Includes:

- Mental health hospitals (HP.1.2)
- Psychiatric departments of general hospitals (HP.1.1) and specialised hospitals (other than mental health hospitals) (HP.1.3)
- Cases with main diagnosis included in ICD-10 category V Mental and Behavioural Disorders (ICD-10 codes F00-F99)

3.5.3. Procedures

3.5.3.1. DIAGNOSTIC EXAMS

Number

An exam is a medical imaging session to study one (or more) body part(s) that yields one or more views for diagnostic purposes.

Data are collected for three variables: the number of Computed Tomography (CT) exams, Magnetic Resonance Imaging (MRI) exams and Positron Emission Tomography (PET) exams. The aim is to collect data on all diagnostic exams, including those carried out in hospitals and outside of hospitals.

Breakdown:

- Exams carried out in hospitals (HP.1)
- Exams carried out by providers of ambulatory health care (HP.3)

Excludes:

- Exams in medical and diagnostic laboratories (HP.4.2)

3.5.3.2. SURGICAL PROCEDURES

Number

Definition 46: **'Surgical procedures'** means medical interventions involving an incision with instruments usually performed in an operating theatre and normally involving anaesthesia and/or respiratory assistance. Surgical procedures can be performed either as inpatient cases, day cases or, in certain instances, as outpatient cases.

The current common shortlist of surgical procedures contains 16 surgical procedures plus 4 subgroups ([12]). The mapping with ICD-9-CM codes is available for information in Annex C.

Breakdown for each procedure:

- Total number of procedures
  - Inpatient cases; see definition 38 on 'Inpatient'
  - Day cases: see definition 40 on 'Day case'
  - For cataract surgery and tonsillectomy, the number of **outpatient cases in hospital and outside hospital** is also requested, in order to provide more complete coverage of same-day surgery.
    'Outpatient' is defined in definition 39.

Includes:

- Procedures performed in outpatient departments in hospitals
- Procedures performed in emergency departments
- Procedures performed outside hospitals (ambulatory sector)

Excludes:

- Day cases
- Inpatient cases

Data senders must avoid double-counting of procedures for which more than one code may be used in certain national classification systems.

The method to count procedures should be based on a count of the number of patients who have received a given procedure or on a count of only one code per procedure category for each patient.

Example 1:
A percutaneous coronary intervention with a coronary stenting is recorded as two separate codes, but it should be reported as only one code/procedure.

([12]) The common shortlist of surgical procedures is provided in Table 1 of the document available at the link: http://stats.oecd.org/HEALTH_QUESTIONNAIRE/Surgical%20procedures/JQNMHC_MAPPING%20IC D-9-CM.pdf

Example 2:
A cataract surgery is performed on the two eyes, but only 1 patient/procedure should be counted.

Example 3:
A patient gets the same procedure at two different times in a given year. They are counted each time, i.e. as 2 patient/procedures.

3.5.3.3. CATARACT SURGERY

Variable 7.1. Mandatory variable from reference year 2023.

Definition 47:**'Cataract surgery'** means a surgical procedure to remove the lens of an eye and, in most cases, to replace it with an artificial lens.

Breakdown: Total number, inpatient cases, day cases, outpatient cases.

3.5.3.4. TONSILLECTOMY

Variable 7.2. Mandatory variable from reference year 2023.

Definition 48: **'Tonsillectomy'** means a surgical removal of the tonsils.

Includes total and partial tonsillectomy with or without adenoidectomy.

Breakdown: Total number, inpatient cases, day cases, outpatient cases.

3.5.3.5. TRANSLUMINAL CORONARY ANGIOPLASTY

Variable 7.3. Mandatory variable from reference year 2023.

Definition 49: **'Transluminal coronary angioplasty'** means a procedure that opens blocked coronary arteries to improve blood flow to the heart muscle.

Breakdown: Total number, inpatient cases, day cases.

3.5.3.6. CORONARY ARTERY BYPASS GRAFT

Variable 7.4. Mandatory variable from reference year 2023.

Definition 50: **'Coronary artery bypass graft'** means a surgical operation where atheromatous blockages in a patient's coronary arteries are bypassed with harvested venous or arterial conduits.

Breakdown: Total number, inpatient cases, day cases.

3.5.3.7. STEM CELL TRANSPLANTATION

Breakdown: Total number, inpatient cases, day cases.

3.5.3.8. APPENDECTOMY

Breakdown:

- Total number, inpatient cases, day cases.
  - *Of which*: Laparoscopic appendectomy;
    - Total number, inpatient cases, day cases.

3.5.3.9. CHOLECYSTECTOMY

Variable 7.5. Mandatory variable from reference year 2023.

Definition 51: **'Cholecystectomy'** means a surgical procedure to remove the gallbladder.

Includes laparoscopic and open surgery cholecystectomy.

Breakdown: Total number, inpatient cases, day cases.

Voluntary breakdown:

- *Of which*: Laparoscopic Cholecystectomy;
  - Total number, inpatient cases, day cases.

3.5.3.10. REPAIR OF INGUINAL HERNIA

Variable 7.6. Mandatory variable from reference year 2023.

Definition 52: **'Repair of inguinal hernia'** means a surgical correction of an inguinal hernia. An inguinal hernia is an opening, weakness, or bulge in the lining tissue of the abdominal wall in the groin area between the abdomen and the thigh.

Breakdown: Total number, inpatient cases, day cases.

Voluntary breakdown:

- *Of which*: Laparoscopic repair of inguinal hernia;

Total number, inpatient cases, day cases.

3.5.3.11. TRANSURETHRAL PROSTATECTOMY

Breakdown: Total number, inpatient cases, day cases.

3.5.3.12. OPEN PROSTATECTOMY

Open prostatectomy includes open laparoscopic prostatectomy.

Breakdown: Total number, inpatient cases, day cases.

3.5.3.13. HYSTERECTOMY

Breakdown:

- Total number, inpatient cases, day cases.

- *Of which:* Laparoscopic hysterectomy
  - Total number, inpatient cases, day cases.

3.5.3.14. CAESAREAN SECTION

Variable 7.7. Mandatory variable from reference year 2023.

Definition 53: **'Caesarean section'** means a surgical procedure to deliver a baby through incisions in the abdomen and uterus.

Breakdown: Total number, inpatient cases, day cases.

3.5.3.15. HIP REPLACEMENT

Variable 7.8. Mandatory variable from reference year 2023.

Definition 54: **'Hip replacement'** means a surgical procedure to remove damaged sections of a hip joint and to replace them with a prosthesis.

Breakdown: Total number, inpatient cases, day cases.

3.5.3.16. TOTAL KNEE REPLACEMENT

Variable 7.9. Mandatory variable from reference year 2023.

Definition 55: **'Total knee replacement'** means a surgical procedure whereby the diseased knee joint is replaced with a prosthesis.

Breakdown: Total number, inpatient cases, day cases.

3.5.3.17. PARTIAL EXCISION OF MAMMARY GLAND

Variable 7.10. Mandatory variable from reference year 2023.

Definition 56: **'Partial excision of mammary gland'** means surgical removal of some of the breast tissue due to an area of disease such as a mass/lesion, cyst, tumour, or benign or malignant neoplasm.

Breakdown: Total number, inpatient cases, day cases.

3.5.3.18. TOTAL MASTECTOMY

Variable 7.11. Mandatory variable from reference year 2023.

Definition 57: **'A total mastectomy'** means a surgical removal of an entire breast.

Includes radical mastectomy and mastectomy with preservation of skin and nipple (subcutaneous mastectomy), unilateral or bilateral subcutaneous mammectomy with/without synchronous implant.

Breakdown: Total number, inpatient cases, day cases.

3.6. Eurostat additional data collections

3.6.1. Practising physicians at regional level

Total number at the end of the reference period

See definitions of 'practising physicians'.

The practising physicians should be allocated to the place (region) where the healthcare service is provided. The Nomenclature of Units for Territorial Statistics (NUTS) shall be used for referencing the subdivisions of countries for statistical purposes. The latest classification is the NUTS2021, which is valid from 1 January 2021. The NUTS level 2 is required for this data collection (see http://ec.europa.eu/eurostat/web/regions-and-cities/overview).

Breakdown:

- Total
- By NUTS2 region.

3.6.2. Hospital beds at regional level

Average number during the reference period or total number at the end of the reference period.

See definition of hospital beds.

The data collection on hospital beds aims to collect data for all functions of care, in all types of hospitals as listed in the International Classification of Health Accounts 2011 (including HP.1.1 General hospitals, HP.1.2 Mental health hospitals, HP.1.3 Other specialised hospitals). National correspondents are invited to note in the reference metadata any limitation in hospital coverage.

The hospital beds should be allocated to the place (region) where the health care service is provided. NUTS2 classification is available on:

http://ec.europa.eu/eurostat/web/regions-and-cities/overview

Breakdown:

- Total
- By NUTS2 region.

3.6.3. Hospital technical resources

Average number during the reference period or total number at the end of the reference period.

The data collection of hospital technical resources includes six types of resources available in hospitals. The data should cover both public and private hospitals. Any limitation in the data coverage should be clearly explained in the reference metadata.

3.6.3.1. OPERATION THEATRES IN HOSPITAL

Number of operation theatres available in hospital.

3.6.3.2. DAY CARE PLACES ALTOGETHER

Number of all day care places (beds/seats) altogether available in hospital.

3.6.3.3. SURGICAL DAY CARE PLACES

Number of all surgical day care places (beds/seats) available in hospital.

3.6.3.4. ONCOLOGICAL DAY CARE PLACES

Number of all oncological day care places (beds/seats) available in hospital.

3.6.3.5. PSYCHIATRIC DAY CARE PLACES

Number of all psychiatric day care places (beds/seats) available in hospital.

3.6.3.6. GERIATRIC DAY CARE PLACES

Number of all Geriatric day care places (beds/seats) available in hospital.

3.7. Pilot data collections

3.7.1. Intensive care unit (ICU) beds and occupancy

This section concerns the pilot data collection on intensive care resources and use, which was introduced in the 2021 Joint Questionnaire on Physical and Technical Resources.

The statistics collected are based on definitions proposed by the World Federation of Societies of Intensive and Critical Care Medicine.

Although the inclusion was driven by the Covid-19 crisis, this data collection is not restricted to Covid-19 beds and patients; it should cover all ICUs (for any patients needing intensive care).

An intensive care unit (ICU) is an organized system for the provision of care to critically ill patients that provides intensive and specialized medical and nursing care, an enhanced capacity for monitoring, and multiple modalities of physiologic organ support to sustain life during a period of acute organ system insufficiency. Although an ICU is based in a defined geographic area of a hospital, its activities often extend beyond the walls of the physical space to include the emergency department, hospital ward, and follow-up clinic. ([13])

What sets intensive care apart from other clinical care in hospitals is the reference to the critical condition of patients requiring a higher level of care in terms of staffing ratios, equipment, and severity of case. The World Federation of Societies of Intensive and Critical Care Medicine proposes a classification of ICUs in three levels (primary, secondary and tertiary) based on a number of criteria, such as the staffing to patient ratio, or type of respiratory support equipment. Detailed information for defining ICUs are available in Table 4.

([13]) Marshall et al. (2017), What is an intensive care unit? A report of the task force of the World Federation of Societies of Intensive and Critical Care Medicine, Journal of Critical Care.

Table 4: Classification of Intensive Care Units, Level 1-3.

	Level 1	Level 2	Level 3
Therapeutic capacity	Physiologic stabilization and short-term support of mild organ dysfunction	Basic support of failing organ function	Complex, comprehensive support and management of organ dysfunction
Personnel	Physicians with some experience in critical care available at least during the day	Physicians with ICU training or comparable experience present during day and available at night	Physicians with formal ICU training on call 24/7; immediate in-hospital availability of medical staff with ICU experience
	Experienced nurses provide 24/7 care	Nurses have extra training or comparable experience in critical care and provide 24/7 care	Nursing staff with specialist ICU training provide 24/7 care
	Other personnel available	Variable inclusion of allied health personnel—respiratory therapists, physiotherapists, dieticians, pharmacists, etc.—as part of ICU care team	Allied health personnel—respiratory therapists, physiotherapists, pharmacists, dieticians, etc.—as regular members of ICU team
	Nurse-patient ratio higher than on ward; preferably 1:4 or 1:3 (1 nurse for 4 patients)	Nurse-patient ratio appropriate to patient needs but usually no less than 1:3	Nurse-patient ratio appropriate to patient needs and no less than 1:2
	Daily rounds; ad hoc structure	Formal daily ICU rounds with physicians and nurses	Formal multidisciplinary ICU rounds daily and as needed based on patient complexity and acuity
	Variable engagement in critical care continuing professional education	Engagement in continuing professional education	Regular engagement in continuing medical/nursing education
	Variable access to other medical specialties in hospital	Ready access to respirologists, nephrologists, cardiologists, infectious disease specialists, general surgeons	Rapid access to and variable engagement of full complement of medical and surgical consultant specialists
Monitoring capacity	Non-invasive or minimally invasive monitoring—transcutaneous oxygen saturation, cardiac monitoring, urine output	Invasive monitoring of blood pressure and central venous pressures as dictated by patient status	Advanced hemodynamic monitoring (cardiac catheterization, ultrasonography, etc.); advanced monitoring of pulmonary, cerebral, and other physiology as directed by clinical needs
		Blood gas analyser immediately available	Blood gas analyser and stat lab associated with ICU
Unit design and organ support	Dedicated geographic area	Dedicated geographic area with central monitoring station	Dedicated geographic area with individual patient care areas and central monitoring station
	Capacity for oxygen therapy and non-invasive respiratory support	Basic mechanical ventilatory support, pharmacologic support of cardiovascular function, intermittent renal replacement therapy, parenteral nutrition	Advanced ventilator and hemodynamic support, continuous renal replacement therapy, capacity for tracheostomy and other basic surgical procedures
			Capacity for isolation of patients needing contact or airborne precautions
Integration within the hospital	Defined geographic area only	Ad hoc interactions with other acute care areas such as emergency department	Outreach team(s), integration with step-down or high-dependency unit; close collaboration with emergency department
Research and education	Ad hoc activity	Organized educational activities for staff	Formal educational programs for staff
	Basic quality improvement program	Formal quality improvement program	Formal quality improvement program
		Ad hoc engagement in clinical research	Active involvement in clinical research
			Training of residents and fellows as available
Responsiveness to regional and societal needs	Ad hoc only, but available and responsive in event of disaster	Serves as resource for critically ill patients within hospital	Referral resource for community and district hospitals and for other ICUs
	Formal policy outlining criteria for patient transfer to higher level ICU		Disaster preparedness plan and capacity

Source: Marshall et al. (2017), What is an intensive care unit? A report of the task force of the World Federation of Societies of Intensive and Critical Care Medicine, Journal of Critical Care.

3.7.1.1. INTENSIVE CARE UNIT BEDS

Average number of available beds over the year (or number on an annual fixed date).

For adult ICU and critical care adult beds, **the maximum number** is also sought**.**

Breakdown and characteristics:

- Total ICU beds (covering all adult, neonatal and paediatric ICU beds);
  - Total adult ICU beds (providing intensive care of Levels 1 to 3);
    - Of which: critical care adult beds (Levels 2 and 3).
  - Total neonatal ICU beds;
  - Total paediatric ICU beds.

3.7.1.2. INTENSIVE CARE UNIT USE

These variables focus on adults but if the breakdown between adults and children is not available, total (adult + neonatal + paediatric) bed-days/occupancy would be accepted (with a "D" flag and a note in the metadata).

3.7.1.2.1. Total adult ICU bed-days

Number of days during which adult ICU beds were effectively occupied by inpatients.

3.7.1.2.2. Total adult ICU occupancy rate

Average occupancy rate and maximum daily occupancy rate (%)

The average occupancy rate is calculated as the number of ICU beds actually occupied (bed-days) for intensive care divided by the number of ICU beds available (at any one time) multiplied by 365 days. The ratio is multiplied by 100.

3.7.1.2.3. Number of days with ICU occupancy rate over 80% and over 95% during the year

Number.

3.7.2. Teleconsultations

This section concerns the pilot data collection on number of teleconsultations with a doctor and total number of consultations with a doctor (including teleconsultations), which was introduced in the 2021 Joint Questionnaire on Health Activities.

In the context of the Covid-19 crisis, the use of telemedicine increased significantly. The current definition for doctor consultations explicitly excludes telephone and email contacts, and by inference also any web-based contacts. The data collection on Teleconsultations aims to fill this data gap.

The broad concept of telemedicine is the use of Information and Communication Technologies (ICTs) to deliver health care at a distance.

Key elements of telemedicine are: the use of ICTs, the delivery of clinical services, and the delivery at a distance.

Three categories of telemedicine can be considered:

- **Telemonitoring** is the use of mobile devices and platforms to conduct routine medical tests, communicate the results to healthcare workers in real-time, and potentially launch pre-programmed automated responses.
- **Store and forward** is similar but is used for clinical data that are less time-sensitive and for which a delay between transmission and response is acceptable (e.g. store and forward is widely used in dermatology).
- **Interactive telemedicine** involves direct and synchronous communication between providers and patients (e.g. direct-to-patient or in healthcare facilities).

Teleconsultations refers to this third category of interactive telemedicine. However, a teleconsultation may also include aspects of the first two categories. This can involve public or private providers, and is regardless of the specific technology used (e.g. PC, tablet, fixed or mobile phone, etc.).

3.7.2.1. TOTAL DOCTOR CONSULTATIONS (INCLUDING TELECONSULTATIONS)

Number per capita

Average number of consultations/visits with a physician per person per year.

Includes:

- Consultations/visits both to generalist and specialist medical practitioners
- Consultations/visits at the physician's office
- Consultations/visits in the patient's home
- Consultations/visits in outpatient departments in hospital and ambulatory health care centres
- Teleconsultations (see definition below)

Excludes:

- Visits for prescribed laboratory tests
- Visits to perform prescribed and scheduled treatment procedures, e.g. injections, physiotherapy etc.
- Visits to dentists
- Visits to nurses
- Consultations during an inpatient stay or a day care treatment

Note: If the source is administrative data, the rate should be calculated based on the average annual population.

3.7.2.2. DOCTOR TELECONSULTATIONS

Number per capita

Teleconsultations with doctors refer to interactive telemedicine that involves direct and synchronous communication between providers and patients. However, a teleconsultation may also include aspects of telemonitoring (use of mobile devices and platforms, e.g. to conduct routine medical tests, etc.) or store and forward (as telemonitoring, but used for clinical data that are less time-sensitive and for which a delay between transmission and response is acceptable). Teleconsultations can involve public or private providers, and are regardless of the specific technology used (e.g. PC, tablet, fixed or mobile phone, etc.).

Includes:

- Teleconsultations with generalist and specialist medical practitioners
- Teleconsultations "direct-to-patient" or in dedicated facilities/GP practices where patients can access teleconsultations

Excludes:

- Interventions that facilitate medical education of health care workers (e.g. physicians, nurses, etc.) at a distance via ICTs (e.g. tele-education or e-learning).
- Mobile applications that do not involve any transfer of data or any patient-to-provider communication, such as self-care and wellness mobile applications.
- Any intervention that does not involve clinical services, such as public health awareness campaigns.
- Provider-to-provider communications (sometimes called eConsults) that do not involve the patient
- Teleconsultations with other health care workers (e.g. nurses, dentists, etc.).

4 Data structure

4.1. Introduction

Reporting countries have to follow a certain structure for each dataset. The data structure is compliant with the Statistical Data and Metadata eXchange (SDMX). Information in a specific dataset is structured with **dimensions** - identifying and describing the data (e.g. country or frequency) - **attributes** - providing additional information about the data, such as whether they are estimates, and **measures** - representing the phenomenon to be measured (the observation value). A Data Structure Definition (DSD) identifies the dimensions, attributes and measures in a data set, and associates them with common code lists and concepts.

This allows Eurostat and other international organisations to manage and automate the process of data exchange.

4.2. Data structure definition

The data structures can be found on the repository under https://webgate.ec.europa.eu/sdmxregistry/ and have the following artefact IDs:

ESTAT+DSD_HCNE_HLTH_EMPL+X.Y
ESTAT+DSD_HCNE_WKMG+X.Y
ESTAT+DSD_HCNE_HLTH_ACT+X.Y
ESTAT+DSD_HCNE_PHYS_RES+X.Y
ESTAT+DSD_HCNE_ADD_MOD+X.Y

4.3. Data requests

The collection of healthcare non-expenditure statistics (Annex B) covers several types of data requests:

(1) Variables which are compulsory for reporting countries as they are statistics falling under Regulation (EU) 2022/2294;
(2) Variables transmitted on a voluntary basis; data requested by the three organisations for the commonly agreed variables of the JQNMHC;
(3) The 'Eurostat module'; additional data requested by Eurostat, to be completed by reporting countries on a voluntary basis.

Aggregated data are reported in reporting questionnaires, divided into four main themes, in four separate excel workbooks:

(1) Health employment and education
(2) Health workforce migration
(3) Physical and technical resources
(4) Healthcare activities.

The aggregated data of the 'Eurostat module' is in a fifth excel workbook:

(5) Eurostat module

Disaggregated hospital discharges data are sent in separate files. This includes national and regional data.

4.4. Data types

For the data transmission, data will be transmitted as either:

- positive integer
- positive real number.

No other signs are allowed in the variable cells.

Flags can be attributed to an observation value, see further Chapter 5.

4.5. The two data file formats

4.5.1. Excel reporting questionnaires

All Excel workbooks contain worksheets with the following titles and functions:

- **'Country'** – the first worksheet is designed to collect information on the country respondent/ national focal point and allows the respondent to provide any general or specific comment on the data collection. The country name is then automatically indicated on each data sheet in cell A1.
- **'VariablesList'** – the second worksheet serves as a table of contents, summarising the data requested in the workbook. This sheet contains a checklist that countries can use to follow their progress in updating the questionnaire. It may also provide useful information for the three organisations about the availability of some variables not completed in the initial submission.
- **'Definitions'** – the third worksheet provides definitions for the JQ, but please note that reporting countries must use the definitions laid down in Regulation (EU) 2022/2294. This manual also provides all the information necessary for countries reporting to Eurostat.

After these common sheets, the workbooks contain one data worksheet per main topic.

The Excel worksheets have been protected so that only cells of the time series can be filled/updated. This protection has been set to prevent any accidental changes in the format of the files. Changing the structure of tables, by adding or deleting rows or columns for example, is not allowed. Hidden rows exist and are used for structural validation. If really necessary, the protection can be removed easily as no password has been assigned (open the file, select the worksheet to unprotect, click the 'Review' tab on the ribbon, and click on 'Unprotect Sheet').

The variables collected in the JQNMHC are mapped to the variables of the Regulation (EU) 2022/2294 in Annex A of this manual.

4.5.2. Hospital discharges data (HDD)

Reporting countries are required to submit separate files with data on hospital discharges.

The hospital discharges data (HDD) file should contain the number of annual inpatient discharges, bed-days and day case discharges by main diagnosis or external cause of hospitalisation, by age and sex and by NUTS2 region.

The HDD file should be a **text file (.CSV)** according to the record lay-out below (Table 5). The separator to use is the **comma ',',** preferably **without header**.

Each record in this data file should contain data on one diagnosis for one sex by defined age groups. Please use the 23 age groups (option 1 in Table 6 HDD Variable 3) and in this case the total number of variables per record is 75. This age grouping option will be mandatory from reference year 2023.

Table 5: Record layout for hospital discharge data, valid for reference year 2021

Variable no. and name	Variable description	Type	Maximum size
1. Country	In the national file : The two-character NUTS0 of reporting country (latest version) https://ec.europa.eu/eurostat/web/nuts/background In the regional file: The NUTS2 regions of reporting country (latest version) https://ec.europa.eu/eurostat/web/nuts/background	Character	4
2. Year	Year of discharge	Integer	4
3. Age grouping	Code of age grouping	Integer	1 ([14])
4. Sex	Code of Sex	Integer	1
5. ICD version	Code of ICD version used to code diagnosis	Character	3
6. Diagnosis	Code of diagnosis or external cause (ICD-10 code corresponding to above code of ICD version)	Character	5
7+3n. Discharges	Number of inpatient discharges (excluding day cases) with above diagnosis, by the defined age groups	Integer	10
8+3n. Bed-days	Number of bed-days used for above diagnosis, by the defined age groups	Integer	10
9+3n. Day cases	Number of day case discharges with above diagnosis, by the defined age groups	Integer	10

7+3n. Discharges: The total number of inpatient discharges (excluding day cases) with the above diagnosis for a given gender and age group. The total figure for all ages is included in position 7, age below 1 year in position 10, age group 1-4 years in position 13, etc. See Table 6 HDD Variable 3 for **n** value corresponding to each age group.

8+3n. Bed-days: The total number of bed-days used by inpatients (excluding day cases) with the above diagnosis for given gender and age group. The total figure for all ages is included in position 8, age below 1 year in position 11, age group 1-4 years in position 14, etc.

9+3n. Day cases: The total number of day case discharges with the above diagnosis for a given gender and age group. The total figure for all ages is included in position 9, age below 1 year in position 12, age group 1-4 years in position 15, etc.

In case of **missing data** in any of the three categories listed above, the field must be empty. Only when there are zero cases the field must be filled with '0'. For example, if bed-days data are not available then the column must be empty.

([14]) Option 1 will be mandatory from reference year 2023.

Box 3: Examples of three records in the HDD file for country CC

Country, year, age group, sex, ICD version, diagnosis, **all ages: discharges, bed-days, day cases**; **<1year: discharges, beddays, daycases**, etc

CC, 2004, 1, 1, 103, TOT, **332583, 3475024, 7453**, **16877, 113395, 372**, 18958, 111404, 667, 15427, 95337, 709, 16512, 125509, 543, 15127, 108670, 543, 12357, 110752, 451, 11156, 115751, 446, 13005, 147047, 461, 14676, 162940, 416, 18698, 220397, 447, 20094, 241176, 419, 22010, 265966, 395, 23844, 278469, 345, 25534, 304968, 325, 26276, 313408, 343, 25924, 305147, 286, 20188, 241388, 158, 10384, 133496, 77, 3128, 42016, 24, 1290, 20403, 9, 641, 10376, 1, 477, 7009, 16

CC, 2004, 1, 2, 103, TOT, **444550, 4369903, 13560**, **13560, 88882, 284**, 14748, 87913, 447, 13115, 85400, 579, 15235, 124855, 441, 21119, 144205, 755, 27092, 157676, 1198, 28703, 174108, 1242, 23620, 159912, 1280, 19761, 153625, 1235, 21137, 189059, 1279, 24186, 228055, 1169, 26751, 262826, 953, 25711, 262413, 660, 26482, 280801, 568, 32019, 357613, 512, 37678, 466531, 416, 36987, 506571, 300, 24029, 386811, 159, 8322, 161754, 53, 3511, 75761, 20, 634, 13496, 4, 150, 1636, 6

CC, 2004, 1, 1, 103, A02, 682, 4316, 3, 42, 276, 0, 168, 1043, 3, 88, 552, 0, 36, 221, 0, 29, 151, 0, 51, 284, 0, 37, 245, 0, 27, 144, 0, 26, 175, 0, 29, 169, 0, 32, 188, 0, 26, 166, 0, 24, 157, 0, 28, 205, 0, 11, 96, 0, 8, 59, 0, 15, 144, 0, 4, 27, 0, 1, 14, 0, 0, 0, 0, 0, 0, 0, 0, 0

Please respect the following:

For dimension 'sex', only use the code list provided in the Manual. There is no total for 'sex'.

Use capital letters.

No spaces allowed.

No geographical codes with XX – the 'unknown' code is with 99.

Data not available: leave cell empty, do not use 0 or NA or '.'

Only real zero is 0.

(1) For countries using ICD-10 in the HDD

(a) Total is coded 'TOT' when "healthy newborn babies" are included
(b) Total is coded 'TOE' when "healthy newborn babies" are excluded

(2) For countries using ISHMT in the HDD

(a) Total is coded 0000 when "healthy newborn babies" are included
(b) Total is coded 000E when "healthy newborn babies" are excluded
(c) HMT codes are 4 digit: it might be that you need to add 0 as the first digit to make them 4 digit codes.

The files having only the national data will be automatically forwarded by EDAMIS to the OECD, however the files with the regional breakdown will not be forwarded. The data on hospital discharges broken down by regions NUTS level 2, sex, 5-years age group and diagnostic category could potentially allow direct or indirect identification of the inpatient who is discharged. For this reason, Eurostat will treat the discharges regional dataset as "confidential". In data dissemination, statistical confidentiality will be applied to ensure the data does not allow direct or indirect identification of the inpatient.

4.5.3. Variable definitions for hospital discharges data

This section contains the variable definitions for the HDD record. For the sake of harmonization, it is recommended to use ICD10 3-character for the diagnosis category and the 23 age groups list (option one) for the age category.

Variable 1: Country

NUTS codes (latest version) https://ec.europa.eu/eurostat/web/nuts/background

Variable 2: Year of discharge

Variable 3: Age group

The preferred option is to have the data tabulated by 23 age groups (22 groups plus total population, option 1 in Table 6). This will allow age-standardisation of hospitalisation rates and a detailed age-specific analysis of the data. This age grouping option **will be mandatory from reference year 2023**.

However, some countries may not yet be able to provide data in such details, due to technical reasons or others. In this case, two other options are provided, i.e. using three age groups or all ages only.

Table 6: Options for HDD Variable 3; age groupings

Age group No (n=)	Option 1 (Age=1)	Option 2 (Age=2)	Option 3 (Age=3)	Option 4 (Age=4)
0	All ages	All ages	All ages	All ages
1	< 1 year	0-14 years		< 1 year
2	1-4	15-64		1-4
3	5-9	65+		5-9
4	10-14			10-14
5	15-19			15-19
6	20-24			20-24
7	25-29			25-29
8	30-34			30-34
9	35-39			35-39
10	40-44			40-44
11	45-49			45-49
12	50-54			50-54
13	55-59			55-59
14	60-64			60-64
15	65-69			65-69
16	70-74			70-74
17	75-79			75-79
18	80-84			80-84
19	85-89			85+
20	90-94			Age unknown
21	95+			
22	Age unknown			

Variable 4: Sex

Normally, all hospital discharge records should have valid codes for sex. In cases where sex has not been recorded, the additional record with the sex code = 0 may be generated to ensure that all discharges are included in the total after adding figures for male, female and unknown gender.

Table 7: Code table for sex

Sex	Code
Male	1
Female	2
Unknown/not recorded	0

Variable 5: International Classification of Diseases (ICD) version

Indicates which version of the International Classification of Diseases is used to code the diagnosis (see Table 8). It is highly preferable that the original **3-character ICD-10 codes** be used whenever possible, as this will allow for much more flexibility in subsequent data analyses. When the original ICD codes are aggregated into a short list, analysis of the data by detailed individual ICD codes (diagnoses) becomes impossible. Aggregation of the ICD codes into shorter tabulation lists can be done by international agencies depending on needs and data dissemination practices.

Table 8: Code table for ICD version used to code main diagnosis

(a)	Classification system
094	ICD-9 4-character list
103	ICD-10 3-character list (**most preferable)**
104	ICD-10 4-character list
HMT	International Shortlist for Hospital Morbidity Tabulation (ISHMT) https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_CLS_DLD_NOHDR&StrNom=ISHMT_2005&StrLanguageCode=EN

Variable 6: Diagnosis

Code of diagnosis or external cause (ICD-10 code corresponding to above code of ICD version)

- Where ICD-10 is used, three-character codes are sufficient.
- In the case of ICD-9, four-character codes are necessary. Do not use a dot to separate the fourth character in the code. For external causes (Supplementary Classification of External Causes), use prefix E. For example, a motor vehicle traffic accident involving collision with a pedestrian who has been injured should be coded as E8147.
- The four-character codes of the International Shortlist for Hospital Morbidity Tabulation (ISHMT) can also be used.

The HDD file should include an additional record for each gender containing the total of all discharges with the diagnosis code '**TOT**' when "healthy newborn babies" are included; otherwise the code must be '**TOE**'.

Hospitalisations due to external causes will contribute twice: once with the code of the injury (Chapter 17 of ICD-9 or Chapter 19 of ICD-10), and once with the code corresponding to external causes (Supplementary Classification of External Causes with prefix "E" of ICD-9 or Chapter 20 of ICD-10). Care should be taken not to count such cases twice in the summary record with code "TOT" (or "TOE"). If external causes are not recorded, corresponding records will not appear in the HDD file.

5 Data transmission

5.1. Reporting deadlines

See Table 1.

5.2. Filling in the Excel Worksheets

As a courtesy to reporting countries, all reporting questionnaires are pre-filled with the data provided to the three organisations in previous years. Reporting countries are required to **check the data and update them**. Countries are legally responsible for the data they transmit to Eurostat via EDAMIS4.

Please fill/update only the cells of the time series, i.e. send back the Excel worksheets in exactly the same structure in which you receive them.

All correspondents are asked to mark updates of data in **BOLD** or **COLOUR** in the Excel worksheets. This extra step is extremely useful for reviewing and processing country submissions more efficiently and communicating changes in the data.

Please do not write any comments into the Excel data sheets. All comments should be supplied separately in the metadata reports (see Chapter 7). Although we are grateful for any additional supporting documentation, the data update will rely exclusively on the electronic files of the questionnaire received from countries.

5.3. Completeness

The time series in the year of data collection should cover at least up to the reference year in question.

Example:

In the year 2023, data should be transmitted covering at least until the reference year 2021.

In the year 2024, data should be transmitted covering at least until the reference year 2022.

It is expected that data for all mandatory variables are transmitted on time, unless a derogation is in force.

If long time series are not readily available, reporting countries are invited to report the most recent data since 2000. If, in addition, data could be supplied in five-year intervals (1980, 1985, 1990, 1995), this would enable the construction of internationally comparative tables at fixed years, spanning a wider time range.

5.4. Flags

Flags should be used to indicate important information related to the data included in the questionnaire. The Excel reporting questionnaires include an additional column following each data column called '***Code***' which should be used to indicate any of the data issues described below, using the correct flag in capital letter:

Table 9: Allowed flags

B	Break in time series (further details in metadata)
D	Definition differs (further details in metadata)
E	Estimated data. Cannot be combined with the P- flag.
M	Data missing – data can not exist
P	Provisional (only to be used for reference year and reference year +1)

The B-flag should be used when a change in the source or in the methodology has involved a significant break in the series.

The D-flag should be used to indicate that the country is not adhering to the common definition of the variable concerned.

The M-flag should be used for variables that **do not exist** in the country. For example, countries without screening programme should use the M-flag (in combination with empty value) to indicate that data on rate of screening of the population do not exist. The M-flag cannot be combined with other flag and can only be used with an empty cell.

The P-flag is intended for a period of maximum one year and only for the reference year which the collection concerns and the year after. It should be used only for provisional data that are expected to be revised and replaced by final data in the near future (i.e. during the current data collection or in the next round). The P-flag can not be combined with the E-flag.

The four flags B, D, E and P can be combined in any order **up to 3 flags without any separator**, eg BD, DEB, BDE etc. The flags must be combined with a cell which contains a value.

5.4.1. Break in time series

Breaks in time series occur with changes in sources or methodologies. While these changes in sources or methodologies may improve the quality of the data, they seriously limit the possibility to do any trend analysis. When adopting any new source or methodology, national correspondents are encouraged to revise the data for previous years to maintain a reasonably long time series.

Some methods that can be used to overcome the breaks in time series are provided below, but correspondents are welcome to use any other appropriate methods depending on the information available in their country. The adjusted data can be highlighted with an E-flag associated with the data (as described in *Flags* above).

If it is not possible to adjust the time series, any significant breaks should be highlighted with a B-flag associated with the data (with explanation for the breaks provided in the reference metadata).

Box 4: How to overcome breaks in time series

A first method is to estimate a conversion coefficient for the year when the break occurred by using the average growth rate for the preceding years. This method to revise the series before the break involves the following steps:

a) Calculate the average of the annual growth rates for x years before the break in time series.

b) Use this average growth rate to estimate a new theoretical figure for the year when the break occurred (consistent with the old series).

c) Calculate a conversion coefficient between the actual figure and the estimate for the year when the break occurred (i.e. divide the actual figure by the estimate).

d) Use this conversion coefficient to estimate backwards all data before the break (i.e. multiply the original data by the conversion coefficient).

Table 10: Example to overcome a break in series between 2001 and 2002

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Original time series	11670	11880	12000	12100	12460	12830	13200	14600	14960	15820	16750
Annual growth rates	2.0	1.8	1.0	0.8	3.0	3.0	2.9	10.6			
Average of growth rates over 1995-2001								***2.1***			
Estimate for 2002								*13473*			
Conversion coefficient								***1.084***			
Revised time series	*12646e*	*12874e*	*13004e*	*13112e*	*13502e*	*13903e*	*14304e*	14600	14960	15820	16750
Annual growth rates	2.0	1.8	1.0	0.8	3.0	3.0	2.9	2.1			

[Note: A slightly different option would be to calculate the average of the annual growth rates before the break and after the break (for one or more years), and then to follow the steps b to d described above.]

A second approach involves the compilation of the series using both the old and new methods for a certain period of time around the implementation of the new method, from which a concordance coefficient can be calculated. This concordance coefficient can then be used to revise the part of the series before the break.

5.4.2. Transmission method (EDAMIS4)

Reporting countries must submit datasets though the Electronic Data Files Administration and Management Information System (EDAMIS). EDAMIS is the single entry point for the transmission of all regular datasets to Eurostat and it is compulsory since 01.07.2008. It is a user-friendly, online portal that ensures an encrypted and secure channel for the transmission of data.

The application EDAMIS4 can be reached at the following link (requires EU Login):
https://webgate.ec.europa.eu/edamis4/

User guides and video tutorials on how to send data with EDAMIS4 are available here:
https://ec.europa.eu/eurostat/cros/content/edamis_en

In case of questions, you can contact your national transmission coordinator. The list of national transmission coordinators is available at the following link:
https://ec.europa.eu/eurostat/cros/content/national-transmission-coordinators_en

You can also contact the EDAMIS support at:
ESTAT-SUPPORT-EDAMIS@ec.europa.eu

5.5. Datasets and file naming conventions

The EDAMIS4 datasets in the Table 11 must be used for transmission of the corresponding data file. It will for example not be possible to transmit the excel workbook with data on Health Employment and Education in the dataset made for Workforce Migration; the excel file will be rejected by EDAMIS4.

Files transmitted via EDAMIS4 should follow a naming convention (Table 11):

- **CCC** represents the three-character country code (ISO 3166).
- **Year** must be the **reference year** of the data collection.

Table 11: File naming convention for the data collection 2023, reference year 2021

Dataset name	Examples
JQNMHC_HEMPLOY_A Health Employment and Education	CCC_HealthEmployment_2021.xls
JQNMHC_WRKMIGX_A Workforce Migration	CCC_WorkforceMigration_2021.xls
JQNMHC_PHYSRES_A Physical and Technical resources	CCC_PhysicalResources_2021.xls
JQNMHC_HCACTIV_A Health Care Activities	CCC_HealthActivities_2021.xls
JQNMHC_ESTAMOD_A Eurostat module	CCC_EurostatModule_2021.xls
JQNMHC_HDDNAT_A Hospital discharges national data	HDDNAT_CC_2021.csv
JQNMHC_HDDREG_A Hospital discharges regional data	HDDREG_CC_2021.csv

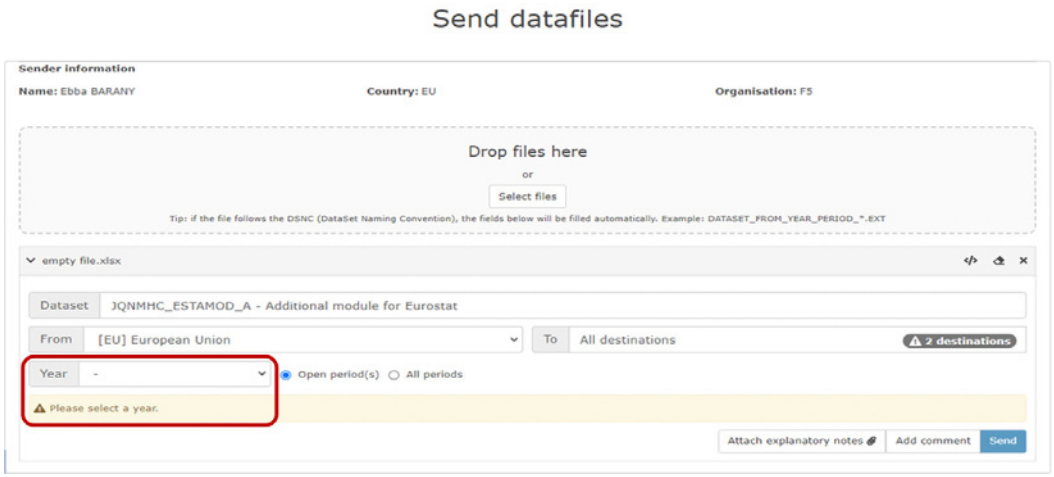
The pilot data collection is integrated in the files listed below:

- CCC_PhysicalResources_Year.xls: containing one pilot data sheet: PILOT_IntensiveCare
- CCC_HealthActivities_Year.xls: containing one pilot data sheet: PILOT_Teleconsultations

Important information; Selection of reference year

When transmitting a file via EDAMIS4 it is necessary to select the correct **reference year** of the data collection (Figure 8). For example, in calendar year 2023, the reference year collected is 2021.

Figure 8: View of EDAMIS4 transmission window



After the transmission, EDAMIS4 sends automated notifications acknowledging the data transfer and informing the user when a feedback report is available. The feedback report must be consulted in EDAMIS4 and contains the initial validation result. In case of warnings or errors in the feedback report, the reporting country must take action. This is described in the next chapter.

6 Data validations

6.1. Introduction

Validation is a key task performed in all statistical domains. Efficient data validation is essential for high quality statistics. Data validation is carried out by reporting countries before transmitting data to Eurostat, and by Eurostat upon receipt of data from countries. These checks can be both automatic and manual.

6.2. Validation procedure in reporting countries

Reporting countries do their own internal validation procedures before transmitting the data to Eurostat. Automatic data checks in the reporting questionnaires assist countries during the data compilation.

The reporting questionnaires include a set of automatic checks that are designed to improve data quality and minimise errors. The main purpose of the data checks is to verify the internal consistency in the data reported in the questionnaire. Some checks verify that data correctly add up in one excel sheet (e.g. for diagnostic exams), or that data are consistent from one sheet to another (e.g. for physicians). They calculate the difference between the data concerned; theoretically, the result should be equal to 0. Other checks verify the data consistency/reliability (e.g. the number of practising physicians should be smaller than the number of physicians licensed to practice; percentages should not be higher than 100%; etc.).

All data checks are calculated in the grey columns labelled '**Data errors**' at the right of data tables. When there are errors in the data, they appear in ***bold italic and red*** font in the cells below the label 'Data errors' (see an example in the figure below).

Figure 9: Example of a table with data checks within the same spreadsheet: Diagnostic exams

Diagnostic exams

YEARS	CT exams Total Number	Code*	CT exams Hospital Number	Code*	CT exams Ambulatory care Number	Code*	MRI exams Total Number	Code*	MRI exams Hospital Number	Code*	MRI exams Ambulatory care Number	Code*	PET exams Total Number	Code*	PET exams Hospital Number	Code*	PET exams Ambulatory care Number	Code*	Data errors CT	Data errors MRI	Data errors PET
1990																			..	..	..
1991																			..	..	..
1992																			..	..	..
1993																			..	..	..
1994																			..	..	..
1995	21000000		18400000		2600000		9100000		5100000		4000000								-	-	..
1996	22600000		19700000		2900000		9800000		5600000		4200000								-	-	..
1997	25100000		21600000		3500000		10900000		6300000		4600000								-	-	..
1998	26300000		22600000		3700000		11900000		6900000		5000000								-	-	..
1999	30600000		25800000		4800000		13800000		8000000		5800000								-	-	..
2000	34900000		29000000		5900000		15800000		9100000		6700000								-	-	..
2001	39600001		33100000		6500000		18000000		10200000		7800000								1	-	..
2002	45400000		37900000		7500000		21900000		12400000		9500000								-	-	..
2003	50100000		41400000		8700000		24200000		12600000		11600001								-	-1	..
2004	53900000		44300000		9600000		24700000		13100000		11600000								-	-	..
2005	57600000		47200000		10400000		25300000		13600000		11700000								-	-	..
2006	62000000		51000000		11000000		26600000		14600000		12000000								-	-	..
2007	68700000		55700000		13000000		27500000		14900000		12600000								-	-	..
2008	73100000		58400000		14700000		28400000		14200000		14210000								-	***-10000***	..
2009	77500000		61100000		16400000		29400000		13600000		15780000								-	***20000***	..
2010	81900000		63900000		18000000		30200000		14300000		15900000								-	-	..
2011																			..	..	..
2012																			..	..	..

The data error signs are:

- : no error (data add up);

.. : missing data;

-1/1: small rounding error;

- Figure/text in bold, italic and red: there is an error (in the figure, data do not add up for MRI exams in 2008 and 2009).

An example of data checks across excel workbook sheets comes from the HealthEmployment workbook:

In the sheets "***Physicians by categories***" and "***Physicians by age and gender***", the sum of data should theoretically add up to the total number of ***practising*** physicians reported in the sheet "***Physicians***".

Reporting countries are strongly encouraged to use these data checking tools and to **correct any data inconsistencies** before sending back the questionnaire, or **provide explanation in the metadata** when the data do not add up or are not consistent.

6.3. Validation in EDAMIS4

After transmission of a reporting questionnaire, EDAMIS4 will perform a validation of the structure (STRUVAL) and the content of the file (CONVAL), according to the rules defined for the questionnaire.

Each failure of a validation rule in STRUVAL or CONVAL generates a record in the validation report. Error messages related to the structure are the same for all statistical domains. The validation messages related to the content are customized by Eurostat according to the domain.

6.3.1. Structural validation

The Structural Validation Service (STRUVAL) performs the structural validation of statistical data files based on a set of pre-defined validation rules, contained in a Data Structure Definition (DSD).

The structural validation confirms that the transmitted reporting questionnaire corresponds to the expected reporting questionnaire of the dataset in EDAMIS4. It checks that no sheets have been added or removed. It checks that the data entered correspond to those allowed, e.g. that a flag used is one of the allowed flags that is included in the code list.

If the transmitted file fails the STRUVAL validation it is rejected and the content validation is not performed.

The STRUVAL error codes and corresponding messages are available here: https://ec.europa.eu/eurostat/cros/content/struval-error-codes-and-messages_en

6.3.2. Content validation

After the structure of the file has passed the STRUVAL successfully, the Content Validation Service (CONVAL) performs certain validation of the content of the data file.

- Verification of allowed observation values.
- The completeness of mandatory variables is verified. Specific rules have been formulated for countries/variables combinations where a derogation exist.
- The flags entered in the 'Code' field are checked against a code list of allowed flags and flag combinations.

The specific validation rules for the healthcare non-expenditure data collection are presented in Annex D.

6.3.3. Severity of errors and warnings

Different degrees of *severity* are associated to each validation rule:

- Error
- Warning
- Info

Error

Blocking. The data is rejected and the identified issue must be corrected in the before re-submission.

If a blocking error has occurred, the file has not been officially transmitted to Eurostat.

Warning

Non-blocking. The validation process detected an issue where expert evaluation and possible correction is required before the acceptance of the data.

Info

Non-blocking. Information on the data is provided.

6.4. Messages from EDAMIS

The data provider may receive the following messages throughout the operation of the validation process via the EDAMIS service. The EDAMIS service may be configured to send an email to inform users of the availability of the report.

1. Email message confirming that the data transmission is successful. The message is sent in all cases of data transmission.

2. Email message informing the data provider that the validation process concluded, and the validation report is now available via the EDAMIS user interface.

In case users have to be added to or removed from the list of receivers of any of these messages, please contact EDAMIS support.

6.5. The validation feedback report

The User guide for validation reports are available in this link: https://ec.europa.eu/eurostat/cros/content/user-guide-validation-reports_en

The validation feedback report has to be retrieved in EDAMIS4. It will be available in HTML and, for the SDMX Excel reporting questionnaires, also in Excel format. The HTML format will contain a summary and the details of any errors, warnings or info codes and messages. The Excel format will correspond to the file transmitted by the country, and cells where a rule violation is detected are highlighted in orange color. The Error Message is displayed in a comment box attached to the cell, along with the Severity.

In case multiple errors are associated with a single cell, all Error Messages are listed in the same comment box.

6.6. Validation in Eurostat and OECD

As mentioned earlier in this chapter , when countries submit data files via EDAMIS4 they will receive warning notifications if there are any validation issues. Certain data checks cannot yet be made automatically and depends strongly on the experience and expertise of Eurostat and OECD staff. Therefore, a manual validation process will take place which involves the following:

Eurostat and OECD will manually analyse compliance at deadline, in terms of completeness and timeliness of mandatory variables. Eurostat and OECD have developed macros for each excel questionnaire to assist in performing manual checks of the data and assessing for any anomalies such as an unusual and unexplained increase/decrease in a certain variable , differences in the total number of healthcare staff reported under the different questionnaire sheets, correct use of flags, large revisions of previous data, etc.

The Sources and Methods Annex (see Chapter 7) containing detailed metadata serves as an important resource to understand the data and address any potential questions that arise during the manual validation process (e.g. a change in coverage). Eurostat and OECD will check that any breaks in series, and deviations from the definition are appropriately flagged in both the data questionnaires and explained in the metadata.

Once Eurostat and OECD have agreed on any issues or questions that arise through this process, Eurostat will send emails to countries with any questions. These emails will be sent from Eurostat's functional mailbox ESTAT-JQNMHCS@ec.europa.eu and contain the validation results from both OECD and Eurostat.

This process may involve multiple email being sent between Eurostat, OECD and the country to resolve any issues or queries.

The validation processed is finished once Eurostat sends the country an email informing the country that the validation process is closed.

7 National reference metadata reports

7.1. Introduction to reference metadata

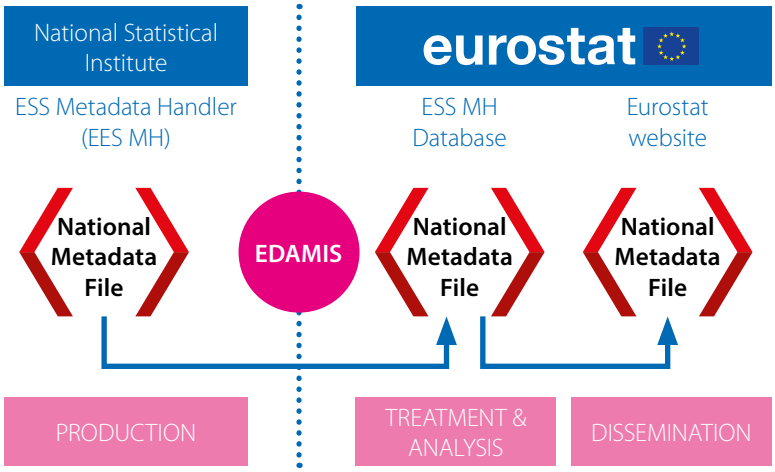
In line with the European Statistical System (ESS) standards, reporting countries are required to provide reference metadata in electronic form, in accordance with an agreed interchange standard.

The conceptual framework agreed in the European Statistical System (ESS) is the Single Integrated Metadata Structure (SIMS) adopted by the European Statistical System Committee (ESSC) in 2015, in order to comply with the reporting obligations outlined in Article 12 of Regulation 223/2009 ([15]). This structure includes all statistical concepts of annual reference metadata and quality reports, and all concepts appear and therefore are reported only once (direct re-usability of existing information).

The annual reference metadata is a **user-oriented report**, comprising metadata, including quality metadata, that are intended for users of the statistical outputs, enabling them to assess whether the outputs are appropriate for the purposes they have in mind.

For further information on these topics, please refer to 'The ESS Handbook for Quality and Metadata Reports (EHQMR)' ([16]), a recognised ESS standard. It aims to promote harmonised quality reporting across statistical processes and Member States, and thus to facilitate cross-comparisons of processes and outputs.

Figure 10: Metadata process

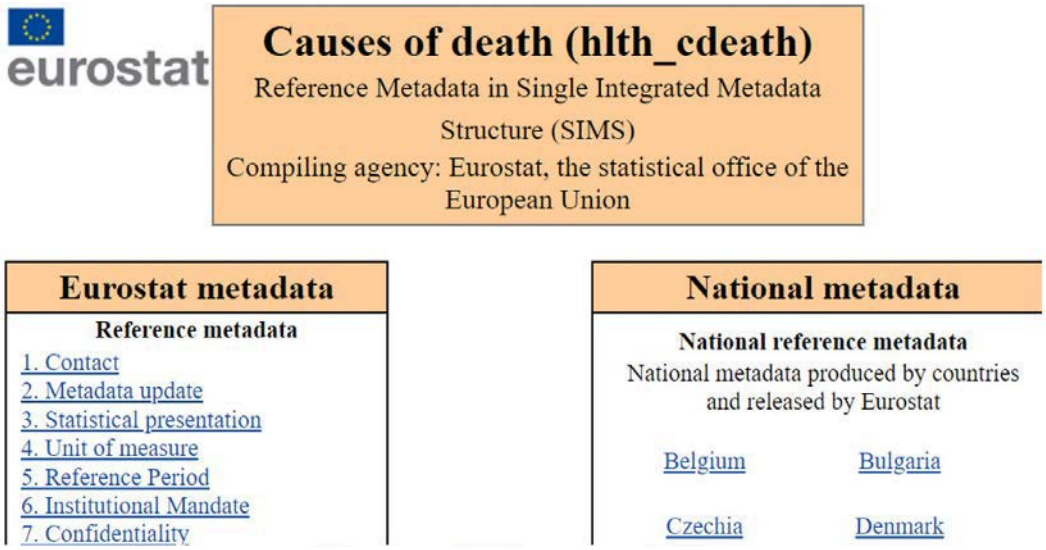


([15]) Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics http://data.europa.eu/eli/reg/2009/223/2015-06-08

([16]) European Statistical System (ESS) handbook for quality and metadata reporting 2021 - https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-21-021

The metadata shall be provided to Eurostat through the single entry point (also known as the Metadata Handler) (Figure 10). This is a web application developed to support the production, management, exchange and dissemination of metadata. Eurostat analyses and validates the national files, and they are then disseminated, attached to the European metadata file in Eurostat's dissemination database (Figure 11).

Figure 11: Example of online dissemination of national metadata in Eurostat's dissemination database



7.2. Report structure

The annual metadata report structure and guidelines for filling the report can be found on the Metadata Handler directly.

The information on Sources and Methods will be kept in a separate word document (hereafter '**Methodological Information Annex'** (Annex E) that shall be annexed in the ESS-MH, for the benefit of the OECD/WHO-Europe cooperation. Only one word document will cover all variables. Countries are requested to continue to indicate new information in the word file via track-changes. Eurostat will edit the document to accept the track-changes before disseminating the Annex online.

7.3. ESS MH Template for Reference Metadata Reporting

The template for reporting reference metadata for Healthcare non-Expenditure statistics, following the SIMS structure, is included in Annex F. It might look complex at a first glance, but once the concepts are understood and filled in for the first reference year, the information (that is still correct) can be reused in future reference years (there is a 'reuse function' by concept).

The SIMS structure splits the information required into 19 concepts with a few sub-concepts each. Eurostat proposes pre-filled text in a few sub-concepts with information that is generally applicable for most countries. Please note that prefilled text can be modified or deleted by the reporting country. Since the national reference metadata is primarily intended to inform the public, please write in an understandable way.

Guidelines accompany the SIMS template to provide further explanations (Annex F); these guidelines are also available in the Metadata Handler.

7.4. How to complete the annual reference metadata

Access to the ESS Metadata Handler:

Access is via this webpage: https://webgate.ec.europa.eu/estat/spe/metaconv/index.htm

Click on the button 'Login' on the left side and use your ECAS/EU-login.

Find the draft annual file:

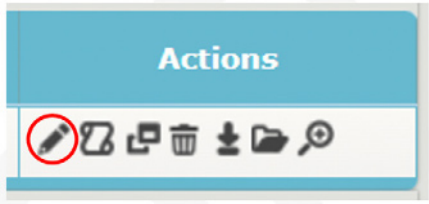
The draft metadata file for each country will be available and the name will include the reference year in question:

HEALTH_HCNENES_A_XX_2021_0000 (XX will be your country code, eg AT, the year is the reference year).

Edit the file:

To start editing the annual report, click on the pen icon to the right of the file name (under the heading Actions) (Figure 12).

Figure 12: Pen icon for editing the metadata file



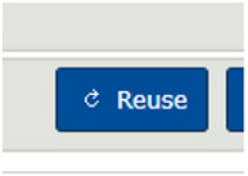
On the tab 'Content' (Figure 13), select an editable (sub-)concept from the tree structure on the left (Figure 14).

Figure 13: The different tabs available, here 'Content' tab is selected

Figure 14: Statistical concepts on the Content tab

The user can also reuse the content of some or all concepts from another metadata file by pressing the 'Reuse' button (Figure 15).

Figure 15: Reuse button that offers the possibility to copy from a previous file



This action will trigger a pop-up window with a full list of all metadata files to which the user has access.

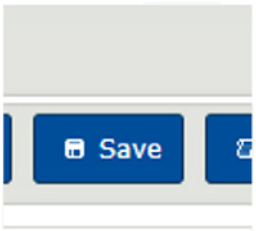
There are guidelines for each concept which can be found by pressing the small "G" (Figure 16)

Figure 16: How to find the guidelines for each concept in the ESS MH

The guidelines are also attached to this document in Annex F.

Please regularly save your work (Figure 17):

Figure 17: The important 'save' button



DOs and DON'Ts

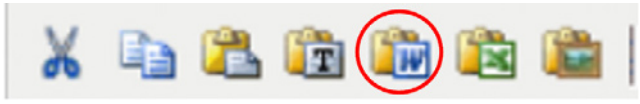
DO write clearly and address the concept you are writing about.

DO add a text in all concepts, using 'not applicable' or 'not available' where relevant.

DON'T write 'n.a.' or 'n.e.' or other ambiguous abbreviations.

DON'T copy directly from Word, but use the 'Paste from Word' button (Figure 18) or write directly in the text box.

Figure 18: Button to use for copying text from MS word



Please remember that Eurostat will not go in and edit in the main part of your reference metadata file, so if editorial changes are needed you will be requested to revise and retransmit the file.

7.5. Methodological information annex

Reporting countries are required to document the sources and methods underlying the data for each variable based on a common structure agreed-upon by the three organisations (Table 12).

The Methodological information annex has been pre-filled with information that countries have already provided to the international organisations. Correspondents are asked to use TRACK CHANGES MODE in Word to highlight all changes to the Methodological Information. This forms part of the metadata report.

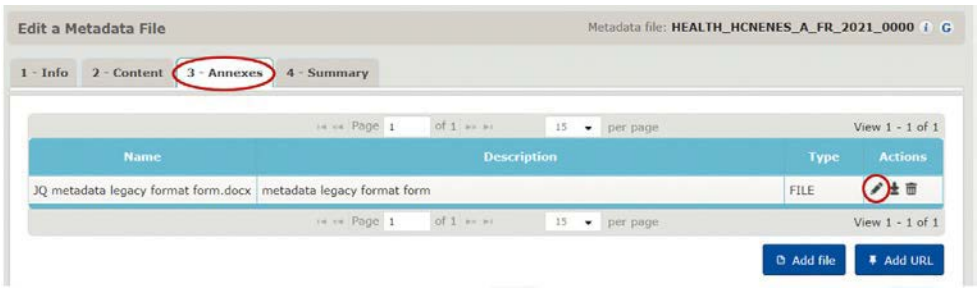
Table 12: Methodological information file structure

Source of data	1. Indicate the data source **in bold**, i.e. the name of the agency and/or the complete citation of the publication. 2. Indicate the full title of the original survey collection, administrative source, database or publication. 3. Indicate if different sources were used for different years. 4. Add URL for website where more information can be found.
Reference period	Indicate the reference period (e.g. annual average, data as of December 31, etc).
Coverage	Indicate the data coverage if it is less than complete (geographical, population, institutions, etc). – Does the data cover the entire country or only some part(s)? (Please specify if the geographic coverage is partial.) – Does the data cover both the public and private sectors? (If not, please specify the limitation in coverage.) – Are there any other limitations in the data coverage (e.g. military services, prisons, social services)?
Deviation from the definition	Indicate if the data supplied does not match the proposed joint definition (please specify).
Estimation method	Explain if data is an estimation, interpolation or any other relevant information.
Break in time series	Indicate if there is a break in the time series (due to changing definition, source or calculation method).

Upload the Annex 'Methodological information':

The Annex called 'Methodological information' (Annex E) with information per variable (in track-changes for highlighting new information) shall be uploaded via the tab 'Annexes'.

Figure 19: How to work with the MH Annex in ESS MH



7.6. Submitting annual reference metadata

Once you have filled in all the concepts and subconcepts, and uploaded the MH Annex, click on the 'Summary' tab to view the final document.

The box "for publication" should be ticked, indicating that the metadata document is designated for publishing (see Figure 20). Please do not untick this box. Confidential information such as contact names will be marked with a lock icon to indicate that this information will not be available for the public in the disseminated metadata file.

Figure 20: Preview the metadata file under the summary tab

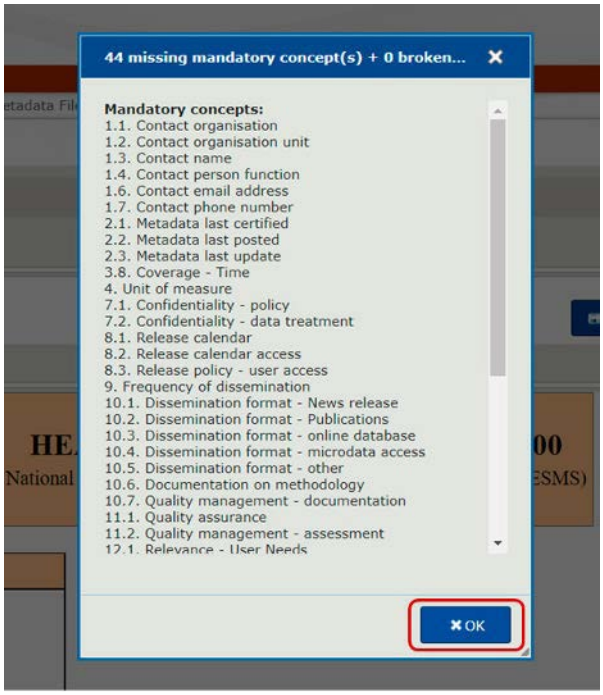
You can switch between Full View and Disseminated view; Full view will display any concepts that are marked as "restricted from publication", and Disseminated view with display the document, as it will appear on Eurostat's website.

You can also preview the file by clicking on the magnifying class icon under actions (Figure 21).

Figure 21: Magnifying glass icon to preview the metadata file

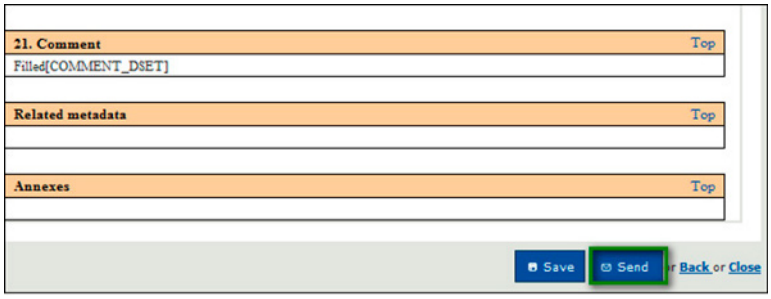
When you click on the 'summary' tab, a pop-up message will appear indicating which mandatory concepts and subconcepts still need to be completed, if any (Figure 22). You need to fill in all mandatory concepts and subconcepts in order to send the file.

Figure 22: Pop-up displaying missing mandatory concepts



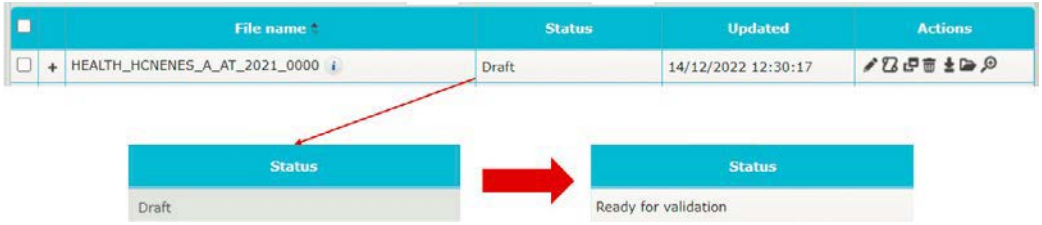
Once all mandatory concepts have been completed you can click the "ok" button on the pop-up box and you will be taken to the summary view. If you then scroll to the bottom of the, a "send" button will appear (Figure 23). Please click on this button to send the metadata file to Eurostat.

Figure 23: Send button



Once submitted, the file status will changes from "Draft" to "Ready for validation" (Figure 24)

Figure 24: Change in file status



You will receive email notifications when the file changes status and when it is transmitted.

If you need to make any changes to a file that has already been sent for validation, you can used the recall button under actions (Figure 25) to recall the file to draft. You can then make any necessary amendments and resend the file.

Figure 25: Recall icon

7.7. Transmission

Transmission of data and reference metadata covered by Regulation (EU) 2022/2294 takes place annually by 28 February or 31 August, depending on the section (see Table 1). Eurostat encourages reporting countries to send all the data and reference metadata by 28 February if possible.

Other data and reference metadata collected in the JQNMHC shall be transmitted annually by 28 February.

From the second year on, the main part of the metadata file can be reused after reviewing that the information is still applicable. The Methodological Information Annex shall be updated annually (for reference year 2021 and 2022), in track-changes.

As of reference year 2023, there will be two different deadlines for data and reference metadata. Eurostat proposes that as much as possible of data and reference metadata shall be transmitted at the earlier deadline, 28 February. With regards to metadata, this means that at least the main reference metadata file and the Methodological Information Annex with new information concerning the variables under the first deadline should be transmitted by 28 February annually.

At the second deadline, 31 August, the Methodological Information Annex can be updated with information concerning the variables concerned by the second deadline and retransmitted.

Please refer to this website for more information on reference metadata and for training opportunities on the ESS Metadata handler:

https://ec.europa.eu/eurostat/cros/content/data-and-metadata-exchange_en

8 Data dissemination

8.1. EU aggregates

EU aggregates will be produced and disseminated by Eurostat for use in publications. The absolute numbers for EU aggregates are the sum of the numbers provided by EU Member States.

When there is no available data for a country, estimations may be disseminated. In these cases, the calculation of the EU aggregate takes into account the available data in the 5 previous years for the countries for which data are missing. For the density rates these EU totals are divided by the corresponding total EU population. For some variables, this is not possible and no EU aggregate is disseminated.

8.2. Dissemination products

Eurostat publishes and disseminates HCNE data in various formats.

- Regular or ad-hoc news releases (on-line).
- Statistics Explained Articles in the area of Health.
  Statistics explained articles are an online publishing platform and gateway to Eurostat's statistical information. They are interactive articles that allow users to seamlessly access information at various levels. They are published in all areas Eurostat works in and are updated regularly.
- Eurostat's dissemination database
  All of Eurostat's data are published under the relevant theme in Eurostat's dissemination database. Data collected through the JQNMHC are disseminated under: Population and social conditions > Health > Health care.
- Metadata reports
  Metadata reports are published alongside statistical data.
- No microdata are disseminated publically.
  According to Regulation 223/2009 on European Statistics, confidential microdata can be made available for research purposes, but strict protocols apply to external users accessing statistical microdata.

Annex A

List of Mandatory Variables – correlation table

Variable Eurostat	Variable JQNMHC	Mandatory from Reference Year		Transmission deadline
Regulation (EU) 2022/2294	OECD/Eurostat/WHO-Europe	2021	2023	(months after the end of the reference period)
	Health Employment			
1.1 Number of practising physicians by age and sex	Practising physicians		X	14
1.1 Number of practising physicians by age and sex	Physicians by age group (under 35, 35-44, 45-54, 55-64, 65-74, 75 and over) and by gender.		X	14
1.2 Number of practising physicians by category	Physicians by categories		X	14
1.2.1 General practitioners	General practitioners		X	14
1.2.2 Other generalist (non-specialist) medical practitioners	Other generalist (non-specialist) medical practitioners		X	14
1.2.3 Paediatricians	General paediatricians		X	14
1.2.4 Obstetricians and gynaecologists	Obstetricians and gynaecologists		X	14
1.2.5 Psychiatrists	Psychiatrists		X	14
1.2.6 Group of non-surgical specialists	Medical group of specialists		X	14
1.2.7 Group of surgical specialists	Surgical group of specialists		X	14
1.2.8 Other specialists not elsewhere classified	Other specialists not elsewhere classified		X	14
1.2.9 Medical doctors not further defined	Medical doctors not further defined (ISCO-08 code: 2210)		X	14
1.3 Number of practising midwives (EU definition differs from JQ by being education based, not task based).	Practising midwives		X	14
1.4 Number of practising nurses (EU definition differs from JQ definition by being education based, not task based)	Practising 'professional nurses'		X	14
1.5 Number of practising dentists	Practising dentists (ISCO-08 code: 2261)		X	14
1.6 Number of practising pharmacists	Practising pharmacists (ISCO-08 code: 2262)		X	14
2.1 Number of medical graduates	Medical graduates	X		14
2.2 Number of dentistry graduates	Dentists graduates	X		14

Variable Eurostat	Variable JQNMHC	Mandatory from Reference Year		Transmission deadline
Regulation (EU) 2022/2294	OECD/Eurostat/WHO-Europe	2021	2023	(months after the end of the reference period)
2.3 Number of pharmacy graduates	Pharmacists graduates	X		14
2.4 Number of midwifery graduates	Midwives graduates	X		14
2.5 Number of nursing graduates	Nursing graduates	X		14
	Physical Resources			
3.1 Number of hospital beds for somatic care, breakdown by function	Somatic care beds, breakdown by function	X		14
3.2 Number of hospital beds for psychiatric care	Psychiatric care beds	X		14
3.3 Number of beds in residential long-term care facilities	Beds in residential long-term care facilities	X		14
4.1 Number of MRI units	Magnetic Resonance Imaging units	X		14
4.2 Number of CT scanners	Computed Tomography scanners	X		14
	Health Activities			
5.1 Immunisation rate of people aged 65 and older against influenza	Immunisation against influenza (among population aged 65 and over)	X		14
5.2 Rate of women aged between 50 and 69 screened against breast cancer within a national breast cancer (mammography) screening programme	Breast cancer screening (mammography) (survey and programme data)	X		14
5.3 Rate of women aged between 20 and 69 screened against cervical cancer within a national (cervical cancer) screening programme	Cervical cancer screening (survey and programme data)	X		14
6.4 Number of hospital inpatient discharges for patients who have received somatic curative care	Hospital aggregates: Curative (acute) care – Discharges (somatic care)		X	20
6.5 Number of hospital inpatient bed-days for patients who have received somatic curative care	Hospital aggregates: Curative (acute) care – Bed-days somatic care		X	20
7 Surgical procedures	Surgical procedures (shortlist)		X	20
7.1 Cataract surgery				
7.2 Tonsillectomy				
7.3 Transluminal coronary angioplasty				
7.4 Coronary artery bypass graft				
7.5 Cholecystectomy				
7.6 Repair of inguinal hernia				
7.7 Caesarean section				
7.8 Hip replacement				
7.9 Total knee replacement				
7.10 Partial excision of mammary gland				
7.11 Total mastectomy				
	HDD File			
6.1 Number of hospital inpatient discharges	Hospital inpatient discharges and bed-days by diagnostic categories		X	20
6.2 Number of hospital inpatient bed-days				
6.3 Number of hospital day case discharges	Hospital day cases by diagnostic categories			

Annex B

List of all variables collected from reporting countries

Health employment and education

Physicians
Practising physicians
Professionally active physicians
Physicians licensed to practice

Physicians by age group and by gender

Physicians by categories
Generalist medical practitioners
- General practitioners
- Other generalist (non-specialist) medical practitioners

Specialist medical practitioners
- Paediatricians
- Obstetricians and gynaecologists
- Psychiatrists
- Medical group of specialists
- Surgical group of specialists
- Other specialists n.e.c.

Medical doctors not further defined

Midwives
Practising midwives
Professionally active midwives
Midwives licensed to practice

Nurses
Practising nurses
Professionally active nurses
Nurses licensed to practice

Caring personnel (personal care workers)
Practising caring personnel (personal care workers)
Professionally active caring personnel (personal care workers)

Dentists
Practising dentists
Professionally active dentists
Dentists licensed to practice

Pharmacists
Practising pharmacists
Professionally active pharmacists
Pharmacists licensed to practice

Practising physiotherapists

Hospital employment
Total hospital employment
- Physicians employed by hospital
- Professional nurses and midwives employed by hospital
- Associate professional nurses employed by hospital
- Health care assistants employed by hospital
- Other health service providers employed by hospital
- Other staff employed by hospital

Graduates
Medical graduates
Dentists graduates
Pharmacists graduates
Midwives graduates
Nursing graduates

Health workforce migration

Foreign-trained doctors
- Foreign-trained doctors, stock
- Foreign-trained doctors, annual flow

Foreign-trained nurses
- Foreign-trained nurses, stock
- Foreign-trained nurses, annual flow

Physical and Technical Resources

Hospitals (HP.1)
Hospitals

- Publically owned hospitals
- Not-for-profit privately owned hospitals
- For-profit privately owned hospitals

General hospitals (HP.1.1)

Hospital beds by function (HP.1)
Total hospital beds
- Somatic care beds
- Psychiatric care beds
- Curative (acute) care beds (total and breakdown between somatic care and psychiatric care)
- Rehabilitative care beds (total and breakdown between somatic care and psychiatric care)
- Long-term care beds (total and breakdown between somatic care and psychiatric care)
- Other hospital beds (total and breakdown between somatic care and psychiatric care)

Hospital beds by sector (HP.1)
Total hospital beds
- Beds in publically owned hospitals
- Beds in not-for-profit privately owned hospitals
- Beds in for-profit privately owned hospitals

Intensive care – PILOT
Total ICU beds
- Total adult ICU beds
- Critical care adult beds
- Total neonatal ICU beds
- Total paediatric ICU beds

Total adult ICU bed-days
Total adult ICU occupancy rate
Number of days with adult ICU occupancy rate > 80%
Number of days with adult ICU occupancy rate > 95%

Beds in residential long-term care facilities (HP.2)
Beds in residential long-term care facilities

Medical technology (HP.1, HP.3 and HP.1+HP.3)
Computed Tomography Scanners
Magnetic Resonance Imaging Units
Positron Emission Tomography scanners
Gamma cameras
Mammographs
Radiation therapy equipment

Health care activities

AMBULATORY CARE
Consultations
Doctor consultations (in-person)
Dentist consultations (in-person)

Teleconsultations - PILOT
Total doctor consultations (including teleconsultations)
Teleconsultations

Immunisation
Immunisation against influenza

Screening (survey and programme data)
Breast cancer screening
Cervical caner screening
Colorectal cancer screening

HOSPITAL CARE
Hospital aggregates
Inpatient care discharges (all hospitals)
Inpatient care ALOS (all hospitals)
Inpatient curative care discharges (total and breakdown between somatic care and psychiatric care)
Inpatient curative care bed-days (total and breakdown between somatic care and psychiatric care)
Inpatient curative care ALOS (total and breakdown between somatic care and psychiatric care)
Inpatient curative care occupancy rates (total and breakdown between somatic care and psychiatric care)

Hospital discharges by diagnostic categories
Inpatient cases
Day cases

Hospital bed-days by diagnostic categories
Hospital bed-days (inpatient cases)

Hospital discharges of non-residents patients
In-patient cases
Day cases
Hospital bed-days (inpatient cases)

PROCEDURES
Diagnostic exams (HP.1, HP.3 and HP.1+HP.3)
Computed Tomography (CT) exams
Magnetic Resonance Imaging (MRI) exams
Positron Emission Tomography (PET) exams

Surgical procedures (shortlist of 16 procedures + 4 subgroups)
Total
- Inpatient cases
- Day cases
- Outpatient cases (collected for 2 procedures only)

Health workers at regional level
Physicians

Hospital beds at regional level
Total hospital beds

Hospital technical resources
Operation theatres in hospital
Day care places altogether
Surgical day care places
Oncological day care places
Psychiatric day care places
Geriatric day care places

Hospital discharges by diagnostic categories at regional level
Inpatient cases
Day cases
Hospital bed-days (inpatient cases)

Annex C

Shortlist of Surgical Procedures

Surgical procedures (shortlist): Mapping with ICD-9-CM[1]

Version 2007-07-22 (including minor updates in November 2013)

Label	Code	Text
Cataract surgery Includes secondary implantation of lens and removal of lens. ICD-9-CM (1996): 13.1-13.8		
	13.1	Intracapsular extraction of lens
	13.2	Extracapsular extraction of lens by linear extraction technique
	13.3	Extracapsular extraction of lens by simple aspiration (and irrigation) technique
	13.4	Extracapsular extraction of lens by fragmentation and aspiration technique
	13.5	Other extracapsular extraction of lens
	13.6	Other cataract extraction
	13.7	Insertion of prosthetic lens [pseudophakos]
	13.8	Removal of implanted lens
Tonsillectomy Includes total and partial tonsillectomy with or without adenoidectomy. Excludes adenoidectomy without tonsillectomy. ICD-9-CM (1996): 28.2-28.4		
	28.2	Tonsillectomy without adenoidectomy
	28.3	Tonsillectomy with adenoidectomy
	28.4	Excision of tonsil tag
Transluminal coronary angioplasty Includes percutaneous transluminal interventions (PTCA, PCI) with or without insertion of stent. ICD-9-CM (1996): 36.01, 36.02, 36.05		
	36.01	Single vessel percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy without mention of thrombolytic agent
	36.02	Single vessel percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy with mention of thrombolytic agent
	36.05	Multiple vessel percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy performed during the same operation, with or without mention of thrombolytic agent
Note: The above codes have been changed in later versions of ICD-9-CM:		
ICD-9-CM (2006): 00.66		
	00.66	Percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy

Label	Code	Text
Coronary artery bypass graft ICD-9-CM (1996): 36.1		
	36.1	Bypass anastomosis for heart revascularization
Stem cell transplantation Applies to recipient only. Includes bone marrow transplantation. ICD-9-CM (1996): 41.0		
	41.0	Bone marrow or hematopoietic stem cell transplant
Appendectomy Includes appendectomy and incidental appendectomy. Includes laparoscopic and other appendectomy. ICD-9-CM (1996): 47.0, 47.1		
	47.0	Appendectomy
	47.1	Incidental appendectomy
Of which: **Laparoscopic appendectomy** Excludes conversion from laparoscopic to open surgery. ICD-9-CM (1996): 47.01, 47.11		
	47.01	Laparoscopic appendectomy
	47.11	Laparoscopic incidental appendectomy
Cholecystectomy Includes cholecystectomy and laparoscopic cholecystectomy. ICD-9-CM (1996): 51.22, 51.23		
	51.22	Cholecystectomy
	51.23	Laparoscopic cholecystectomy
Of which: **Laparoscopic cholescystectomy** Excludes conversion from laparoscopic to open surgery. ICD-9-CM (1996): 51.23		
	51.23	Laparoscopic cholecystectomy
Repair of inguinal hernia Includes repair of inguinal hernia and laparoscopic repair of inguinal hernia. ICD-9-CM (1996): 53.0, 53.1		
	53.0	Unilateral repair of inguinal hernia
	53.1	Bilateral repair of inguinal hernia
Of which: **Laparoscopic repair of inguinal hernia** Excludes conversion from laparoscopic to open surgery. ICD-9-CM (1996, 2006): Not possible *Note: No specific codes in ICD-9-CM (1996, 2006) for laparoscopic repair of inguinal hernia, but specified in later versions:* ICD-9-CM (2013): 17.1, 17.2		
	17.1	Laparoscopic unilateral repair of inguinal hernia
	17.2	Laparoscopic bilateral repair of inguinal hernia
Open prostatectomy Includes radical and transvesical prostatectomy and excision of adenoma. Excludes transurethral procedures. ICD-9-CM (1996): 60.3-60.6		
	60.3	Suprapubic prostatectomy
	60.4	Retropubic prostatectomy
	60.5	Radical prostatectomy
	60.6	Other prostatectomy
Transurethral prostatectomy Includes transurethral laser resection, electroevaporization and microwave therapy. ICD-9-CM (1996): 60.2		
	60.2	Transurethral prostatectomy

Label	Code	Text
Hysterectomy Includes partial and total hysterectomy (with or without excision of adnexa) by laparatomy or vaginal or laparoscopic methods. Excludes evisceration (exentration) of pelvis and caesarean hysterectomy. ICD-9-CM (1996): 68.3-68.7; 68.9		
	68.3	Subtotal abdominal hysterectomy
	68.4	Total abdominal hysterectomy
	68.5	Vaginal hysterectomy
	68.6	Radical abdominal hysterectomy
	68.7	Radical vaginal hysterectomy
	68.9	Other and unspecified hysterectomy
Of which: **Laparoscopic hysterectomy** Includes combination of laparoscopic and open techniques (laparoscopic assisted). Excludes conversion from laparoscopic to open surgery. ICD-9-CM (1996): Not possible *Note: No specific codes in ICD-9-CM (1996) for laparoscopic hysterectomy, but specified in later versions:* ICD-9-CM (2006): 68.31, 68.41, 68.51, 68.61, 68.71		
	68.31	Laparoscopic supracervical hysterectomy [LSH]
	68.41	Laparoscopic total abdominal hysterectomy
	68.51	Laparoscopically assisted vaginal hysterectomy (LAVH)
	68.61	Laparoscopic radical abdominal hysterectomy
	68.71	Laparoscopic radical vaginal hysterectomy
Caesarean section ICD-9-CM (1996): 74.0-74.2; 74.4, 74.99		
	74.0	Classical cesarean section
	74.1	Low cervical cesarean section
	74.2	Extraperitoneal cesarean section
	74.4	Cesarean section of other specified type
	74.99	Other cesarean section of unspecified type
Hip replacement Includes total and partial replacement. ICD-9-CM (1996): 81.51-81.53		
	81.51	Total hip replacement
	81.52	Partial hip replacement
	81.53	Revision of hip replacement
*Note: in later versions of ICD-9-CM specific codes are available for **revision of hip replacement** with components specified:*		
ICD-9-CM (2006): 00.70-00.77, 81.53		
	00.70	Revision of hip replacement, both acetabular and femoral components
	00.71	Revision of hip replacement, acetabular component
	00.72	Revision of hip replacement, femoral component
	00.73	Revision of hip replacement, acetabular liner and/or femoral head only
	00.74	Hip replacement bearing surface, metal on polyethylene
	00.75	Hip replacement bearing surface, metal-on-metal
	00.76	Hip replacement bearing surface, ceramic-on-ceramic
	00.77	Hip replacement bearing surface, ceramic-on-polyethylene
	81.53	Revision of hip replacement, not otherwise specified

Label	Code	Text
Total knee replacement Excludes partial knee replacement. ICD-9-CM (1996): 81.54		
	81.54	Total knee replacement
Partial excision of mammary gland Includes wedge excision and other partial excision with or without lymph node excision. Excludes biopsy and breast reduction surgery. ICD-9-CM (1996): 85.20-85.23		
	85.20	Excision or destruction of breast tissue, not otherwise specified
	85.21	Local excision of lesion of breast
	85.22	Resection of quadrant of breast
	85.23	Subtotal mastectomy
Total mastectomy Includes radical mastectomy and mastectomy with preservation of skin and nipple (subcutaneous mastectomy). ICD-9-CM (1996): 85.33-85.36; 85.4		
	85.33	Unilateral subcutaneous mammectomy with synchronous implant
	85.34	Other unilateral subcutaneous mammectomy
	85.35	Bilateral subcutaneous mammectomy with synchronous implant
	85.36	Other bilateral subcutaneous mammectomy
	85.4	Mastectomy

[1]This shortlist and its mapping with ICD-9-CM was established in 2007 by Ben Scharp, Caroline Goebertus, Janet Manuel and Björn Smedby for the second Hospital Data Project.

The mapping was primarily to ICD-9-CM (1996), with relevant changes in later versions shown with codes from ICD-9-CM (2006).

Annex D

Validation rules

The content validation rules from EDAMIS are available in a separate excel workbook on CIRCABC:

https://circabc.europa.eu/ui/group/7b3a8e80-bdaa-483c-96ef-c4d152b50172/library/cba6ec75-9639-4de9-a56c-517c0c3f962f?p=1&n=25&sort=modified_DESC

Annex E

Template Methodological Information Annex to the national reference metadata

Joint Questionnaire on Non-Monetary Health Care Statistics

Sources and Methods

COUNTRY
Reference year 2021 (data collection 2023)

The following structure should be followed for each variable in Annex B in the collection of information on *Sources and Methods*

Source of data	1. Indicate the data source **in bold**, i.e. the name of the agency and/or the complete citation of the publication. 2. Indicate the full title of the original survey collection, administrative source, database or publication. 3. Indicate if different sources were used for different years. 4. Add URL for website where more information can be found.
Reference period	Indicate the reference period (e.g. annual average, data as of December 31, etc).
Coverage	Indicate the data coverage if it is less than complete (geographical, population, institutions, etc). – Does the data cover the entire country or only some part(s)? (Please specify if the geographic coverage is partial.) – Does the data cover both the public and private sectors? (If not, please specify the limitation in coverage.) – Are there any other limitations in the data coverage (e.g. military services, prisons, social services)?
Deviation from the definition	Indicate if the data supplied does not match the proposed joint definition (please specify).
Estimation method	Explain if data is an estimation, interpolation or any other relevant information.
Break in time series	Indicate if there is a break in the time series (due to changing definition, source or calculation method).

For further information on international classifications, please see:

- International Standard Classification of Occupations, ISCO-08, ILO (2009): http://www.ilo.org/public/english/bureau/stat/isco/index.htm;
- International Classification of Diseases (ICD), WHO: https://www.who.int/standards/classifications/classification-of-diseases;
- International Shortlist for Hospital Morbidity Tabulation (ISHMT): http://stats.oecd.org/wbos/fileview2.aspx?IDFile=e477970b-3024-4188-8dc6-13f3db201846;
- International Classification for Health Accounts (ICHA), *A System of Health Accounts*, OECD, WHO and Eurostat (2011): https://ec.europa.eu/eurostat/en/web/products-manuals-and-guidelines/-/ks-05-19-103.

Countries reporting to Eurostat must follow the definitions and criteria of the Eurostat Manual.

Annex F

Reference Metadata in SIMS Structure

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.1	**Contact**	Individual or organisational contact points for the data or metadata, including information on how to reach the contact points.	Information relating to this concept is provided by reporting on its sub-concepts.	*Grey fill in this column means 'Do not write in this cell'*
S.1.1	Contact organisation	The name of the organisation of the contact points for the data or metadata.	Provide the full name (not just code name) of organisation responsible for the process and outputs (data and metadata) that are the subject of the report.	
S.1.2	Contact organisation unit	An addressable subdivision of an organisation.	Provide the full name of the organisational unit responsible. The name can include a unit number.	
S.1.3	Contact name	The names of the contact points for the data or metadata.	This information will not be made public. Provide the first and last names of the contact point(s). If more than one name is provided, the main contact should be indicated. If the author of the report is different from the person(s) responsible for process and its outputs, provide this name also.	
S.1.4	Contact person function	The area of technical responsibility of the contact, such as "methodology", "database management" or "dissemination".	This information will not be made public. Provide the title(s) and area(s) of responsibility of the person(s) indicated as contact(s), for example Senior Research Assistant, Economics Division.	
S.1.5	Contact mail address	The postal address of the contact points for the data or metadata.	Provide the postal address(es) of the person(s) indicated as contacts.	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.1.6	Contact email address	E-mail address of the contact points for the data or metadata.	This information will not be made public. Provide the email address(es) of the person(s) indicated as contacts. The address can be an individual e-mail address or a mailbox for the organisation to which the person has access.	
S.1.7	Contact phone number	The telephone number of the contact points for the data or metadata.	This information will not be made public. Provide the telephone number(s) of the person(s) indicated as contacts.	
S.1.8	Contact fax number	Fax number of the contact points for the data or metadata.	This information will not be made public. Provide the fax number(s) of the person(s) indicated as contacts.	
S.2	**Metadata update**	The date on which the metadata element was inserted or modified in the database.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.2.1	Metadata last certified	Date of the latest certification provided by the domain manager to confirm that the metadata posted are still up-to-date, even if the content has not been amended.	Certification can be provided even if the metadata have not been amended since the previous certification. It is to confirm that the metadata has been checked.	
S.2.2	Metadata last posted	Date of the latest dissemination of the metadata.	The date when the complete set of metadata was last disseminated as a block should be provided (manually, or automatically by the metadata system).	
S.2.3	Metadata last update	Date of last update of the content of the metadata.	The date when any metadata were last updated should be provided (manually, or automatically by the metadata system). Put the date you last introduced changes.	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.3	**Statistical presentation**	Description of the disseminated data which can be displayed to users as tables, graphs or maps.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.3.1	Data description	Main characteristics of the data set, referring to the data and indicators disseminated.	Describe briefly the main characteristics of the data in an easily and quickly understandable manner, referring to the main variables disseminated. More detailed descriptions of the variables are in S.03.4. A pre-filled text is proposed; it can be revised or removed.	Statistics on healthcare non-expenditure provide information on healthcare human resources, healthcare facilities, and healthcare utilisation. – The people active in the healthcare sector (doctors, dentists, nurses, etc.) and their status (graduates, practising, migration of doctors and nurses, etc.); – The available healthcare technical resources and facilities (hospital beds, beds in residential care facilities, medical technology, etc.); – The health activities or patient contacts undertaken (hospital discharges, surgical procedures, ambulatory care data, etc.). Annual national and regional data are provided in absolute numbers or as a rate of a relevant population. Data are based mainly on administrative records (see section 18.1 'Source data' for more information).
S.3.2	Classification system	Arrangement or division of objects into groups based on characteristics which the objects have in common.	List all classifications and breakdowns that are used in the data (with their detailed names) and provide links (if publicly available). Explain deviations, if any, from ESS or international standards. A pre-filled text is proposed; it can be revised or removed.	For the collection data on healthcare non-expenditure, the classifications used in the System of Health Accounts (SHA) and its related set of International Classification for the Health Accounts (https://www.oecd.org/health/health-systems/1841456.pdf) are applied. For hospital discharges, the International Shortlist for Hospital Morbidity Tabulation (ISHMT) is used. (https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm? TargetUrl=LST_NOM_DTL&StrNom=ISHMT_2005&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC) For Health Employment, the Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications apply (https://eur-lex.europa.eu/eli/dir/2005/36/2020-04-24).

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
				Definitions of mandatory variables are laid down in Commission Regulation (EU) 2022/2294. Where possible, the statistics are separated by sex (male/female), age group and NUTS2 region. The Eurostat manual on healthcare non-expenditure statistics (link) provides an overview of the classifications, both for mandatory variables and variables provided on voluntary basis. National deviations: see Annex at the bottom of the page.
S.3.3	Sector coverage	Main economic or other sectors covered by the statistics.	List the main economic or other sectors covered by the data and the size classes used, for example, size classes based on number of employees. A pre-filled text is proposed; it can be revised or removed.	Public Health.
S.3.4	Statistical concepts and definitions	Statistical characteristics of statistical observations, variables.	Define and describe briefly the main statistical variables that have been observed or derived. Indicate their types. Indicate discrepancies, if any, from the ESS or international standards. Note that any difference between these variables and the variables desired by users is a relevance issue and is discussed in S.12. A pre-filled text is proposed; it can be revised or removed.	The healthcare non-expenditure statistics describe the public health sector from a non-monetary perspective. The statistics explain the number or rate of different healthcare resources, facilities and utilisations. A wide range of indicators are collected from a multitude of sources and therefore, details pertaining to individual variables are given in the Annex. Definitions of mandatory variables are laid down in Commission Regulation (EU) 2022/2294. The Eurostat manual on healthcare non-expenditure statistics (link) provides an overview of the classifications, both for mandatory variables and variables provided on voluntary basis. National changes of statistical concepts and national definitions deviating from Regulation 2022/2294: see Annex at the bottom of the page.
S.3.5	Statistical unit	Entity for which information is sought and for which statistics are ultimately compiled.	Define the type of statistical unit about which data are collected, e.g. enterprise, kind of activity unit, local unit, private household, dwelling, person, import transaction. If there is more than one type of unit, define each type. If applicable, please add any deviations, such as 'Subgroup of institutions (e.g. private hospitals) are/are not included in the data collection'.	Registered health professionals or health care facility categories.

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.3.6	Statistical population	The total membership or population or "universe" of a defined class of people, objects or events.	Define the target population of statistical units for which information is sought. Note that a difference between the target population and the ideal population desired by users is a relevance issue and is discussed in S.12; and the difference between target population and the survey population is a coverage issue and is discussed in S13.3. If there is more than one type of statistical population, define each type. If applicable, please add any deviations, such as 'Subgroup of institutions (e.g. private hospitals) are/are not included in the data collection'	(1) all health care staff (2) all available beds or equipment in hospitals or in nursing and residential care facilities (3) all discharges or procedures performed in all hospitals
S.3.7	Reference area	The country or geographic area to which the measured statistical phenomenon relates.	Describe the country, the regions, the districts, or the other geographical aggregates, to which the data refer. Identify any specific exclusions in the data disseminated. If coverage includes overseas territories this should be stated, and they should be specified. All countries with overseas territories must provide details of inclusion/exclusion.	Complete national territory
S.3.8	Time coverage	The length of time for which data are available.	State the time period(s) covered by the data, e.g. first quarter 2018, or quarters 2015-2018, or year 2018, or years 1985-2018. Note that any issues concerning comparability over time are discussed in S.15.	
S.3.9	Base period	The period of time used as the base of an index number, or to which a constant series refers.	Not applicable	Not applicable
S.4	**Unit of measure**	The unit in which the data values are measured.	Text could be: Absolute numbers at end of reference period/average number during reference period. Rate of phenomenon per reference population (e.g. per 100 000 inhabitants).	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.5	**Reference period**	The period of time or point in time to which the measured observation is intended to refer.	The value of a variable refers to a specific time period (for example, the last week of a month, a month, a fiscal year, a calendar year, or several calendar years), or to a point in time (for example, a specific day, or the last day of a month). The variables in a dataset may refer to more than one reference period. All reference periods should be stated. Note that the difference, if any, between the target reference period(s) and the actual reference period(s) is an accuracy issue and should be discussed in S.13.3. Note that if the survey population does not include all the units in the target population for the specified reference period, this is a coverage issue and should be discussed in S.13.3. A pre-filled text is proposed; it can be revised or removed.	Calendar year.
S.6	**Institutional mandate**	Law, set of rules or other formal set of instructions assigning responsibility as well as the authority to an organisation for the collection, processing, and dissemination of statistics.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.6.1	Legal acts and other agreements	Legal acts or other formal or informal agreements that assign responsibility as well as the authority to an agency for the collection, processing, and dissemination of statistics.	State the national legal acts and/or other reporting agreements, including EU legal acts, the implementation of EU directives. Any national legislation shall be added to the pre-filled text.	Regulation on Community statistics on public health and health and safety at work (EC) No 1338/2008 (https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=OJ%3AL%3A2008%3A354%3ATOC) Commission Regulation (EU) 2022/2294 on statistics on healthcare facilities, healthcare human resources and healthcare utilisation http://data.europa.eu/eli/reg/2022/2294/oj Gentlemens's agreement
S.6.2	Data sharing	Arrangements or procedures for data sharing and coordination between data producing agencies.	Describe the arrangements, procedures or agreements related to data sharing and exchange between data producing agencies within the national statistical system. Any national mandates shall be added to the pre-filled text.	Joint Questionnaire on Non-Monetary Health Care Statistics, which is carried by Eurostat, OECD and WHO-Europe.

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.7	**Confidentiality**	A property of data indicating the extent to which their unauthorised disclosure could be prejudicial or harmful to the interest of the source or other relevant parties.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.7.1	Confidentiality - policy	Legislative measures or other formal procedures which prevent unauthorised disclosure of data that identify a person or economic entity either directly or indirectly.	Describe all national legislation, or other formal requirements, that relate to confidentiality. Describe relevant national policy (if any). Note that the existence of legislation and/or policy provides some assurance that methods necessary to assure confidentiality have been applied to the data.	
S.7.2	Confidentiality - data treatment	Rules applied for treating the datasets to ensure statistical confidentiality and prevent unauthorised disclosure.	National level treatment should be added here. For aggregate outputs: – Provide the rules that define a confidential cell. – Describe the procedures for detecting confidential cells, including checking for residual disclosure. – Describe the procedures for reducing the risk of disclosure by treating confidential cells, for example by perturbation, controlled rounding, cell suppression, or cell aggregation. For micro-level outputs: – Describe the procedures that are used in protecting confidentiality.	
S.8	**Release policy**	Rules for disseminating statistical data to all interested parties.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.8.1	Release calendar	The schedule of statistical release dates.	State whether there is a national release calendar for the statistical outputs from the process being reported, and if so, whether this calendar is publicly accessible.	
S.8.2	Release calendar access	Access to the release calendar information.	Give a link or reference to the national release calendar (if any).	
S.8.3	User access	The policy for release of the data to users, the scope of dissemination, how users are informed that the data are being released, and whether the policy determines the dissemination of statistical data to all users.	Describe the general data release policy of the organisation. Describe the national release policy applied to the outputs of the process being reported, highlighting any deviations from the general policy. Note that the effect of not having a release calendar, or whether releases have been in accordance with a release calendar, is reported in S.14.2.	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.9	**Frequency of dissemination**	The time interval at which the statistics are disseminated over a given time period.	State the frequency with which the data are disseminated on national level, e.g. monthly, quarterly, yearly.	
S.10	**Accessibility and clarity**	The conditions and modalities by which users can access, use and interpret data.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.10.1	News release	Regular or ad-hoc press releases linked to the data.	List any regular or ad-hoc national press releases linked to the data over the past year.	
S.10.2	Publications	Regular or ad-hoc publications in which the data are made available to the public.	List the titles of any national publications, including publisher, year, and links to on-line documents (if available). Provide number of subscriptions/purchases of each of the key paper reports.	
S.10.3	On-line database	Information about on-line databases in which the disseminated data can be accessed.	Provide the domain name and link to the on-line database (if any) on national level. Provide number of accesses to on-line databases.	
S.10.4	Micro-data access	Information on whether micro-data are also disseminated.	State whether the data are accessible on national level in micro-data form, e.g. for researchers. If so, cross reference the micro-data confidentiality rules in S.7.	
S.10.5	Other	References to the most important other data dissemination done.	Describe any other important national dissemination mechanisms, for example policy papers, within outputs produced by other statistical processes. Summarise the accessibility and clarity of the data associated with the various dissemination formats, and the effects of pricing policies and confidentiality provisions. Describe dissemination of data to Eurostat and other international organisations, and internal dissemination.	
S.10.6	Documentation on methodology	Descriptive text and references to methodological documents available.	List national reference metadata files, methodological papers, summary documents and handbooks relevant to the statistical process. For each item provide the title, publisher, year and link to on-line version (if any).	
S.10.7	Quality documentation	Documentation on procedures applied for quality management and quality assessment.	List relevant national quality related documents, for example, other quality reports, studies. Cross reference to descriptions of quality procedures in other chapters, especially S.13.	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.11	**Quality management**	Systems and frameworks in place within an organisation to manage the quality of statistical products and processes.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.11.1	Quality assurance	All systematic activities implemented that can be demonstrated to provide confidence that the processes will fulfil the requirements for the statistical output.	Describe the national procedures (such as use of a general quality management system based on EFQM or ISO 9000 series) to promote general quality management principles in the organisation. Describe the national quality assurance framework used to implement statistical quality principles. Describe the national quality assurance procedures specifically applied to the statistical process for which the report is being prepared, for example training courses, benchmarking, assessments, and use of best practices. Include descriptions of all forms of quality assessment procedures (self-assessment, peer review, compliance monitoring, audit) and when they most recently took place. Describe any ongoing or planned improvements in quality assurance procedures.	
S.11.2	Quality assessment	Overall assessment of data quality, based on standard quality criteria.	Summarise the results of the most recent national quality assessments and cross reference to the chapters in the report where the results are presented in more detail.	
S.12	**Relevance**	The degree to which statistical information meet current and potential needs of the users.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.12.1	User needs	Description of users and their respective needs with respect to the statistical data.	Provide (for the national level): – a classification of users, also indicating their relative importance; – an indication of the uses for which users want the statistical outputs; – an assessment of the key outputs desired by different categories of users and any shortcomings in outputs for important users; – information on unmet user needs and any plans to satisfy them in the future; and – details regarding those quality components which do not meet user requirements.	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.12.2	User satisfaction	Measures to determine user satisfaction.	Describe how, and how often, the views and opinions of the users are collected on national level, for example by user satisfaction surveys or other user consultations. State how often such investigations are conducted and when the most recent took place. Present the key results from the recent investigations. Present view of user satisfaction over time, in the form of a user satisfaction index if available.	
S.12.3	Completeness and R1. Data completeness - rate for U	The extent to which all statistics that are needed are available. For R1: The ratio of the number of data cells provided to the number of data cells required by a regulation/ guideline.	Provide qualitative information on the extent to which content requirements in relevant legislation, regulations and guidelines are met. Where such requirements are not fully met, reasons for this should be provided. Provide information on the extent to which user needs related to content are satisfied.	
S.13	**Accuracy and reliability**	Accuracy of data is the closeness of computations or estimates to the exact or true values that the statistics were intended to measure. Reliability of the data, defined as the closeness of the initial estimated value to the subsequent estimated value.	Information relating to accuracy is provided by reporting on S.13 sub-concepts. Information on reliability is reported in S.17 Data Revision.	
S.13.1	Overall accuracy	Assessment of accuracy, linked to a certain data set or domain, which is summarising the various components.	Describe the main sources of random and systematic errors in the statistical outputs and provide a summary assessment of all errors with special focus on the impact on key estimates. The bias assessment can be in quantitative or qualitative terms, or both, and may be expressed as bias risk. It should reflect the producer's best current understanding (sign and order of magnitude) and include actions taken to reduce bias.	
S.13.2	Sampling error and A1. Sampling error - indicators for U	That part of the difference between a population value and an estimate thereof, derived from a random sample, which is due to the fact that only a subset of the population is enumerated. For A1: Measures of the random variation of an estimator due to sampling, at a level of detail appropriate for user reports.	Not applicable	Not applicable.

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.13.3	Non-sampling error and A4. *Unit non-response - ratefor U* and A5. *Item non-response - rate for U*	Error in survey estimates which cannot be attributed to sampling fluctuations. For A4: The ratio of the number of units with no information or not usable information to the total number of in-scope (eligible) units, at a level of detail appropriate for a user report. For A5: The ratio of the in-scope (eligible) units that have not responded to a particular item and the in-scope units that are required to respond to that particular item, at a level of detail appropriate for a user report.	Not applicable	Not applicable.
S.14	**Timeliness and punctuality**	(Defined by its sub-concepts)	Information relating to this concept is provided by reporting on its sub-concepts.	
S.14.1	Timeliness and *TP2. Time lag - final results for U*	Timeliness: Length of time between data availability and the event or phenomenon the data describe. For TP2: the number of days (or weeks or months) from the last day of the reference period to the day of publication of final results.	Outline the reasons for the time lag. Outline efforts to reduce time lag in future.	
S.14.2	Punctuality and *TP3. Punctuality - delivery and publication for U*	Time lag between the actual delivery of the data and the target date when it should have been delivered. For TP3: The percentage of release delivered on time.	Report only for annual or more frequent releases. If a release schedule was made available to users; – provide TP3 (user formula), i.e., the percentage of releases delivered on time, based on scheduled release dates, over a specified period and/or set of outputs. – in the event of any non-punctual releases, explain the reasons and outline efforts to improve punctuality. In the absence of a release schedule, explain why there is no schedule and indicate what efforts will be made to make one available in the future.	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.15	**Coherence and comparability**	Adequacy of statistics to be reliably combined in different ways and for various uses and the extent to which differences between statistics can be attributed to differences between the true values of the statistical characteristics.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.15.1	Comparability - geographical	The extent to which statistics are comparable between geographical areas.	Describe any problems of comparability between regions of the country. The reasons for the problems should be described and as well an assessment (preferably quantitative) of the possible effect on the output values. Give information on discrepancies from the ESS/ international concepts, definitions, with reference to other chapters for more details.	
S.15.2	Comparability - over time and *CC2. Length of comparable time series for U*	The extent to which statistics are comparable or reconcilable over time. For CC2: The number of reference periods in time series from last break.	Provide information on possible limitations in the use of data for comparisons over time. Distinguish three broad possibilities: 1. There have been no changes, in which case this should be reported. 2. There have been some changes but not enough to warrant the designation of a break in series. 3. There have been sufficient changes to warrant the designation of a break in series. In the second and third cases, the changes and their probable impacts should be reported. Text could be: See Annex at the bottom of the page for potential breaks in time series for each variable. OR Data are fully comparable over time.	
S.15.3	Coherence- cross domain	The extent to which statistics are reconcilable with those obtained through other data sources or statistical domains.	An analysis of incoherence should be provided, where this is an issue of importance. Reporting under 15.3 is for coherence problems that are not reported under 15.4.	
S.15.4	Coherence - internal	The extent to which statistics are consistent within a given data set.	Each set of outputs should be internally consistent. if statistical outputs within the data set in question are not consistent, any lack of coherence in the output of the statistical process itself should be stated as well as a brief explanation of the reasons for publishing such results.	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.16	**Cost and burden**	Cost associated with the collection and production of a statistical product and burden on respondents.	Cost: – Provide annual operational costs of the process, with breakdown by major cost component. – Describe recent efforts to improve efficiency and comment on the extent to which information and communication technology is used. European level: – Describe recent initiatives and efforts to improve efficiency at the European level. Burden – Provide an estimate of the respondent burden imposed by the process. – Describe all the means taken to minimise burden.	
S.17	**Data revision**	Any change in a value of a statistic released to the public.	Information relating to this concept is provided by reporting on its sub-concepts.	
S.17.1	Data revision - policy	Policy aimed at ensuring the transparency of disseminated data, whereby preliminary data are compiled that are later revised.	Describe the data revision policy applicable to data output from the statistical process being reported (both revisions on national level and those sent to Eurostat). In so far as they are relevant to the process being reported, summarise the general procedures for treatment of planned revisions, benchmark revisions, unplanned revisions, and revisions due to conceptual and/or methodological changes.	
S.17.2	Data revision - practice and A6. Data revision - average size for U	Information on the data revision practice For A6: The average over a time period of the revisions of a key item, for user report.	If there are no revisions to report for the statistical process that is the subject of the report, state this and close the reporting of this concept. Included are revisions on national level and those sent to Eurostat. Report the reasons and schedule for planned revisions (if any).	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.18	**Statistical processing**	(Defined by its sub-concepts)	Information relating to this concept is provided by reporting on its sub-concepts.	
S.18.1	Source data	Characteristics and components of the raw statistical data used for compiling statistical aggregates.	Indicate if the data are based on a survey, administrative data process, multisource process, or macro-aggregates. In the event of multisource or macro-aggregates, describe each data source and indicate how they are combined. For each survey dataset, summarise the sample design, cross referencing the descriptions of the target and survey populations, presented in S.03.6. For each administrative dataset, summarise the source, its primary purpose, and the most important data items acquired. A pre-filled text is proposed; it can be revised or removed.	Source data for the different variables are given in the Annex at the bottom of the page.
S.18.2	Frequency of data collection	Frequency with which the source data are collected.	Indicate the frequency of data collection (e.g. monthly, quarterly, annually, or continuous). A pre-filled text is proposed; it can be revised or removed.	Annual.
S.18.3	Data collection	Systematic process of gathering data for official statistics.	For each survey data source: – describe the method(s) used to gather data from respondents; – annex or hyperlink the questionnaires(s). – For each administrative data source: – describe the acquisition process and how it was tested. For all sources: – describe the types of checks applied at the time of data entry.	
S.18.4	Data validation	Process of monitoring the results of data compilation and ensuring the quality of statistical results.	Describe the procedures for checking and validating the source data and how the results are monitored and used. Describe the procedures for validating the aggregate output data (statistics) after compilation, including checking coverage and response rates, and comparing with data for previous cycles and with expectations. List other output datasets to which the data relate and outline the procedures for identifying inconsistencies between the output data and these other datasets.	

Concept Number	Concept Name	Description	Guidelines	Pre-filled Text
S.18.5	Data compilation	Operations performed on data to derive new information according to a given set of rules.	Describe the procedures for imputation, the most common reasons for imputation and imputation rates within each of the main strata. Describe the likely impact of imputation. Describe the procedures to derive new variables and to calculate aggregates and complex statistics. Describe the procedures for adjustment for non-response and the corrections to the design weights to account for differences in response rates. Describe the calculation of design weights, including calibration (if used). Describe the procedures for combining input data from different sources.	
S.18.6	Adjustment	The set of procedures employed to modify statistical data to enable it to conform to national or international standards or to address data quality differences when compiling specific data sets.	Summarise seasonal adjustment procedures at a level of detail appropriate for a user report. Outline any other macro-level adjustment procedures applied to compiled estimates that are used to improve conformance with standards and/or to address quality concerns.	
S.19	**Comment**	Supplementary descriptive text which can be attached to data or metadata.	Provide any information: – that is pertinent to the report but does not fit under any of the other concepts; or – to repeat key issues; or – to make reference to annexes that might be attached to the report.	

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Healthcare non-expenditure statistics manual and guidelines for completing the Joint questionnaire on non-monetary healthcare statistics

The purpose of this publication is to support Member States in completing the OECD, Eurostat, WHO Europe Joint Questionnaire on Non-Monetary Healthcare Statistics (JQNMHC) in line with Commission Regulation (EU) 2022/2294. It provides an outline of the transmission and dissemination processes, data structure and validation rules as well as descriptions of the definitions to be used by Eurostat countries completing the JQNMHC.

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