# Healthcare Quality and Outcomes (HCQO) Data Collection Guidelines 2024-25

Organisation for Economic Cooperation and Development

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# 1 General notes on indicator calculation

## 1.1. Linked vs unlinked data

1. Several indicators can be calculated using either linked or unlinked data.

2. Linked data refer to data that are linked across different data sources by using a unique person identifier to identify data entries concerning the same individual. This covers information available in any data source, such as mortality register, prescribing database, or healthcare consumption data from other healthcare providers.

3. Unlinked data refer to the pooled data coming from individual sources (e.g. hospitals). These data are not linked to other data entries available from other providers (e.g. other hospitals) or other data sources (e.g. mortality register).

4. Work within the HCQO Working Party has shown that indicators based on linked data are more robust and comparable across countries. The Working Party has supported a move toward greater use of linked indicators and has included this as part of the HCQO guiding principles. Countries are encouraged to provide data for indicators using linked data as well as unlinked data where possible.

## 1.2. Diagnostic Codes

5. Indicator specification found in this document provide relevant diagnostic codes based on ICD-10-CM and ICD-10, 2019 (WHO version) codes. Many countries do not use the original version of these codes but a modified version according to country-specific needs and context. Before beginning indicator calculations, these countries need to convert diagnostics codes provided to those used locally.

6. Table 1.1 shows that one 3-digit WHO code for essential (primary) hypertension corresponds to two 4-digit codes in Canada, one 5-digit code in Germany. To calculate the numerator for the indicator essential (primary) hypertension, all country specific subgroups of the listed WHO code I10 must be taken into account.

### Table 1.1. Example of country-specific adaptations of ICD-10 codes

| ICD-10 WHO (2019) | | ICD-10-CA (Canada, 2022) | ICD-10-GM (Germany 2022), a 5th digit has to be used to specify the presence of a hypertensive crisis or not (6 subgroups). |
|---|---|---|---|
| **I10** Essential (primary) hypertension | **I10.0** | Benign Hypertension | |
| | **I10.1** | Malignant Hypertension | |
| | **I10.9** | | Essential Hypertension, unspecified |

Source: OECD.

## 1.3. Procedure Codes

7. Several HCQO indicators use procedure codes for calculation. The procedure codes from the ICD-10-PCS and/or International Classification of Health Interventions (ICHI) for each of the relevant indicators have been specified to assist countries in adopting corresponding procedures from their classifications and performing a precise calculation of the indicators.

# 2 HCQO Indicator Definitions

Table 2.1. includes the list of indicators collected through 2024-2025 data collection and their measures (variable names) included in the OECD Health Statistics database.

## Table 2.1. List of indicators for 2025 database

| Indicator sets | Indicators | Measure | Standardisation | Unit of measure |
|---|---|---|---|---|
| Primary Care - Avoidable hospital admissions (**AA**) | Asthma hospital admission | ADMRASTH | OECD 2015 | Per 100 000 |
| | Chronic Obstructive Pulmonary Diseases (COPD) hospital admission | ADMRCOPD | OECD 2015 | Per 100 000 |
| | Congestive Heart Failure (CHF) hospital admission | ADMRCHFL | OECD 2015 | Per 100 000 |
| | Diabetes hospital admission | ADMRDBUC | OECD 2015 | Per 100 000 |
| | Diabetes major lower extremity amputation using unlinked data | ADMRDMAI | OECD 2015 | Per 100 000 |
| | Diabetes minor lower extremity amputation using unlinked data | ADMRDMAO | OECD 2015 | Per 100 000 |
| Primary Care – Prescribing (**PR**) | Adequate use of cholesterol lowering treatment in people with diabetes (DDDs/Days) | PRDMPCDD | CRUDE | Per 100 |
| | First choice antihypertensives for people with diabetes (DDDs/Days) | PRDMPADD | CRUDE | Per 100 |
| | Long-term use of benzodiazepines and related drugs in people aged 65 years and over ( ≥ 365 DDDs/Days per year) | PRBZOZDD | CRUDE | Per 1 000 |
| | Use of long-acting benzodiazepines in people aged 65 years and over | PRBZLAOP | CRUDE | Per 1 000 |
| | Volume of cephalosporines and quinolones as a proportion of all systemic antibiotics prescribed | PRABCQDD | CRUDE | Per 100 |
| | Overall volume of antibiotics for systemic use prescribed (DDDs/Days/Users) | PRABOUDD | CRUDE | Per 1 000 per day |
| | Overall volume of opioids prescribed (DDDs/Days/Users) | PROPOUDD | CRUDE | Per 1 000 per day |
| | Proportion of people 65 and over prescribed antipsychotics | PRPPANTI | OECD 2015 | Per 1 000 |
| | Proportion of people 65 and over prescribed antipsychotics among those without a mental health diagnosis causing psychotic symptoms | PRPPNPSY | OECD 2015 | Per 1 000 |
| Acute Care (**AC**) | AMI 30 day mortality using linked data | MORTAMIO | Disease 2013 | Per 100 |
| | AMI 30 day mortality using unlinked data | MORTAMII | Disease 2013 | Per 100 |
| | Haemorrhagic stroke 30 day mortality using linked data | MORTHSTO | Disease 2013 | Per 100 |
| | Haemorrhagic stroke 30 day mortality using unlinked data | MORTHSTI | Disease 2013 | Per 100 |
| | Ischaemic stroke 30 day mortality using linked data | MORTISTO | Disease 2013 | Per 100 |
| | Ischaemic stroke 30 day mortality using unlinked data | MORTISTI | Disease 2013 | Per 100 |
| | Hip fracture surgery initiated within 2 days after admission to the hospital | IHWTHIPS | CRUDE | *Per 100* |
| Integrated care (**IC**) | Ischemic Stroke – All-cause hospital readmissions within 365 days after discharge | ICISCACR | Disease 2018 | Per 100 |
| | Ischemic Stroke – Disease-specific hospital readmissions within 365 days after discharge | ICISCDSR | Disease 2018 | Per 100 |
| | Ischemic Stroke – All-cause mortality within 365 days after discharge | ICISCACM | Disease 2018 | Per 100 |
| | Ischemic Stroke – Mortality or all-cause readmission within 365 days after discharge | ICISCMACR | Disease 2018 | Per 100 |
| | Ischemic Stroke – Mortality or disease-specific readmission within 365 days after discharge | ICISCMDSR | Disease 2018 | Per 100 |

| Indicator sets | Indicators | Measure | Standardisation | Unit of measure |
|---|---|---|---|---|
| | CHF – All-cause hospital readmissions within 365 days after discharge | ICCHFACR | Disease 2018 | Per 100 |
| | CHF – Disease-specific hospital readmissions within 365 days after discharge | ICCHFDSR | Disease 2018 | Per 100 |
| | CHF – All-cause mortality within 365 days after discharge | ICCHFACM | Disease 2018 | Per 100 |
| | CHF – Mortality or all-cause readmission within 365 days after discharge | ICCHFMACR | Disease 2018 | Per 100 |
| | CHF – Mortality or disease-specific readmission within 365 days after discharge | ICCHFMDSR | Disease 2018 | Per 100 |
| | CHF – Case fatality within 30 days of the admission date | ICCHFCF | Disease 2018 | Per 100 |
| | Prescribed antihypertensive medicines between 12 and 18 months after ischaemic stroke | ICISCPHT | CRUDE | Per 100 |
| | Prescribed antithrombotics between 12 and 18 months after ischaemic stroke. | ICISCPTR | CRUDE | Per 100 |
| Mental Health Care **(MH)** | Suicide within 1 year after discharge among patients diagnosed with a mental disorder | MORTSUMD | OECD 2015 | Per 100 |
| | Suicide within 30 days after discharge among patients diagnosed with a mental disorder | MORTSUMS | OECD 2015 | Per 100 |
| | Excess mortality in people diagnosed with schizophrenia | EXCESCHI | OECD 2015* | Ratio |
| | Excess mortality in people diagnosed with bipolar disorder | EXCEBIPO | OECD 2015* | Ratio |
| Patient Safety (**PS**) | Postoperative pulmonary embolism (PE) following hip and knee replacement, identified during the surgical hospital admission (unlinked data) | POSTPESP | CRUDE | Per 100 000 |
| | Postoperative pulmonary embolism (PE) following hip and knee replacement, identified within 30 days of surgical hospital admission (linked data) | POSTPESW | CRUDE | Per 100 000 |
| | Postoperative deep vein thrombosis (DVT) following hip and knee replacement, identified during the surgical hospital admission (unlinked data) | POSTDVSP | CRUDE | Per 100 000 |
| | Postoperative deep vein thrombosis (DVT) following hip and knee replacement, within 30 days of surgical hospital admission (linked data) | POSTDVSW | CRUDE | Per 100 000 |
| | Post-operative sepsis following abdominopelvic surgery, identified during the surgical hospital admission (unlinked data) | POSTSESP | CRUDE | Per 100 000 |
| | Post-operative sepsis following abdominopelvic surgery, identified within 30 days of surgical hospital admission (linked data) | POSTSESW | CRUDE | Per 100 000 |
| | Obstetric trauma vaginal delivery with instrument | OBSTVDWI | CRUDE | Per 100 |
| | Obstetric trauma vaginal delivery without instrument | OBSTVDWO | CRUDE | Per 100 |
| Patient Experiences (**PE**) | Consultation skipped due to costs | COSKCOST | - | Per 100 |
| | Medical tests, treatment or follow-up skipped due to costs | MTSKCOST | - | Per 100 |
| | Prescribed medicines skipped due to costs | PMSKCOST | - | Per 100 |
| | Doctor spending enough time with patients during the consultation | HPRTIPAT | - | Per 100 |
| | Regular doctor spending enough time with patients during the consultation | RHPTIPAT | - | Per 100 |
| | Doctor providing easy-to-understand explanations | HPREXCLA | - | Per 100 |
| | Regular doctor providing easy-to-understand explanations | RHPEXCLA | - | Per 100 |
| | Doctor giving opportunity to ask questions or raise concerns | HPRGOASK | - | Per 100 |
| | Regular doctor giving opportunity to ask questions or raise concerns | RHPGOASK | - | Per 100 |
| | Doctor involving patients in decisions about care or treatment | HPRIPDEC | - | Per 100 |
| | Regular doctor involving patients in decisions about care or treatment | RHPIPDEC | - | Per 100 |
| Mental Health PREMs (**MP**) | Care providers treating mental health patients with courtesy and respect (inpatient care) | MPIPRESP | - | Per 100 |
| | Care providers treating mental health patients with courtesy and respect (community-based care) | MPCBRESP | - | Per 100 |
| | Care providers spending enough time with mental health patients (inpatient care) | MPIPTIME | - | Per 100 |
| | Care providers spending enough time with mental health patients | MPCBTIME | - | Per 100 |

| Indicator sets | Indicators | Measure | Standardisation | Unit of measure |
|---|---|---|---|---|
| | (community-based care) | | | |
| | Care providers providing easy-to-understand explanations to mental health patients (inpatient care) | MPIPEXPL | - | Per 100 |
| | Care providers providing easy-to-understand explanations to mental health patients (community-based care) | MPCBEXPL | - | Per 100 |
| | Care providers involving mental health patient in decisions about care and treatment (inpatient care) | MPIPINVO | - | Per 100 |
| | Care providers involving mental health patient in decisions about care and treatment (community-based care) | MPCBINVO | - | Per 100 |

## PRIMARY CARE - AVOIDABLE HOSPITAL ADMISSION (AA) INDICATORS

Indicators in the Avoidable Admission indicator set include:

- Asthma hospital admission (ADMRASTH)
- Chronic obstructive pulmonary disease (COPD) hospital admission (ADMRCOPD)
- Congestive heart failure (CHF) hospital admission (ADMRCHFL)
- Diabetes hospital admission (ADMRDBUC)
- Diabetes major lower extremity amputation: using unlinked data (ADMRDMAI)
- Diabetes minor lower extremity amputation: using unlinked data (ADMRDMAO)

### NOTES

Countries that have multiple admissions within one hospitalisation should build a variable referring to a single hospital episode (see 8. Glossary) and use the first principal diagnosis from the episode to select cases to calculate avoidable admission indicators.

### *Asthma hospital admission (ADMRASTH)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to measure the extent to which primary care systems have effectively avoided acute deterioration resulting in hospital admission in people living with asthma since long-term conditions such as asthma should normally be well managed in primary care.

**Coverage**: Population aged 15 and older (5-year age groups). All *acute care hospitals*, including public and private hospitals that provide inpatient care.

**Numerato**r: All non-maternal/non-neonatal hospital *admissions* with a *principal diagnosis* code of asthma (see Asthma diagnosis codes below) in a specified year.

**Exclude**:

- Cases where the patient died in hospital during the admission.
- Cases resulting from a transfer from another acute care institution (*transfers-in*).
- Obstetric hospitalisations - Cases assigned to an obstetric DRG, e.g. from MDC 14 or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 3. Glossary "Obstetric hospitalisations" in this document for details.
- Cases with cystic fibrosis and anomalies of the respiratory system diagnosis code in any field (see ICD codes below).
- Cases that are *same day/day only admissions*.

**Denominato**r: Population count.

**Asthma diagnosis codes:**

| ICD-9-CM | | ICD-10-WHO | |
|---|---|---|---|
| 49300 | EXTRINSIC ASTHMA NOS | J450 | PREDOMINANTLY ALLERGIC ASTHMA |
| 49301 | EXT ASTHMA W STATUS ASH | J451 | NONALLERGIC ASTHMA |
| 49302 | EXT ASTHMA W ACUTE EXAC | J458 | MIXED ASTHMA |
| 49310 | INT ASTHMA W/O STAT ASTH | J459 | ASTHMA, UNSPECIFIED |
| 49311 | INTRINSIC ASTHMA NOS | J46 | STATUS ASTHMATICUS |
| 49312 | INT ASTHMA W ACUTE EXAC | | |
| 49320 | CH OB ASTH NOS | | |
| 49321 | CH OB ASTHMA W STAT ASTH | | |
| 49322 | CH OBS ASTH W ACUTE EXAC | | |
| 49381 | EXERCSE IND BRONCHOSPASM | | |
| 49382 | COUGH VARIANT ASTHMA | | |
| 49390 | ASTHMA NOS | | |
| 49391 | ASTHMA W STATUS ASTHMAT | | |
| 49392 | ASTHMA W ACUTE EXAC | | |

**Exclude diagnosis codes cystic fibrosis and anomalies of the respiratory system:**

| ICD-9-CM | | ICD-10-WHO | |
|---|---|---|---|
| 27700 | CYSTIC FIBROS W/O ILEUS | E840 | CYSTIC FIBROSIS WITH PULMONARY MANIFESTATIONS |
| 27701 | CYSTIC FIBROS W ILEUS | E841 | CYSTIC FIBROSIS WITH INTESTINAL MANIFESTATIONS |
| 27702 | CYSTIC FIBROS W PUL MAN | E848 | CYSTIC FIBROSIS WITH OTHER MANIFESTATIONS |
| 27703 | CYSTIC FIBROSIS W GI MAN | E849 | CYSTIC FIBROSIS, UNSPECIFIED |
| 27709 | CYSTIC FIBROSIS NEC | P27.0 | WILSON-MIKITY SYNDROME |
| 74721 | ANOMALIES OF AORTIC ARCH | P27.1 | BRONCHOPULMONARY DYSPLASIA ORIGINATING IN THE PERINATAL PERIOD |
| 7483 | LARYNGOTRACH ANOMALY NEC | P27.8 | OTHER CHRONIC RESPIRATORY DISEASES ORIGINATING IN THE PERINATAL PERIOD |
| 7484 | CONGENITAL CYSTIC LUNG | P27.9 | UNSPECIFIED CHRONIC RESP DISEASE ORIGINATING IN THE PERINATAL PERIOD |
| 7485 | AGENESIS OF LUNG | Q25.4 | OTHER CONGENITAL MALFORMATIONS OF AORTA |
| 74860 | LUNG ANOMALY NOS | Q31.1 | CONGENITAL SUBGLOTTIC STENOSIS |
| 74861 | CONGEN BRONCHIECTASIS | Q31.2 | LARYNGEAL HYPOPLASIA |
| 74869 | LUNG ANOMALY NEC | Q31.3 | LARYNGOCELE |
| 7488 | RESPIRATORY ANOMALY NEC | Q31.5 | CONGENITAL LARYNGOMALACIA |
| 7489 | RESPIRATORY ANOMALY NOS | Q31.8 | OTHER CONGENITAL MALFORMATIONS OF LARYNX |
| 7503 | CONG ESOPH FISTULA/ATRES | Q31.9 | CONGENITAL MALFORMATION OF LARYNX, UNSPECIFIED |
| 7593 | SITUS INVERSUS | Q32.0 | CONGENITAL TRACHEOMALACIA |
| 7707 | PERINATAL CHR RESP DIS | Q32.1 | OTHER CONGENITAL MALFORMATIONS OF TRACHEA |
| | | Q32.2 | CONGENITAL BRONCHOMALACIA |
| | | Q32.3 | CONGENITAL STENOSIS OF BRONCHUS |
| | | Q32.4 | OTHER CONGENITAL MALFORMATIONS OF BRONCHUS |
| | | Q33.0 | CONGENITAL CYSTIC LUNG |
| | | Q33.1 | ACCESSORY LOBE OF LUNG |
| | | Q33.2 | SEQUESTRATION OF LUNG |
| | | Q33.3 | AGENESIS OF LUNG |
| | | Q33.4 | CONGENITAL BRONCHIECTASIS |
| | | Q33.5 | ECTOPIC TISSUE IN LUNG |
| | | Q33.6 | HYPOPLASIA AND DYSPLASIA OF LUNG |
| | | Q33.8 | OTHER CONGENITAL MALFORMATIONS OF LUNG |
| | | Q33.9 | CONGENITAL MALFORMATION OF LUNG, UNSPECIFIED |
| | | Q34.0 | ANOMALY OF PLEURA |
| | | Q34.1 | CONGENITAL CYST OF MEDIASTINUM |
| | | Q34.8 | OTHER SPECIFIED CONGENITAL MALFORMATIONS OF RESPIRATORY SYSTEM |
| | | Q34.9 | CONGENITAL MALFORMATION OF RESPIRATORY SYSTEM, UNSPECIFIED |
| | | Q39.0 | ATRESIA OF OESOPHAGUS WITHOUT FISTULA |
| | | Q39.1 | ATRESIA OF OESOPHAGUS WITH TRACHEO-OESOPHAGEAL FISTULA |
| | | Q39.2 | CONGENITAL TRACHEO-OESOPHAGEAL FISTULA WITHOUT ATRESIA |
| | | Q39.3 | CONGENITAL STENOSIS AND STRICTURE OF OESOPHAGUS |
| | | Q39.4 | OESOPHAGEAL WEB |
| | | Q39.8 | OTHER CONGENITAL MALFORMATIONS OF OESOPHAGUS |
| | | Q89.3 | SITUS INVERSUS |

### *Chronic obstructive* pulmonary disease (COPD) hospital admission (ADMRCOPD)

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to measure the extent to which primary care systems have effectively avoided acute deterioration resulting in hospital admission in people living with COPD since long-term conditions such as COPD should normally be well managed in primary care.

**Coverage**: Population aged 15 and older (5-year age groups). All *acute care hospitals*, including public and private hospitals that provide inpatient care.

**Numerator**: All non-maternal/non-neonatal hospital *admissions* with a *principal diagnosis* code of Chronic Obstructive Pulmonary Disease (See COPD diagnosis codes below) in a specified year.

**Exclude**:

- Cases where the patient died in hospital during the admission.
- Cases resulting from a transfer from another acute care institution (*transfers-in*).
- Obstetric hospitalisations - Cases assigned to an obstetric DRG, e.g. from MDC 14 or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 3. Glossary "Obstetric hospitalisations" in this document for details.
- Cases that are same day/day only admissions.

**Denominator**: Population count.

**COPD diagnosis codes:**

| ICD-9-CM | | ICD-10-WHO | |
|---|---|---|---|
| 490 | BRONCHITIS NOS* | J40 | BRONCHITIS* |
| 4660 | AC BRONCHITIS* | J410 | SIMPLE CHRONIC BRONCHITIS |
| 4910 | SIMPLE CHR BRONCHITIS | J411 | MUCOPURULENT CHRONIC BRONCHITIS |
| 4911 | MUCOPURUL CHR BRONCHITIS | J418 | MIXED SIMPLE AND MUCOPURULENT CHRONIC BRONCHITIS |
| 49120 | OBS CHR BRNC W/O ACT EXA | J42 | UNSPECIFIED CHRONIC BRONCHITIS |
| 49121 | OBS CHR BRNC W ACT EXA | J430 | MACLEOD'S SYNDROME |
| 4918 | CHRONIC BRONCHITIS NEC | J431 | PANLOBULAR EMPHYSEMA |
| 4919 | CHRONIC BRONCHITIS NOS | J432 | CENTRILOBULAR EMPHYSEMA |
| 4920 | EMPHYSEMATOUS BLEB | J438 | OTHER EMPHYSEMA |
| 4928 | EMPHYSEMA NEC | J439 | EMPHYSEMA, UNSPECIFIED |
| 494 | BRONCHIECTASIS | J440 | COPD WITH ACUTE LOWER RESPIRATORY INFECTION |
| 4940 | BRONCHIECTAS W/O AC EXAC | J441 | COPD WITH ACUTE EXACERBATION, UNSPECIFIED |
| 4941 | BRONCHIECTASIS W AC EXAC | J448 | OTHER SPECIFIED CHRONIC OBSTRUCTIVE PULMONARY DISEASE |
| 496 | CHR AIRWAY OBSTRUCT NEC | J449 | CHRONIC OBSTRUCTIVE PULMONARY DISEASE, UNSPECIFIED |
| | | J47 | BRONCHIECTASIS |
| * Qualifies only if accompanied by secondary diagnosis of 491.xx, 492.x, 494.x or 496 (i.e., any other code on this list). | | * Qualifies only if accompanied by secondary diagnosis of J41, J43, J44, J47 | |

### *Congestive heart failure (CHF) hospital admission (ADMRCHFL)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to measure the extent to which primary care systems have effectively avoided acute deterioration resulting in hospital admission in people living with CHF since long-term conditions such as CHF should normally be well managed in primary care.

**Coverage**: Population aged 15 and older (5-year age groups). All *acute care hospitals*, including public and private hospitals that provide inpatient care.

**Numerator**: All non-maternal/non-neonatal hospital *admissions* with a *principal diagnosis* code of Congestive Heart Failure (See CHF diagnosis codes below) in a specified year.

**Exclude**:

- Cases where the patient died in hospital during the admission.
- Cases resulting from a transfer from another acute care institution (*transfers-in*).
- Cases with cardiac procedure codes in any field – Refer to Annex A (Excel sheet - HCQO 2022_23 Data Collection_Annex A-E).
- Obstetric hospitalisations - Cases assigned to an obstetric DRG, e.g. from MDC 14 or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 3. Glossary "Obstetric hospitalisations" in this document for details.
- Cases that are *same day/day only admissions*.

**Denominator**: Population count.

**CHF diagnosis codes**:

| ICD-9-CM | ICD-10-WHO |
|---|---|
| 39891 Rheumatic Heart Failure<br>40201 Mal Hypert Hrt Dis W Chf<br>40211 Benign Hyp Hrt Dis W Chf<br>40291 Hyperten Heart Dis W Chf<br>40401 Mal Hyper Hrt/Ren W Chf<br>40403 Mal Hyp Hrt/Ren W Chf/Rf<br>40411 Ben Hyper Hrt/Ren W Chf<br>40413 Ben Hyp Hrt/Ren W Chf/Rf<br>40491 Hyper Hrt/Ren Nos W Chf<br>40493 Hyp Ht/Ren Nos W Chf/Rf<br>4280 Congestive Heart Failure<br>4281 Left Heart Failure<br>42820 Systolic Hrt Failure Nos<br>42821 Ac Systolic Hrt Failure<br>42822 Chr Systolic Hrt Failure<br>42823 Ac On Chr Syst Hrt Fail<br>42830 Diastolc Hrt Failure Nos<br>42831 Ac Diastolic Hrt Failure<br>42832 Chr Diastolic Hrt Fail<br>42833 Ac On Chr Diast Hrt Fail<br>42840 Syst/Diast Hrt Fail Nos<br>42841 Ac Syst/Diastol Hrt Fail<br>42842 Chr Syst/Diastl Hrt Fail<br>42843 Ac/Chr Syst/Dia Hrt Fail<br>4289 Heart Failure Nos | I11.0 Hypertensive heart disease with (congestive) heart failure<br>I13.0 Hypertensive heart and renal disease with (congestive) heart failure<br>I13.2 Hypertensive heart and renal disease with both (congestive) heart failure and renal failure<br>I50.0 Congestive heart failure<br>I50.1 Left ventricular failure<br>I50.9 Heart failure, unspecified |

### *Diabetes hospital admission (ADMRDBUC)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to measure the extent to which primary care systems have effectively avoided acute deterioration resulting in hospital admission in people living with diabetes since long-term conditions such as diabetes should normally be well managed in primary care.

**Coverage**: Population aged 15 and older (5-year age groups). All *acute care hospitals*, including public and private hospitals that provide inpatient care.

**Numerator**: All non-maternal/non-neonatal hospital *admissions* with a *principal diagnosis* code of diabetes (see Diabetes diagnosis codes below) in a specified year.

**Exclude**:

- Cases where the patient died in hospital during the admission.
- Cases resulting from a transfer from another acute care institution (*transfers-in*).
- Obstetric hospitalisations - Cases assigned to an obstetric DRG, e.g. from MDC 14 or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 3. Glossary "Obstetric hospitalisations" in this document for details.
- Cases that are *same day/day only admissions*.

**Denominator**: Population count.

**Diabetes diagnosis codes**

| ICD-9-CM | | ICD-10-WHO | |
|---|---|---|---|
| 25000 | DMII WO CMP NT ST UNCNTR | E10.0 | INSULIN-DEPENDENT DIABETES MELLITUS WITH COMA |
| 25001 | DMI WO CMP NT ST UNCNTRL | | |
| 25002 | DMII WO CMP UNCNTRLD | | |
| 25003 | DMI WO CMP UNCNTRLD | | |
| 25010 | DMII KETO NT ST UNCNTRLD | E10.1 | INSULIN-DEPENDENT DIABETES MELLITUS WITH KETOACIDOSIS |
| 25011 | DMI KETO NT ST UNCNTRLD | | |
| 25012 | DMII KETOACD UNCONTROLD | E10.2 | INSULIN-DEPENDENT DIABETES MELLITUS WITH RENAL COMPLICATIONS |
| 25013 | DMI KETOACD UNCONTROLD | | |
| 25020 | DMII HPRSM NT ST UNCNTRL | E10.3 | INSULIN-DEPENDENT DIABETES MELLITUS WITH OPHTHALMIC COMPLICATIONS |
| 25021 | DMI HPRSM NT ST UNCNTRLD | | |
| 25022 | DMII HPROSMLR UNCONTROLD | E10.4 | INSULIN-DEPENDENT DIABETES MELLITUS WITH NEUROLOGICAL COMPLICATIONS |
| 25023 | DMI HPROSMLR UNCONTROLD | | |
| 25030 | DMII O CM NT ST UNCNTRLD | E10.5 | INSULIN-DEPENDENT DM WITH PERIPHERAL CIRCULATORY COMPLICATIONS |
| 25031 | DMI O CM NT ST UNCNTRL | | |
| 25032 | DMII OTH COMA UNCONTROLD | E10.6 | INSULIN-DEPENDENT DM WITH OTHER SPECIFIED COMPLICATIONS |
| 25033 | DMI OTH COMA UNCONTROLD | | |
| 25040 | DMII RENL NT ST UNCNTRLD | E10.7 | INSULIN-DEPENDENT DIABETES MELLITUS WITH MULTIPLE COMPLICATIONS |
| 25041 | DMI RENL NT ST UNCNTRLD | | |
| 25042 | DMII RENAL UNCNTRLD | E10.8 | INSULIN-DEPENDENT DIABETES MELLITUS WITH UNSPECIFIED COMPLICATIONS |
| 25043 | DMI RENAL UNCNTRLD | | |
| 25050 | DMII OPHTH NT ST UNCNTRL | E10.9 | INSULIN-DEPENDENT DIABETES MELLITUS WITHOUT COMPLICATIONS |
| 25051 | DMI OPHTH NT ST UNCNTRLD | | |
| 25052 | DMII OPHTH UNCNTRLD | E11.0 | NON-INSULIN-DEPENDENT DIABETES MELLITUS WITH COMA |
| 25053 | DMI OPHTH UNCNTRLD | | |
| 25060 | DMII NEURO NT ST UNCNTRL | E11.1 | NON-INSULIN-DEPENDENT DIABETES MELLITUS |

| | |
|---|---|
| 25061 | DMI NEURO NT ST UNCNTRLD |
| 25062 | DMII NEURO UNCNTRLD |
| 25063 | DMI NEURO UNCNTRLD |
| 25070 | DMII CIRC NT ST UNCNTRLD |
| 25071 | DMI CIRC NT ST UNCNTRLD |
| 25072 | DMII CIRC UNCNTRLD |
| 25073 | DMI CIRC UNCNTRLD |
| 25080 | DMII OTH NT ST UNCNTRLD |
| 25081 | DMI OTH NT ST UNCNTRLD |
| 25082 | DMII OTH UNCNTRLD |
| 25083 | DMI OTH UNCNTRLD |
| 25090 | DMII UNSPF NT ST UNCNTRL |
| 25091 | DMI UNSPF NT ST UNCNTRLD |
| 25092 | DMII UNSPF UNCNTRLD |
| 25093 | DMI UNSPF UNCNTRLD |

| | |
|---|---|
| | WITH KETOACIDOSIS |
| E11.2 | NON-INSULIN-DEPENDENT DIABETES MELLITUS WITH RENAL COMPLICATIONS |
| E11.3 | NON-INSULIN-DEPENDENT DMWITH OPHTHALMIC COMPLICATIONS |
| E11.4 | NON-INSULIN-DEPENDENT DM WITH NEUROLOGICAL COMPLICATIONS |
| E11.5 | NON-INSULIN-DEPENDENT DM WITH PERIPHERAL CIRCULATORY COMPLICATIONS |
| E11.6 | NON-INSULIN-DEPENDENT DM WITH OTHER SPECIFIED COMPLICATIONS |
| E11.7 | NON-INSULIN-DEPENDENT DIABETES MELLITUS WITH MULTIPLE COMPLICATIONS |
| E11.8 | NON-INSULIN-DEPENDENT DM WITH UNSPECIFIED COMPLICATIONS |
| E11.9 | NON-INSULIN-DEPENDENT DIABETES MELLITUS WITHOUT COMPLICATIONS |
| E13.0 | OTHER SPECIFIED DIABETES MELLITUS WITH COMA |
| E13.1 | OTHER SPECIFIED DIABETES MELLITUS WITH KETOACIDOSIS |
| E13.2 | OTHER SPECIFIED DIABETES MELLITUS WITH RENAL COMPLICATIONS |
| E13.3 | OTHER SPECIFIED DIABETES MELLITUS WITH OPHTHALMIC COMPLICATIONS |
| E13.4 | OTHER SPECIFIED DIABETES MELLITUS WITH NEUROLOGICAL COMPLICATIONS |
| E13.5 | OTHER SPECIFIED DM WITH PERIPHERAL CIRCULATORY COMPLICATIONS |
| E13.6 | OTHER SPECIFIED DIABETES MELLITUS WITH OTHER SPECIFIED COMPLICATIONS |
| E13.7 | OTHER SPECIFIED DIABETES MELLITUS WITH MULTIPLE COMPLICATIONS |
| E13.8 | OTHER SPECIFIED DIABETES MELLITUS WITH UNSPECIFIED COMPLICATIONS |
| E13.9 | OTHER SPECIFIED DIABETES MELLITUS WITHOUT COMPLICATIONS |
| E14.0 | UNSPECIFIED DIABETES MELLITUS WITH COMA |
| E14.1 | UNSPECIFIED DIABETES MELLITUS WITH KETOACIDOSIS |
| E14.2 | UNSPECIFIED DIABETES MELLITUS WITH RENAL COMPLICATIONS |
| E14.3 | UNSPECIFIED DIABETES MELLITUS WITH OPHTHALMIC COMPLICATIONS |
| E14.4 | UNSPECIFIED DIABETES MELLITUS WITH NEUROLOGICAL COMPLICATIONS |
| E14.5 | UNSPECIFIED DM WITH PERIPHERAL CIRCULATORY COMPLICATIONS |
| E14.6 | UNSPECIFIED DIABETES MELLITUS WITH OTHER SPECIFIED COMPLICATIONS |
| E14.7 | UNSPECIFIED DIABETES MELLITUS WITH MULTIPLE COMPLICATIONS |
| E14.8 | UNSPECIFIED DIABETES MELLITUS WITH UNSPECIFIED COMPLICATIONS |
| E14.9 | UNSPECIFIED DIABETES MELLITUS WITHOUT COMPLICATIONS |

### *Diabetes major lower extremity amputation: using unlinked data (ADMRDMAI)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to measure the extent to which primary care systems have effectively avoided major lower extremity amputations associated with diabetes since long-term conditions such as diabetes should normally be well managed in primary care.

**Coverage**: Population aged 15 and older. All *acute care hospitals*, including public and private hospitals that provide inpatient care.

**Numerator**: All non-maternal/non-neonatal admissions with a procedure code of major lower extremity amputation in any field and a diagnosis code of diabetes in any field (see Diabetes major lower extremity amputation and diabetes diagnosis codes below) in a specified year.

**Exclude**:

- Cases resulting from a transfer from another acute care institution (*transfers-in*).
- Obstetric hospitalisations - Cases assigned to an obstetric DRG, e.g. from MDC 14 or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 3. Glossary "Obstetric hospitalisations" in this document for details.
- Cases with trauma diagnosis code (see Trauma diagnosis codes below) in any field.
- Cases with tumor-related peripheral amputation code (ICD-9-CM 1707 and 1708/ICD-10-WHO C40.2 and C40.3) in any field.
- Cases that are *same day/day only admissions*

**Denominator**: Population count

**Diabetes major lower extremity amputation:**

| **ICD-9-CM** | **ICD** |
|---|---|
| **Procedure codes for major lower-extremity amputation:** | **Procedure codes for major lower-extremity amputation:** |
| 8415 BELOW KNEE AMPUTAT NEC | NOT SPECIFIED |
| 8416 DISARTICULATION OF KNEE | **CANADIAN CLASSIFICAION OF HEALTH INTERVENTIONS (CCI)** |
| 8417 ABOVE KNEE AMPUTATION | PROCEDURE CODE FOR LEG AMPUTATION: |
| | 1.SQ.93 AMPUTATION, PELVIS |
| 8418 DISARTICULATION OF HIP | 1.VA.93 AMPUTATION, HIP JOINT |
| | 1.VC.93 AMPUTATION, FEMUR |
| 8419 HINDQUARTER AMPUTATION | 1.VG.93 AMPUTATION, KNEE JOINT |
| | 1.VQ.93 AMPUTATION, TIBIA AND FIBULA |
| | **ICD-10CM** |
| | 0Y6[2,3,4]0ZZ DETACHMENT AT [RIGHT, LEFT, BILATERAL] HINDQUARTER, OPEN APPROACH |
| | 0Y6[7,8]0ZZ DETACHMENT AT [RIGHT, LEFT] FEMORAL REGION, OPEN APPROACH |
| | 0Y6C0Z[1,2,3] DETACHMENT AT RIGHT UPPER LEG, [HIGH, MID, LOW], OPEN APPROACH |
| | 0Y6D0Z[1,2,3] DETACHMENT AT LEFT UPPER LEG, [HIGH, MID, LOW], OPEN APPROACH |
| | 0Y6[F,G]0ZZ DETACHMENT AT [RIGHT, LEFT] KNEE REGION, OPEN APPROACH |
| | 0Y6H0Z[1,2,3] DETACHMENT AT RIGHT LOWER LEG, [HIGH, |

| | | |
|---|---|---|
| | | MID, LOW] OPEN APPROACH |
| | 0Y6J0Z[1,2,3] | DETACHMENT AT LEFT LOWER LEG, [HIGH, MID, LOW], OPEN APPROACH |

**Diabetes diagnosis codes:** use the codes listed for AA4) Diabetes hospital admission (ADMRDBUC).

**Exclude trauma diagnosis codes:**

| ICD-9-CM | | ICD-10-WHO | |
|---|---|---|---|
| 8950 | AMPUTATION TOE | S78.0 | TRAUMATIC AMPUTATION AT HIP JOINT |
| 8951 | AMPUTATION TOE-COMPLICAT | S78.1 | TRAUMATIC AMPUTATION AT LEVEL BETWEEN HIP AND KNEE |
| 8960 | AMPUTATION FOOT, UNILAT | S78.9 | TRAUMATIC AMPUTATION OF HIP AND THIGH, LEVEL UNSPECIFIED |
| 8961 | AMPUT FOOT, UNILAT-COMPL | S88.0 | TRAUMATIC AMPUTATION AT KNEE LEVEL |
| 8962 | AMPUTATION FOOT, BILAT | S88.1 | TRAUMATIC AMPUTATION AT LEVEL BETWEEN KNEE AND ANKLE |
| 8963 | AMPUTAT FOOT, BILAT-COMP | S88.9 | TRAUMATIC AMPUTATION OF LOWER LEG, LEVEL UNSPECIFIED |
| 8970 | AMPUT BELOW KNEE, UNILAT | S98.0 | TRAUMATIC AMPUTATION OF FOOT AT ANKLE LEVEL |
| 8971 | AMPUTAT BK, UNILAT-COMPL | S98.1 | TRAUMATIC AMPUTATION OF ONE TOE |
| 8972 | AMPUT ABOVE KNEE, UNILAT | S98.2 | TRAUMATIC AMPUTATION OF TWO OR MORE TOES |
| 8973 | AMPUT ABV KN, UNIL-COMPL | S98.3 | TRAUMATIC AMPUTATION OF OTHER PARTS OF FOOT |
| 8974 | AMPUTAT LEG, UNILAT NOS | S98.4 | TRAUMATIC AMPUTATION OF FOOT, LEVEL UNSPECIFIED |
| 8975 | AMPUT LEG, UNIL NOS-COMP | T05.3 | TRAUMATIC AMPUTATION OF BOTH FEET |
| 8976 | AMPUTATION LEG, BILAT | T05.4 | TRAUMATIC AMPUTATION OF 1 FOOT AND OTHER LEG [ANY LEVEL, EXCEPT FOOT] |
| 8977 | AMPUTAT LEG, BILAT-COMPL | T05.5 | TRAUMATIC AMPUTATION OF BOTH LEGS [ANY LEVEL] |
| | | T05.6 | TRAUMATIC AMPUTATION OF UPPER AND LOWER LIMBS, ANY COMBINATION [ANY LEVEL] |
| | | T13.6 | TRAUMATIC AMPUTATION OF LOWER LIMB, LEVEL UNSPECIFIED |

### *Diabetes minor lower extremity amputation: using unlinked data (ADMRDMAO)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to measure the extent to which primary care systems have effectively avoided minor lower extremity amputations associated with diabetes since long-term conditions such as diabetes should normally be well managed in primary care.

**Coverage**: Population aged 15 and older. All *acute care hospitals*, including public and private hospitals that provide inpatient care.

**Numerator**: All non-maternal/non-neonatal admissions with a procedure code of minor lower extremity amputation in any field and a diagnosis code of diabetes in any field (see Diabetes minor lower extremity amputation and diabetes diagnosis codes below) in a specified year.

**Exclude**:

- When both a major and minor amputation is performed during the same hospital stay to avoid double counting with diabetes major lower extremity amputation indicator
- Cases resulting from a transfer from another acute care institution (*transfers-in*).
- Obstetric hospitalisations - Cases assigned to an obstetric DRG, e.g. from MDC 14 or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 5. Glossary "Obstetric hospitalisations" in this document for details.
- Cases with trauma diagnosis code (see Trauma diagnosis codes below) in any field.
- Cases with tumor-related peripheral amputation code (ICD-9-CM 1707 and 1708/ICD-10-WHO C40.2 and C40.3) in any field.
- Cases that are *same day/day only admissions*

**Denominator**: Population count

**Diabetes minor lower extremity amputation:**

| **ICD-9-CM** | | **ICD-10-WHO** | |
|---|---|---|---|
| **Procedure codes for minor lower-extremity amputation:** | | **Procedure codes for major lower-extremity amputation:** | |
| 8410 | LOWER LIMB AMPUTAT NOS | | NOT SPECIFIED |
| 8411 | TOE AMPUTATION | **CANADIAN CLASSIFICAION OF HEALTH INTERVENTIONS (CCI)** | |
| 8412 | AMPUTATION THROUGH FOO | | Procedure code for leg amputation: |
| 8413 | DISARTICULATION OF ANKLE | 1.WA.93 | Amputation, ankle joint |
| 8414 | AMPUTAT THROUGH MALLEOLI | 1.WE.93 | Amputation, tarsal bones and intertarsal joints [hindfoot, midfoot] |
| | | 1.WI.93 | Amputation, first metatarsal bones and first metatarsophalangeal joint |
| | | 1.WJ.93 | Amputation, tarsometatarsal joints, other metatarsal bones and other metatarsophalangeal joints [forefoot] |
| | | 1.WK.93 | Amputation, first phalanx of foot |
| | | 1.WL.93 | Amputation, other phalanx of foot |
| | | 1.WM.93 | Amputation, other interphalangeal joints of toe |
| | | 1.WN.93 | Amputation, first interphalangeal joint of toe |
| | | **ICD-10CM** | |
| | | 0Y6[H,J]0Z[0,1,2] | DETACHMENT AT [RIGHT, LEFT] LOWER LEG, HIGH, OPEN APPROACH |
| | | 0Y6M0Z0 | DETACHMENT AT RIGHT FOOT, COMPLETE, OPEN APPROACH |
| | | 0Y6M0Z[4,5,6,7,8] | DETACHMENT AT RIGHT FOOT, COMPLETE [1ST, 2ND, 3RD, 4TH, 5TH] RAY, OPEN APPROACH |
| | | 0Y6M0Z9 | DETACHMENT AT RIGHT FOOT, PARTIAL 1ST RAY, OPEN APPROACH |
| | | 0Y6M0Z[B,C,D,F] | DETACHMENT AT RIGHT FOOT, PARTIAL [2ND, 3RD, 4TH, 5TH] RAY, OPEN APPROACH |

| | | |
|---|---|---|
| | 0Y6N0Z0 | DETACHMENT AT LEFT FOOT, COMPLETE, OPEN APPROACH |
| | 0Y6N0Z[4,5,6,7,8] | DETACHMENT AT LEFT FOOT, COMPLETE [1ST, 2ND, 3RD, 4TH, 5TH] RAY, OPEN APPROACH |
| | 0Y6N0Z9 | DETACHMENT AT LEFT FOOT, PARTIAL 1ST RAY, OPEN APPROACH |
| | 0Y6N0Z[B,C,D,F] | DETACHMENT AT LEFT FOOT, PARTIAL [2ND,3RD, 4TH, 5TH] RAY, OPEN APPROACH |
| | 0Y6[P,Q]0Z[0,1,3] | DETACHMENT AT [RIGHT, LEFT[ 1ST TOE, [COMPLETE, HIGH, LOW], OPEN APPROACH |
| | 0Y6[R,S,T,U,V,W,X,Y]0Z[0,1,2,3] | DETACHMENT AT [RIGHT, LEFT] [2ND, 3RD, 4TH, 5TH] TOE, [COMPLETE, HIGH, MID, LOW], OPEN APPROACH |

**Diabetes diagnosis codes:** use the codes listed for AA4) Diabetes hospital admission (ADMRDBUC).

**Exclude trauma diagnosis codes:** *use the* codes listed for Diabetes major lower extremity amputation (excluding ankle amputations): using unlinked data (ADMRDMAI)

## PRIMARY CARE - PRESCRIBING (PR) INDICATORS

Indicators in the Prescribing indicator set include:

-

- Adequate use of cholesterol lowering treatment in people with diabetes (PRDMPCDD)
- First choice anti-hypertensives for people with diabetes (PRDMPADD)
- Long-term use of benzodiazepines and benzodiazepine related drugs in people aged 65 years and over ( > 365 DDD in one year) (PRBZOZDD)
- Use of long-acting benzodiazepines in people aged 65 years and over (PRBZLAOP)
- Volume of cephalosporines and quinolones as a proportion of all systemic antibiotics prescribed (PRABCQDD)
- Overall volume of antibiotics for systemic use prescribed (DDDs per 1000 population per day) (PRABOUDD)
- ---

  Proportion of 45 years and over who are taking between 5 and 9 medications concurrently (>90 days excluding dermatological and antibiotics) (PRPPOPFL)
- ---

  Proportion of 45 years and over who are taking 10 or more medications concurrently (>90 days excluding dermatological and antibiotics) (PRPPOPFH)
- Overall volume of opioids prescribed (DDDs per 1 000 population per day) (PROPOUDD)
- Proportion of people 65 years and over prescribed antipsychotics (PRPPANTI)
- Proportion of people 65 years and over prescribed antipsychotics among those without a mental health diagnosis causing psychotic symptoms (PRPPNPSY)

**NOTES**

Data are requested for prescribing undertaken in **PRIMARY CARE ONLY**. This includes prescribing undertaken in the primary and ambulatory care setting, whether private or public, and regardless of who is issuing the prescription i.e. family doctors, specialists or other health care professionals (such as the case of nurse practitioners or mental health professionals who can, in certain countries, prescribe medicines). Please exclude, as far as possible, prescribing undertaken in hospital care. Please specify in the online survey the health care sectors to which the data pertain.

The preferred data are those based on DDDs but if not please provide data based on days and specify in the online survey.

Please refer to the following guidelines for DDD and ATC codes:

- WHO Collaborating Centre for Drug Statistics Methodology, Guidelines for ATC classification and DDD assignment 2020. Oslo, Norway, 2020. https://www.whocc.no/atc_ddd_index/
- Countries are advised to cross-check whether there is any impact to the historic data with applying the most recent Guidelines for ATC and DDD assignment.

### *Adequate use of cholesterol lowering treatment in people with diabetes (PRDMPCDD)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to measure safe prescribing of cholesterol lowering treatment in people with diabetes as lipid-lowering treatments can suppress the progression of diabetes.

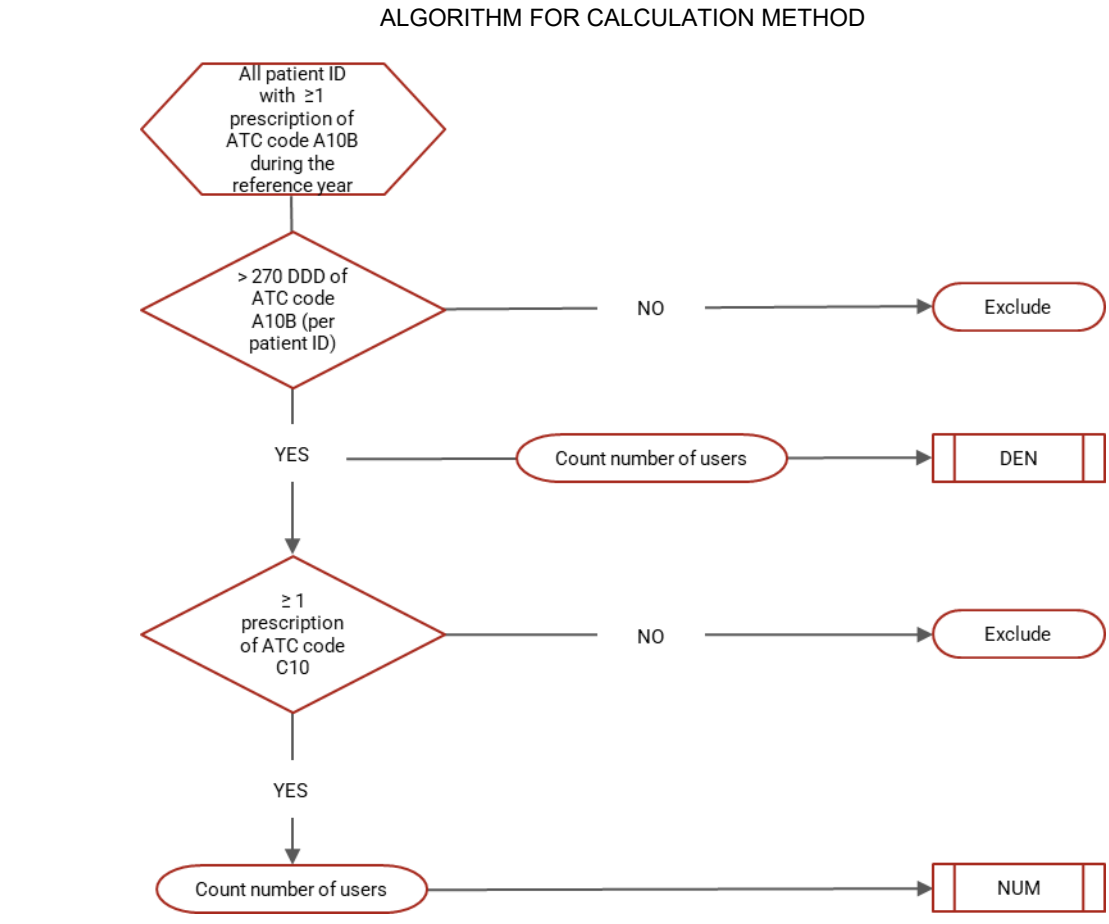
**Coverage**: Population in the *prescribing database* with ≥ 1 prescription of ATC code A10B during the reference year

**Numerator**: Number of people who are long-term users of glucose regulating medication (A10B) with concomitant use of ≥ 1 prescription of cholesterol lowering medication (C10).

**Denominator**: Number of people who are long-term users of glucose regulating medication (A10B) in the prescribing database (see Figure 2.1).

**Notes**: Number of people who are long-term users of glucose regulating medication (A10B) are defined as individuals who use >270 *Defined Daily Doses (DDD)* of A10B per year. If your database does not report *DDD*, please derive indicator using >270 days of A10B per year.

## Figure 2.1. Adequate use of cholesterol lowering treatment in people with diabetes




Source: OECD.

### *First choice anti-hypertensives for people with diabetes (PRDMPADD)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to measure safe prescribing of angiotensin converting enzyme inhibitor (ACE-I) or angiotensin receptor blocker (ARB) treatment in people with diabetes as there is clinical evidence that the progression of kidney damage among diabetes patients is slowed by treatment with these medicines.

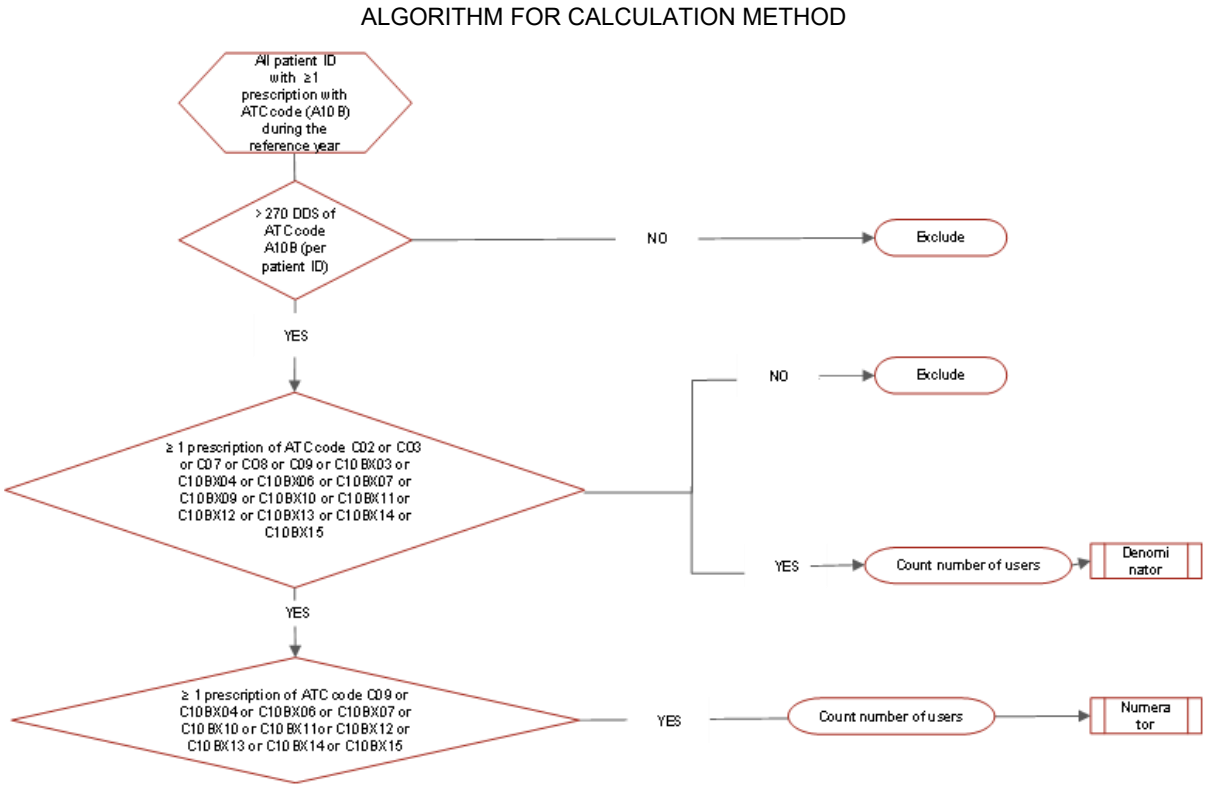
**Coverage**: Population in *prescribing database* with ≥ 1 prescription of ATC code A10B during the reference year

**Numerator**: Number of people who are long-term users of glucose regulating medication (A10B) with concomitant use of ≥ 1 prescription angiotensin converting enzyme inhibitor (ACE-I) or angiotensin receptor blocker (ARB) (C09, C10BX04, C10BX06, C10BX07, C10BX10, C10BX11, C10BX12, C10BX13, C10BX14, C10BX15).

**Denominator**: Number of people who are long-term users of glucose regulating medication (A10B) with concomitant use of ≥ 1 prescription antihypertensives (ATC-C02) or diuretics (ATC C03) or beta-blockers (ATC C07) or calcium channel blockers (C08) or angiotensin converting enzyme inhibitor (ACE-I) or angiotensin receptor blocker (ARB) (C09) or C10BX03 or C10BX04, or C10BX06, or C10BX07, or C10BX09, or C10BX10 or C10BX11or C10BX12 or C10BX13 or C10BX14 or C10BX15 (Figure 2.2).

**Notes**: Number of people who are long-term users of glucose regulating medication (A10B) are defined as individuals who use >270 *Defined Daily Doses (DDD)* of A10B per year. If your prescribing database does not report *DDD*, please derive indicator using >270 days of A10B per year.

## Figure 2.2. First choice anti-hypertensives for people with diabetes




Source: OECD.

### *Long-term use of benzodiazepines and benzodiazepine related drugs in people aged 65 years and over ( > 365 DDD in one year) (PRBZOZDD)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor unsafe prescribing of benzodiazepines and benzodiazepine related drugs as long-term use of these medicines should be avoided primarily due to development of tolerance and a risk for benzodiazepines dependence, particularly among patients over age 65 as they are also at increased risk of sedation, cognitive impairment, and falls.

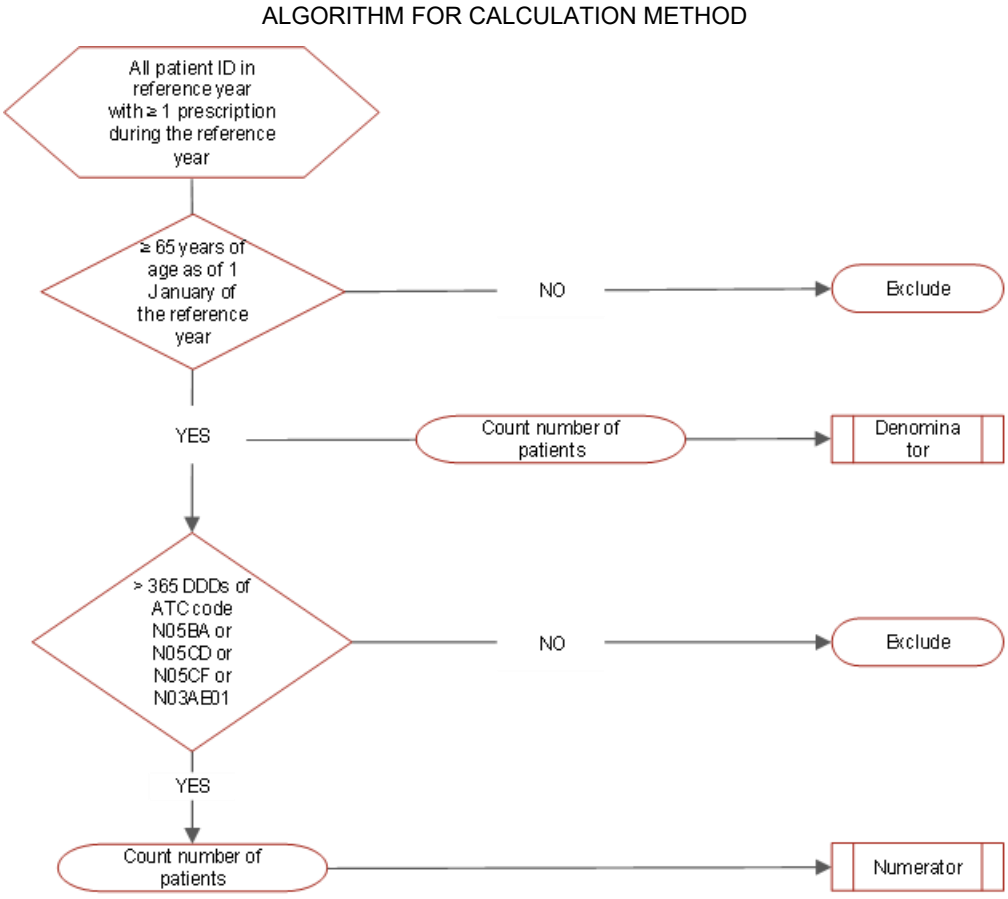
**Coverage**: Population aged 65 years and over (on 1 January of the reference year) in the *prescribing database* with ≥ 1 prescription during the reference year

**Numerator**: Number of individuals ≥ 65 years of age on 1 January in the *prescribing database* with > 365 *DDDs* of benzodiazepines (N05BA or N05CD or N05CF or N03AE01) prescribed in the year.

**Denominator**: Number of individuals ≥ 65 years of age on 1 January in the prescribing database (Figure 2.3Figure 2.3. Long-term use of benzodiazepines and benzodiazepine related drugs in people aged 65 years and over ( > 365 DDD in one year)

**Note**: If your prescribing database does not report *DDD*, please derive indicator using > 365 days of benzodiazepines per year.

**Figure 2.3. Long-term use of benzodiazepines and benzodiazepine related drugs in people aged 65 years and over ( > 365 DDD in one year)**




Source: OECD.

### *Use of long-acting benzodiazepines in people aged 65 years and over (PRBZLAOP)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

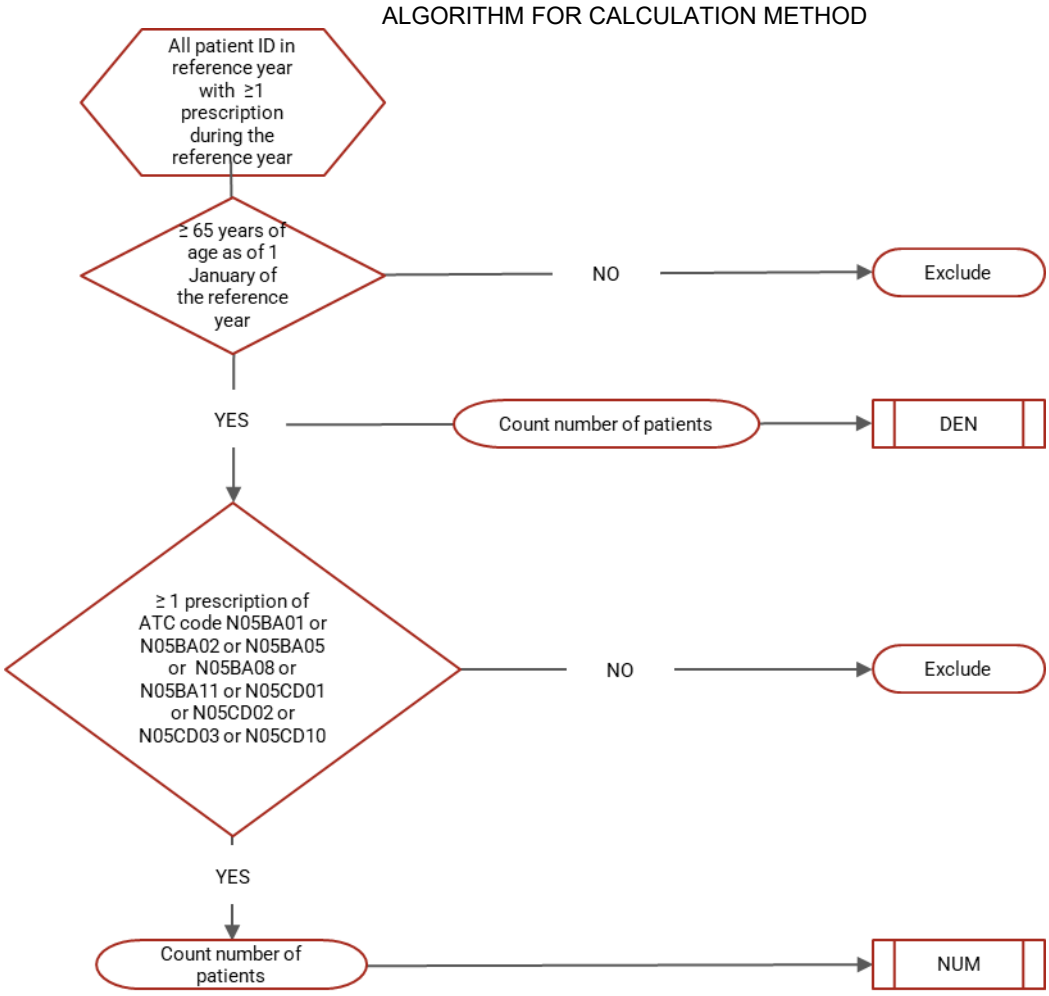
**Objective**: This indicator aims to monitor the unsafe prescribing of long-acting benzodiazepines and benzodiazepine-related drugs among people over age 65, as these drugs can increase the risk of sedation, cognitive impairment, and falls among them.

**Coverage**: Population aged 65 years and over (on 1 January of the reference year) in the *prescribing database* with ≥ 1 prescription during the reference year

**Numerator**: Number of individuals ≥ 65 years of age on 1 January in the *prescribing database* with ≥ 1 prescription long-acting benzodiazepines (N05BA01, N05BA02, N05BA05, N05BA08, N05BA11, N05CD01, N05CD02, N05CD03, N05CD10)

**Denominator**: Number of individuals ≥ 65 years of age on 1 January in the *prescribing database (*Figure 2.4*)*

**Figure 2.4. Use of long-acting benzodiazepines in people aged 65 years and over**




Source: OECD.

### *Volume of cephalosporines and quinolones as a proportion of all systemic antibiotics prescribed (PRABCQDD)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

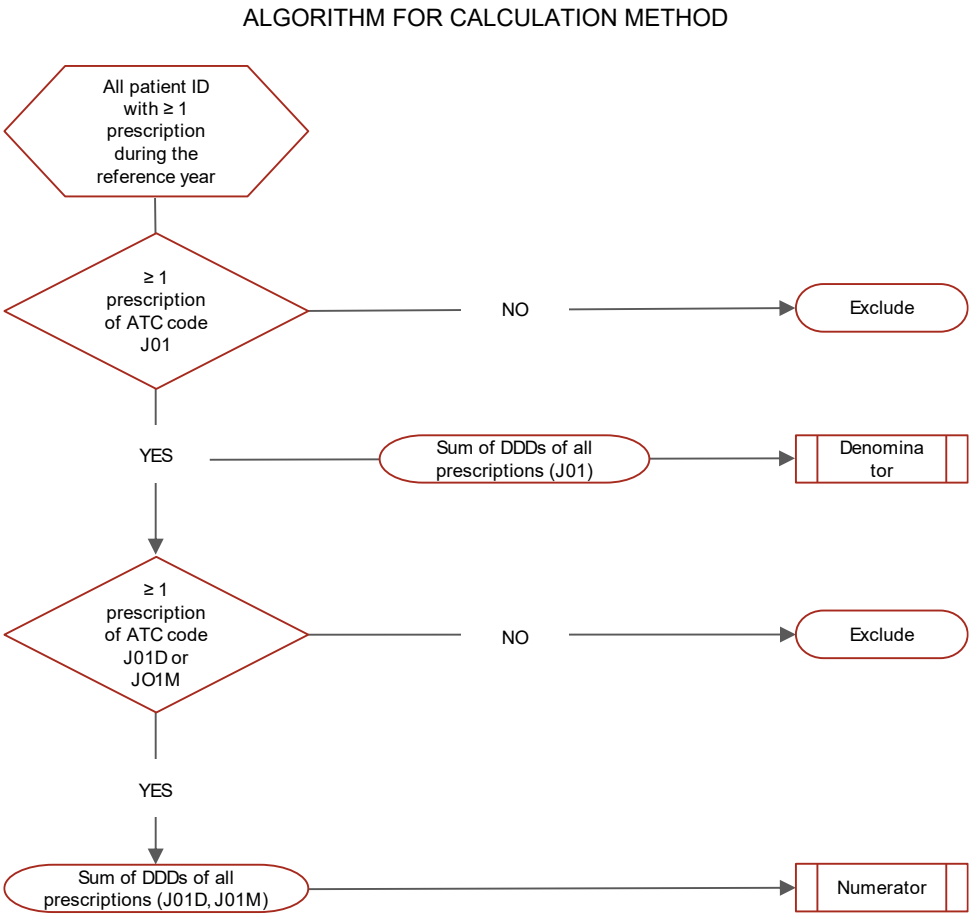
**Objective**: This indicator aims to monitor safe prescribing of cephalosporins and quinolones as the inadequate use of these antibiotics could prevent the expansion of antimicrobial resistance.

**Coverage**: Population in the *prescribing database* with ≥ 1 prescription during the reference year

**Numerator**: Sum of *DDDs* of all ATC J01D and J01M prescriptions.

**Denominator**: Sum of *DDDs* of all ATC J01 prescriptions in database (Figure 2.5).

## Figure 2.5. Volume of cephalosporines and quinolones as a proportion of all systemic antibiotics prescribed




Source: OECD.

### *Overall volume of antibiotics for systemic use prescribed (DDDs per 1000 population per day) (PRABOUDD)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor antibiotic use as it is important to prevent the expansion of antimicrobial resistance.

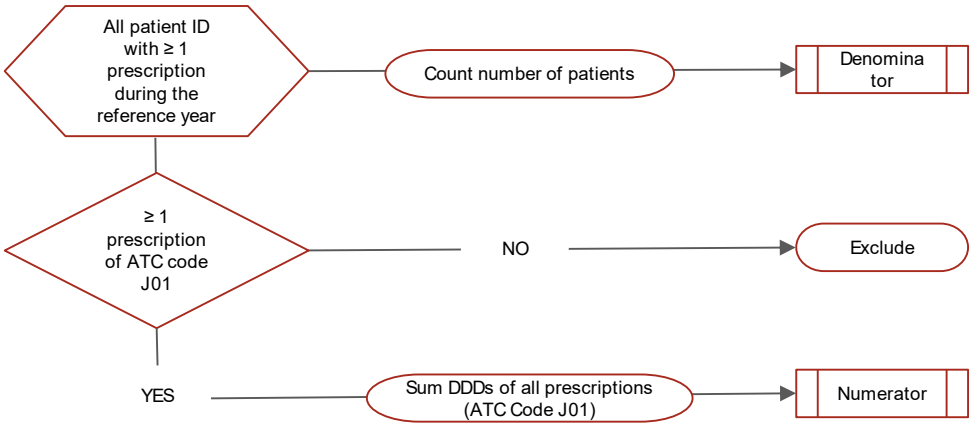
**Coverage**: Population in the *prescribing database* with ≥ 1 prescription during the reference year

**Numerator**: Sum of *DDD*s of all ATC J01 prescriptions in the community (primary care).

**Denominator**: Population covered by database on 1 January (Figure 2.6)

**Note**: Please submit data for the numerator and denominator as specified above.

#### Figure 2.6. Overall volume of antibiotics for systemic use prescribed




Source: OECD.

### *Proportion of 45 years and over who are taking between 5 and 9 medications concurrently (>90 days excluding dermatological and antibiotics) (PRPPOPFL)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor polypharmacy as it could increase the risk of side effects of the medications.

**Coverage**: Population aged 45 years and over (on 1 January of the reference year) in the *prescribing database* with ≥ 1 prescription during the reference year

**Numerator**: Number of individuals ≥ 45 years of age as on 1 January in database with between 5 and 9 chronically used medications with different ATC codes at the fourth level (e.g., A10BA) during the reference year. This means that a different medication should only be counted if it is not within the same ATC codes at the fourth level. Medication here refers to subgroups of chemicals classified by the World Health Organization at the fourth level of the ATC classification system, 2017 version.

For example,

- Person A is a one-drug user if ATC fourth level codes are the following: A10BA01, A10BA02, A10BA03, A10BA04

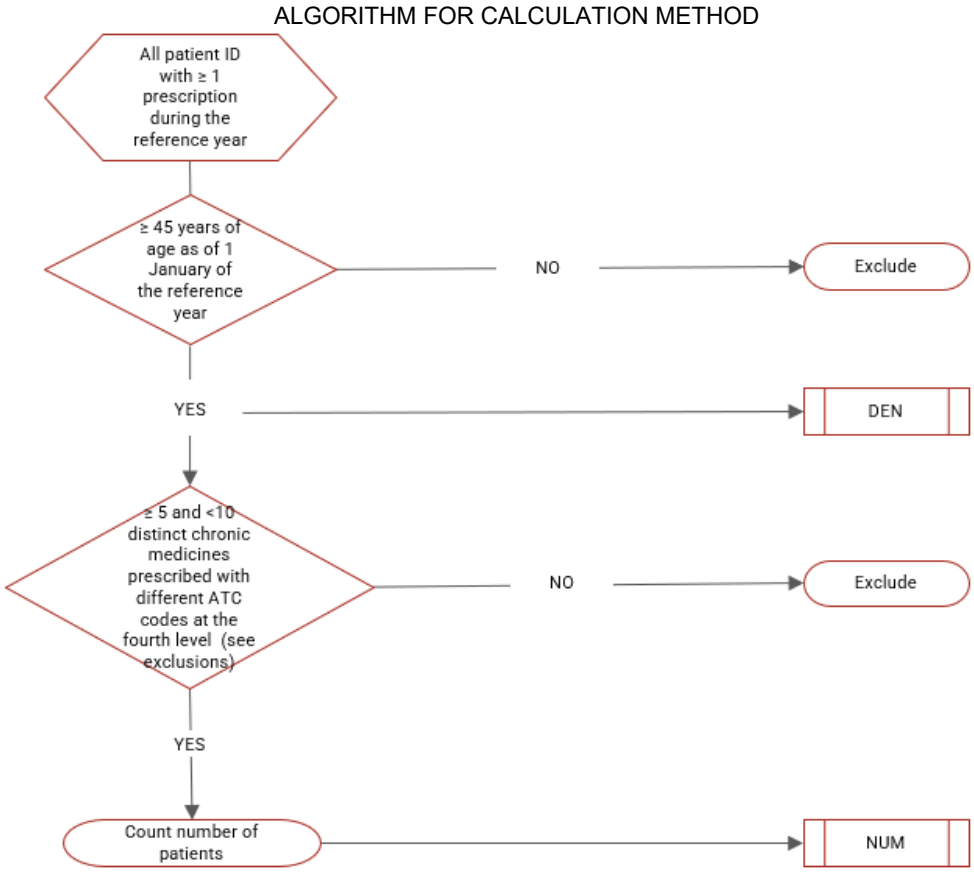
- Person B is a five-drug user if ATC fourth level codes are the following: A10BA01, A10BB01, A10BC01, A10BD01, A10BE01
- Chronic usage is defined as medication prescribed for more than 90 days or four or more prescriptions of a medication in the year.

**Denominato**r: Number of individuals ≥ 45 years of age at 1 January in database (Figure 2.7)

**Note**: Dermatologicals for topical usage are excluded of the count because these medications usually do not interact with other (systemic) medications. Antibiotics (i.e., ATC codes "J01") are also excluded because they are almost exclusively prescribed for acute infections. Please check the table below listing the ATC codes to be excluded from the numerator.

| ***Dermatologicals for topical use to be excluded*** | ***ATC codes*** |
|---|---|
| Antibiotics for the eye | S01A |
| Otologicals | S02 |
| Antifungals for topical use | D01A |
| Emollients and protectives | D02 |
| Preparations for treatment of wounds and ulcers | D03 |
| Antipruritics, incl. antihistamines, anaesthetics, etc. | D04 |
| Antipsoriatics for topical use | D05A |
| Antibiotics and chemotherapeutics for dermatological use | D06 |
| Corticosteroids, dermatological preparations | D07 |
| Antiseptics and disinfectants | D08 |
| Medicated dressings | D09A |
| Anti-acne preparations for topical use | D10A |
| Antihidrotics | D11AA |
| Medicated shampoos | D11AC |
| Androgens for topical use | D11AE |
| Wart and anti-corn preparations | D11AF |
| Tacrolimus | D11AH01 |
| Pimecrolimus | D11AH02 |
| Cromoglicic acid | D11AH03 |
| Crisaborole | D11AH06 |
| Other dermatologicals (exl. finasteride; D11AX10) | D11AX01 to D11AX09 |
| Other dermatologicals (exl. finasteride; D11AX10) | D11AX11 to D11AX57 |
| Antiinfectives and antiseptics, excl. combinations with corticosteroids | G01A |
| Combinations of corticosteroids and antiinfectives for gynaecological use | G01B |
| Antiinfectives and antiseptics for local oral treatment | A01AB |
| Corticosteroids for local oral treatment | A01AC |
| Antihemorrhoidals with corticosteroids | C05AA |

**Figure 2.7. Proportion of 45 years and over who are taking 5-9 medications concurrently (>90 days excluding dermatological and antibiotics)**




Source: OECD.

### *Proportion of 45 years and over who are taking 10 or more medications concurrently (>90 days excluding dermatological and antibiotics) (PRPPOPFH)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor polypharmacy as it could increase the risk of side effects of the medications.

**Coverage**: Population aged 45 years and over (on 1 January of the reference year) in the *prescribing database* with ≥ 1 prescription during the reference year

**Numerator**: Number of individuals ≥ 45 years of age as on 1 January in database with ≥ 10 chronically used medications with different ATC codes at the fourth level (e.g., A10BA) during the reference year. This means that a different medication should only be counted if it is not within the same ATC codes at the fourth level. Medication here refers to subgroups of chemicals classified by the World Health Organization at the fourth level of the ATC classification system, 2017 version.

For example,

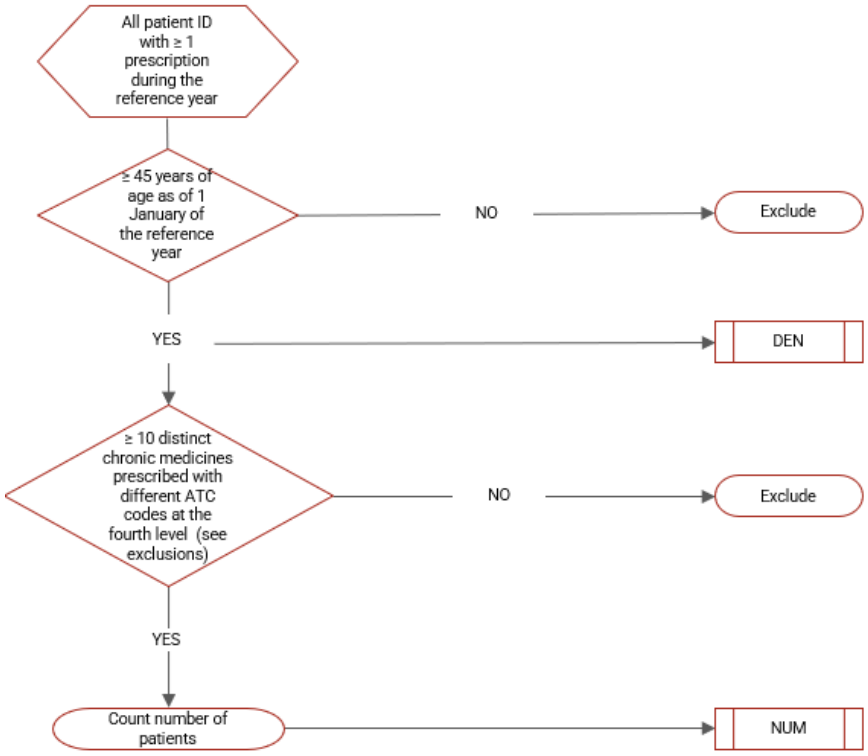
- Person A is a one-drug user if ATC fourth level codes are the following: A10BA01, A10BA02, A10BA03, A10BA04

- Person B is a five-drug user if ATC fourth level codes are the following: A10BA01, A10BB01, A10BC01, A10BD01, A10BE01
- Chronic usage is defined as medication prescribed for more than 90 days or four or more prescriptions of a medication in the year.

**Denominato**r: Number of individuals ≥ 45 years of age at 1 January in database (Figure 2.8).

**Note**: Dermatologicals for topical usage are excluded of the count because these medications usually do not interact with other (systemic) medications. Antibiotics (i.e., ATC codes "J01") are also excluded because they are almost exclusively prescribed for acute infections. Please see the table included above in PR7 listing the ATC codes to be excluded from the numerator.

### Figure 2.8. Proportion of 45 years and over who are taking more than 10 medications concurrently (>90 days excluding dermatological and antibiotics)




Source: OECD.

### *Overall volume of opioids prescribed (DDDs per 1 000 population per day) (PROPOUDD)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor safe prescribing of opioid.

**Coverage**: Population aged 18 years and over (on 1 January of the reference year) in *prescribing database* with ≥ 1 prescription during the reference year

**Numerator**: Sum *DDD* of all ATC N02A prescriptions

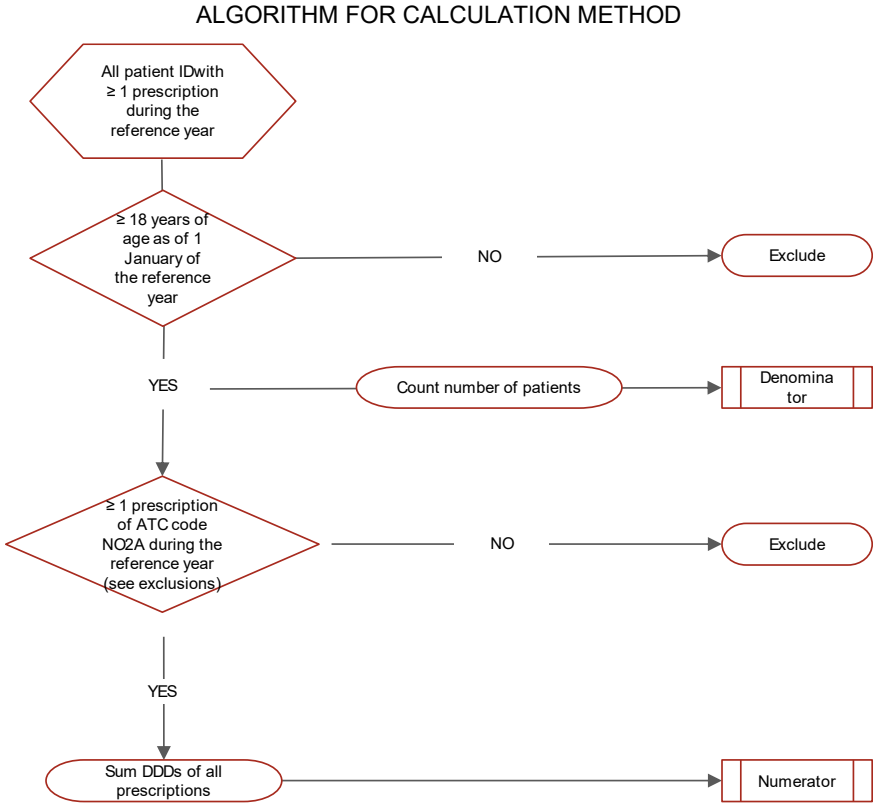
**Denominator**: Number of individuals ≥ 18 years of age on 1 January (Figure 2.9).

**NOTE**: Please submit data for the numerator and denominator as specified above.

Methadone and buprenorphine/naloxonecombinations (Suboxone) are excluded from all analyses, as these products are most often used in the treatment of addiction and the focus of this collection is opioids for pain. Please check the table below listing the ATC codes to be excluded both from the numerator and the denominator.

| ***Name of opioids for the treatment of addiction for exclusion from the numerator of the opioids indicators*** | ***ATC codes*** |
|---|---|
| Methadone, combinations excl. psycholeptics | N02AC52 |
| Buprenorphine | N02AE01 |

**Figure 2.9. Overall volume of opioids prescribed (DDDs per 1 000 population per day)**




Source: OECD.

### *Proportion of people 65 years and over prescribed antipsychotics (PRPPANTI)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor safe prescribing of antipsychotics among people over age 65.

**Coverage**: All persons 65 years and over (on the first day of the reference year) in the *prescribing database* (5-year age groups) that show at least one prescription in the reference year.

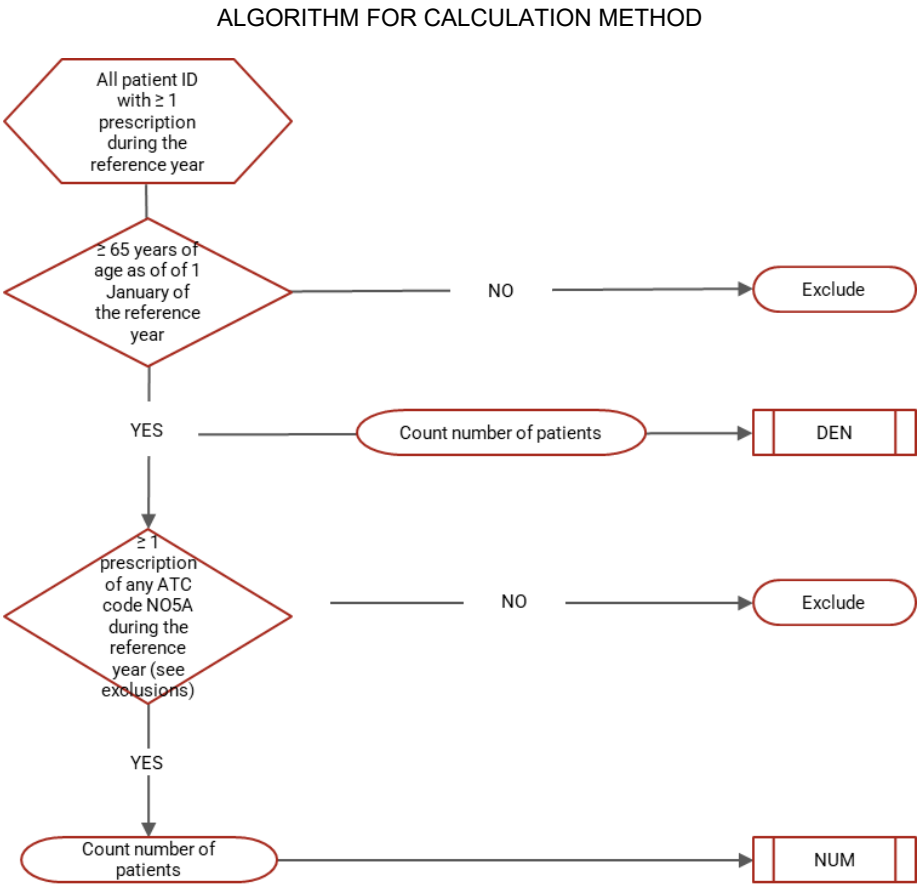
**Numerator**: Number of individuals ≥65 years on first day of reference year with ≥1 prescription for any antipsychotic medication (ATC codes N05A) prescribed during the reference year.

**Denominator**: Number of individuals ≥65 years of age on first day of reference year in the national prescription database in the reference year (Figure 2.10).

**Exclude**:

- Prescriptions for antipsychotic medications registered through in-patient hospital prescription registries.

## Figure 2.10. Proportion of people 65 years and over prescribed antipsychotics




Source: OECD.

### *Proportion of people 65 years and over prescribed antipsychotics among those without a mental health diagnosis causing psychotic symptoms (PRPPNPSY)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor safe prescribing of antipsychotics for people over age 65 without a diagnosis which includes exhibiting psychotic symptoms or being at high risk of psychotic symptoms without antipsychotics. In people who have not received these diagnoses, antipsychotics are usually not considered a first-line treatment.

**Coverage**: All persons 65 years and over (on the first day of the reference year) in the *prescribing database* (5-year age groups) that show at least one prescription in the reference year

**Numerator**: Number of denominator cases with ≥1 prescription for any antipsychotic medication (ATC codes N05A) prescribed during the reference year.

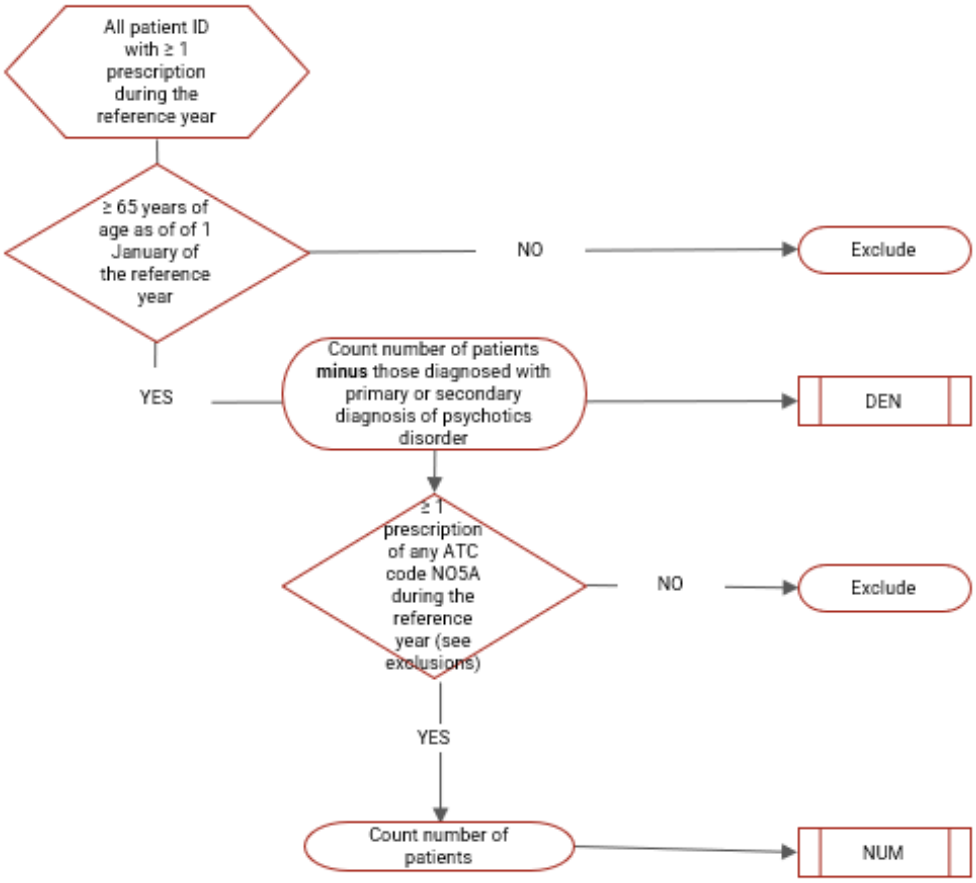
**Denominator**: Number of ≥65 years of age on first day of reference year in the national prescription database in the reference year (Figure 2.11) without a principal or secondary diagnosis of psychotic disorder in the reference year.

**Exclude**: Prescriptions for antipsychotic medications registered through in-patient hospital prescription registries.

For this indicator, non-psychotic people refer to the number of people in the prescribing database minus the number of people in the prescribing database who have with principal or secondary diagnoses of the following ICD-10-WHO codes:

- F06.2 - Organic delusional [schizophrenia-like] disorder
- F1[0-9].[5,7] - Mental and behavioural disorders due to psychoactive substance use (psychotic disorder or residual and late-onset psychotic disorder)
- F20-F29 - Schizophrenia, schizotypal and delusional disorders
- F30 – Manic episode
- F31 – Bipolar affective disorder
- F32.3 - Severe depressive episode with psychotic symptoms
- F33.3 - Recurrent depressive disorder, current episode severe with psychotic symptoms

## Figure 2.11. Proportion of non-psychotic people 65 years and over prescribed antipsychotics




Source: OECD.

## ACUTE CARE (AC) INDICATORS

Indicators in the acute care indicator set include:

- AC1) AMI 30-day mortality using linked data (MORTAMIO)
- AC2) AMI 30-day mortality using unlinked data (MORTAMII)
- AC4) Haemorrhagic stroke 30-day mortality using linked data (MORTHSTO)
- AC5) Haemorrhagic stroke 30-day mortality using unlinked data (MORTHSTI)
- AC7) Ischaemic stroke 30-day mortality using linked data (MORTISTO)
- AC8) Ischaemic stroke 30-day mortality using unlinked data (MORTISTI)
- AC10~12) Hip fracture surgery initiated within 2 calendar days after admission to the hospital (IHWTHIPS)

---

### *AMI 30-day* mortality using linked data (MORTAMIO)

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor quality of acute care as high quality acute care could minimise deaths happened in and out of hospital within 30-day following AMI.

**Coverage:** Patients aged 45 and older (5-year age group)

**Numerator:** Number of deaths in any hospital and out of hospital that occurred within 30 days of the admission date of the denominator cases.

**Denominator:** The last *admission* for each patient admitted to hospital for *urgent (non-elective) care* with a *principal diagnosis* (PDx) of acute myocardial infarction during 1 January to 31 December in the specified year. [AMI diagnostic codes upon separation: ICD-9 410 or ICD-10 I21, I22.].

Please note only one admission per patient is to be counted in the denominator and the numerator is calculated by following up all denominator cases for up to 30 days. If possible, all patients with AMI who received acute (non-elective) care at hospital should be included. If not possible, please provide data referring to patients with AMI admitted to hospital inpatient care and provide information on the deviation from definitions in Sources and Methods.

---

### *AMI 30-day mortality using unlinked data (MORTAMII)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor quality of acute care as high quality acute care could minimise deaths happened in hospital within 30-day following AMI.

**Coverage:** Patients aged 45 and older (5-year age group)

**Numerator:** Number of deaths (in the same hospital) that occurred within 30 days of the admission date of the denominator cases.

**Denominator:** Number of *admissions* to hospital for *urgent (non-elective) care* with a *principal diagnosis* of acute myocardial infarction from 1 January to 31 December in the specified year. [AMI diagnostic codes upon separation: ICD-9 410 or ICD-10 I21, I22.]

Please note:

- All admissions (including *day cases*) are to be counted in the denominator including admissions resulting a) in a *transfer* to another acute care facility (*transfers out*) and b) from a transfer from another acute care facility (*transfers in*).
- If possible, admission for patients diagnosed with AMI who received care at hospital emergency department should be included. If not possible, please provide data referring to admissions following AMI to hospital inpatient care and provide information on the deviation from definitions in Sources and Methods.

---

### *Haemorrhagic stroke 30-day mortality using linked data (MORTHSTO)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor quality of acute care as high quality acute care could minimise deaths happened in and out of hospital within 30-day following haemorrhagic stroke.

**Coverage:** Patients aged 45 and older (5-year age group)

**Numerator:** Number of deaths in any hospital and out of hospital that occurred within 30 days of the admission date of the denominator cases.

**Denominator:** The last *admission* in the specified year for each patient admitted to hospital for *urgent (non-elective) care* with a *principal diagnosis* (PDx) of haemorrhagic stroke from 1 January to 31 December in the specified year. [Haemorrhagic stroke diagnostic codes upon separation: ICD-9 430-432 or ICD-10 I60-I62.]

Please note only one admission per patient is to be counted in the denominator and the numerator is calculated by following up all denominator cases for up to 30 days. If possible, patients diagnosed with haemorrhagic stroke who received care at hospital emergency department should be included. If not possible, please provide data referring to patients with haemorrhagic stroke admitted to hospital inpatient care and provide information on the deviation from definitions in Sources and Methods.

---

### *Haemorrhagic stroke 30-day mortality using unlinked data (MORTHSTI)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor quality of acute care as high quality acute care could minimise deaths happened in hospital within 30-day following haemorrhagic stroke.

**Coverage:** Patients aged 45 and older (5-year age group)

**Numerator:** Number of deaths in the same hospital that occurred within 30 days of the admission date of the denominator cases.

**Denominator:** Number of *admissions* to hospital for *urgent (non-elective) care* with a *principal diagnosis* of haemorrhagic stroke from 1 January to 31 December in the specified year. [Haemorrhagic stroke diagnostic codes upon separation: ICD-9 430-432 or ICD-10 I60-I62.]

Please note:

- All *admissions* (including *day cases*) are to be counted in the denominator including admissions resulting a) in a *transfer* to another acute care facility (*transfers out*) and b) from a transfer from another acute care facility (*transfers in*).
- If possible, admission for patients diagnosed with haemorrhagic stroke who received care at hospital emergency department should be included. If not possible, please provide data referring to admissions following haemorrhagic stroke to hospital inpatient care and provide information on the deviation from definitions in Sources and Methods.

---

### *Ischaemic stroke 30-day mortality using linked data (MORTISTO)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor quality of acute care as high quality acute care could minimise deaths happened in and out of hospital within 30-day following ischaemic stroke.

**Coverage:** Patients aged 45 and older (5-year age group)

**Numerator:** Number of deaths in any hospital and out of hospital that occurred within 30 days of the admission date of the denominator cases.

**Denominator:** The last *admission* in the specified year for each patient admitted to hospital for *urgent (non-elective) care* with a *principal diagnosis* (PDx) of ischemic stroke from 1 January to 31 December in the specified year. [Ischemic stroke diagnostic codes upon separation: ICD-9 433, 434, and 436 or ICD-10 I63-I64.]

Please note only one admission per patient is to be counted in the denominator and the numerator is calculated by following up all denominator cases for up to 30 days. If possible, patients diagnosed with ischaemic stroke who received care at hospital emergency department should be included. If not possible, please provide data referring to patients with ischaemic stroke admitted to hospital inpatient care and provide information on the deviation from definitions in Sources and Methods.

---

### *Ischaemic stroke 30-day mortality using unlinked data (MORTISTI)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor quality of acute care as high quality acute care could minimise deaths happened in hospital within 30-day following ischaemic stroke.

**Coverage:** Patients aged 45 and older (5-year age group)

**Numerator:** Number of deaths in the same hospital that occurred within 30 days of the admission date of the denominator cases.

**Denominator:** Number of *admissions* to hospital for *urgent (non-elective) care* with a *principal diagnosis* of ischemic stroke from 1 January to 31 December in the specified year. [Ischemic stroke diagnostic codes upon separation: ICD-9 433, 434, and 436 or ICD-10 I63-I64.]

Please note:

- All *admissions* (including *day cases*) are to be counted in the denominator including admissions resulting a) in a transfer to another acute care facility (*transfers out*) and b) from a transfer from another acute care facility (*transfers in*).

- If possible, admission for patients diagnosed with haemorrhagic stroke who received care at hospital emergency department should be included. If not possible, please provide data referring to admissions following haemorrhagic stroke to hospital inpatient care and provide information on the deviation from definitions in Sources and Methods.

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### *Hip fracture surgery initiated within 2 calendar days after admission to the hospital (IHWTHIPS)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor acute care quality as the initiation of hip fracture surgery within 48 hours after admission is recommended based on clinical guidelines.

**Coverage:** Patients aged 65 and older (5-year age group)

**Numerator:** Number of denominator cases that were surgically treated (see list of procedures below) within 2 calendar days after admission. (IHWTHIPS)

**Denominator:** Number of patients aged 65 years or older admitted to hospital for *urgent (non-elective)* care with a *principal diagnosis* (PDx) of upper femur fracture and who were surgically treated (see list of procedures below) in the same hospital during the specified year [Hip fracture diagnostic codes: ICD-10 S72.0, S72.1, S72.2 or ICD-9 820].

**Exclude:**

- *Admissions* where the hip fracture occurred during the hospital stay (e.g. hip fracture is coded as a post-admission diagnosis).
- *Admissions* with missing or invalid procedure date.

**Technical notes:**

**Within 2 Calendar Days:** for the purposes of calculating the numerator cases the term 'within 2 calendar days' includes cases that were:

- Treated on day 0 (same day as admission)
- Treated on day 1 (next day)
- Treated on day 2

**Surgically Treated:** for the purposes of calculating the denominator cases the term 'surgically treated' refers to the following list of procedures:

- Fixation, hip joint
- Application of external fixator device
- Implantation of internal device, hip joint
- Fixation, femur
- Implantation of internal device pelvis
- Closed reduction of fracture with internal fixation
- Open reduction of fracture with internal fixation
- Total hip replacement
- Partial hip replacement

Due to significant variation in procedure classifications between countries, the secretariat does not provide

detailed classification codes of the procedures listed here. Countries are requested to map these procedure descriptions to their procedure classification codes and report any related issues in the comments box in the Sources and Methods section of the questionnaire.

## INTEGRATED CARE (IC) INDICATORS

General Objective:

Optimal integration between different levels of care for stroke and congestive heart failure (CHF) patients minimises unnecessary readmissions to hospitals and reduces mortality, while maximising appropriate prescriptions. For patients with stroke and CHF discharged from hospital, outcomes such as readmission, mortality and compliance with prescription guidelines measure the performance of health systems in delivering integrated care.

Indicators in the Integrated Care indicator set include:

- Ischaemic Stroke – All-cause hospital readmissions within 365 days after discharge (ICISCACR)
- Ischaemic Stroke – Disease-specific hospital readmissions within 365 days after discharge (ICISCDSR)
- Ischaemic Stroke – All-cause mortality within 365 days after discharge (ICISCACM)
- Ischaemic Stroke – All-cause mortality or all-cause readmission within 365 days after discharge (ICISCMACR)
- Ischaemic Stroke – All-cause mortality or disease-specific readmission within 365 days after discharge (ICISCMDSR)
- CHF - All-cause hospital readmissions within 365 days after discharge (ICCHFACR)
- CHF – Disease-specific hospital readmissions within 365 days after discharge (ICCHFDSR)
- CHF- All-cause mortality within 365 days after discharge (ICCHFACM)

  CHF- All-cause mortality or all-cause readmission within 365 days after discharge (ICCHFMACR)
- CHF- All-cause mortality or disease-specific readmission within 365 days after discharge (ICCHFMDSR)
- CHF – Case fatality within 30 days of the admission date (ICCHFCF)
- Ischaemic Stroke - Prescribed antihypertensive medicines between 12 and 18 months after ischaemic stroke (ICISCPHT)
- Ischaemic Stroke - Prescribed antithrombotics between 12 and 18 months after ischaemic stroke (ICISCPTR)

**NOTES**

Where possible, countries are welcomed to share data at subnational level on all integrated care indicators. If this is a possibility, please get in touch with the secretariat (HCQO.contact@oecd.org).

In the case of small numbers in cells (<5 cases), countries can fill the cells with round numbers or zero to maintain patient data confidentiality. Countries should report which approach they followed in the Sources and Methods section.

An **episode of care** is defined as a period of hospitalised care from the date of admission to a hospital for inpatient care to the date of discharge home (or to a nursing home or long-term care), in which transfers within or between facilities and “nested” admissions that occurred during this period are linked together to form one episode of care (see Figure 3.1 in the general HCQO data guidelines).

Countries that have multiple admissions within one hospitalisation should build a variable referring to a single hospital episode (see Glossary) and use the first principal diagnosis from the episode to select cases to calculate integrated care indicators.

**Principal diagnosis (PDx)** follows one of two approaches:

- The PDx is the condition established after early clinical evaluation to be chiefly responsible for causing the hospitalisation (*'condition held chiefly responsible'* approach).
- The PDx is the diagnosis that is finally established to be the main reason for the hospital stay; that is demanding the most resources/medical effort over the course of the patients stay (*'condition demanding the most resources'* approach).

---

### *Ischaemic Stroke – All-cause hospital readmissions within 365 days after discharge (ICISCACR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** Measure level of adverse outcome (readmission) that could be avoided provided optimal quality of care integration between hospital and general primary healthcare.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time ischaemic stroke. A first-time ischaemic stroke is defined as an ischaemic stroke among persons with no *hospital admission* for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for stroke from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess readmissions. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** The number of patients in the denominator who were readmitted to hospital for *urgent (non-elective)* in-patient care of any condition at least once within 365 days after date of discharge from the index episode of care. Elective admissions are not included. Day cases should not be considered hospital admission.

**Denominator:** Number of persons discharged alive from *hospital* after *urgent (non-elective)* episode of in-patient care with a *principal diagnosis* of a first-time ischaemic stroke from 1 January to 31 December in the specified year [Ischaemic stroke diagnostic codes upon separation: ICD-9: 433, 434, and 436 or ICD-10: I63-I64]. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for any type of stroke in any diagnosis field [ICD-10: I60-I64 and I69] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

---

### *Ischaemic Stroke – Disease-specific hospital readmissions within 365 days after discharge (ICISCDSR)*

**Objective:** Measure level of adverse outcome (readmission) that could be avoided provided optimal quality of care integration between hospital and specialty healthcare.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time ischaemic stroke. A first-time ischaemic stroke is defined as an ischaemic stroke among persons with no *hospital admission* for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an

incident on 7 July 2018, and no admission for any type of stroke from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess readmission. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** Number of patients in the denominator who were readmitted to hospital for *urgent (non-elective)* in-patient care at least once within 365 days with stroke or late effects (sequelae) of stroke as the *principal diagnosis*. [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69]. Elective admissions are not included. Day cases should not be considered hospital admission.

**Denominator:** Number of persons discharged alive from *hospital* after *urgent (non-elective)* episode of in-patient care with a *principal diagnosis* of a first-time ischaemic stroke from 1 January to 31 December in the specified year [Ischaemic stroke diagnostic codes upon separation: ICD-9: 433, 434, and 436 or ICD-10: I63-I64]. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for any type of stroke in any diagnosis field [ICD-10: I60-I64 and I69] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

---

### *Ischaemic Stroke – All-cause mortality within 365 days after discharge (ICISCACM)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** Measure level of ultimate adverse outcome (death) that could be avoided provided optimal quality of integrated care delivery.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time ischaemic stroke. A first-time ischaemic stroke is defined as an ischaemic stroke among persons with no *hospital admission* for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for any type of stroke from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess mortality. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator**: Number of all deaths within 365 days after discharge among those cases meeting the inclusion and exclusion rules for the denominator.

**Denominator:** Number of persons discharged alive from *hospital* after *urgent (non-elective)* episode of care with a *principal diagnosis* of a first-time ischaemic stroke from 1 January to 31 December in the specified year [Ischaemic stroke diagnostic codes upon separation: ICD-9: 433, 434, and 436 or ICD-10: I63-I64]. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* in-patient care admission for any type of stroke in any diagnosis field [ICD-10: I60-I64 and I69] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered**: Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

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### *Ischaemic Stroke – All-cause mortality or all-cause readmission within 365 days after discharge (ICISCMACR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: Measure level of adverse outcomes (readmission or mortality) that could be avoided provided optimal quality of care integration between hospital and general primary healthcare. The indicator requires data linkage between hospital and death registries. When subtracting IC3), provides an unbiased measure of avoidable readmissions.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time ischaemic stroke. A first-time ischaemic stroke is defined as an ischaemic stroke among persons with no *hospital admission* for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for any type of stroke from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess mortality and readmissions. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** The number of patients in the denominator who died within 365 days after discharge from the index episode of care or who were readmitted to *hospital* for *urgent (non-elective)* in-patient care of any condition at least once within 365 days after discharge from the index episode of care. If a patient was readmitted and died in the specified period, this patient should be counted only once. Elective admissions are not included. Day cases should not be considered hospital admission.

**Denominator:** Number of persons discharged alive from hospital after *urgent (non-elective)* episode of care with a *principal diagnosis* of a first-time ischaemic stroke from 1 January to 31 December in the specified year [Ischaemic stroke diagnostic codes upon separation: ICD-9: 433, 434, and 436 or ICD-10: I63-I64]. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* in-patient care admission for any type of stroke in any diagnosis field [ICD-10: I60-I64 and I69] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

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### *Ischaemic Stroke – All-cause mortality or disease-specific readmission within 365 days after discharge (ICISCMDSR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: Measure level of adverse outcomes (readmission or mortality) that could be avoided provided optimal quality of care integration between hospital and specialty healthcare. The indicator requires data linkage between hospital and death registries. When subtracting IC3), provides an unbiased measure of avoidable readmissions.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time ischaemic stroke. A first-time ischaemic stroke is defined as an ischaemic stroke among persons with no hospital admission for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for any type of stroke from 7 July 2013 to 6 July 2018; data for

2019 is needed to assess mortality and readmissions. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** The number of patients in the denominator who died within 365 days after discharge from the index episode of in-patient care or who were readmitted to hospital for *urgent (non-elective)* in-patient care at least once within 365 days with stroke or late effects (sequelae) of stroke as the principal diagnosis [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69]. If a patient was readmitted and died in the specified period, this patient should be counted only once. Elective admissions are not included. Day cases should not be considered hospital admission.

**Denominator:** Number of persons discharged alive from hospital after *urgent (non-elective)* episode of in-patient care with a principal diagnosis of a first-time ischaemic stroke from 1 January to 31 December in the specified year [Ischaemic stroke diagnostic codes upon separation: ICD-9: 433, 434, and 436 or ICD-10: I63-I64]. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for any type of stroke in any diagnosis field [ICD-10: I60-I64 and I69] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

---

### *CHF - All-cause hospital readmissions within 365 days after discharge (ICCHFACR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** Measure level of adverse outcome (readmission) that could be avoided provided optimal quality of care integration between hospital and general primary healthcare.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time episode of care for heart failure. A first-time episode of care for heart failure is defined as persons with no hospital admission for heart failure [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for heart failure from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess readmissions. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** The number of patients in the denominator who were readmitted to hospital for *urgent (non-elective)* in-patient care of any condition at least once within 365 days after discharge from the index episode of care. Elective admissions are not included. Day cases should not be considered hospital admission.

**Denominator:** Number of persons discharged alive from hospital after first *urgent (non-elective)* episode of in-patient care with a principal diagnosis of heart failure from 1 January to 31 December in the specified year. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for heart failure in any diagnosis field [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

### *CHF – Disease-specific hospital readmissions within 365 days after discharge (ICCHFDSR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: Measure level of adverse outcome (readmission) that could be avoided provided optimal quality of care integration between hospital and specialty healthcare.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time episode of care for heart failure. A first-time episode of care for heart failure is defined as persons with no hospital admission for heart failure [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for heart failure from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess readmission. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** Number of persons in the denominator who were readmitted to *urgent (non-elective)* in-patient care at least once with a principal diagnosis for heart failure within 365 days after discharge. [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493]. Elective admissions are not included. Day cases should not be considered hospital admission.

**Denominator:** Number of persons discharged alive from hospital after first *urgent (non-elective)* episode of care with a principal diagnosis of heart failure from 1 January to 31 December in the specified year. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for heart failure in any diagnosis field [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

### *CHF- All-cause mortality within 365 days after discharge (ICCHFACM)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: Measure level of ultimate adverse outcome (death) that could be avoided provided optimal quality of integrated care delivery.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time episode of care for heart failure. A first-time episode of care for heart failure is defined as persons with no hospital admission for heart failure [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for heart failure from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess mortality. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** Number of all deaths within 365 days after discharge among those cases meeting the inclusion and exclusion rules for the denominator.

**Denominator:** Number of persons discharged alive from hospital after first *urgent (non-elective)* episode of care with a principal diagnosis of heart failure from 1 January to 31 December in the specified year. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for heart failure in any diagnosis field [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered**: Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

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### *CHF- All-cause mortality or all-cause readmission within 365 days after discharge (ICCHFMACR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: Measure level of adverse outcomes (readmission or mortality) that could be avoided provided optimal quality of care integration between hospital and general primary healthcare. The indicator requires data linkage between hospital and death registries. When subtracting IC8), provides an unbiased measure of avoidable readmissions.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time episode of care for heart failure. A first-time episode of care for heart failure is defined as persons with no hospital admission for heart failure [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, for instance, an incident on 7 July 2018, and no admission for heart failure from 7 July 2013 to 6 July8; data for 2019 is needed to assess mortality and readmissions. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** The number of patients in the denominator who died within 365 days after discharge from the index episode of care or who were readmitted to hospital for *urgent (non-elective)* in-patient care of any condition at least once within 365 days after discharge from the index episode of care. If a patient was readmitted and died in the specified period, this patient should be counted only once. Elective admissions are not included. Day cases should not be considered hospital admission.

**Denominator:** Number of persons discharged alive from hospital after first *urgent (non-elective)* episode of in-patient care with a principal diagnosis of heart failure from 1 January to 31 December in the specified year. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for heart failure in any diagnosis field [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

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### *CHF- All-cause mortality or disease-specific readmission within 365 days after discharge (ICCHFMDSR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** Measure level of adverse outcomes (readmission or mortality) that could be avoided provided optimal quality of care integration between hospital and specialty healthcare. The indicator requires data linkage between hospital and death registries. When subtracting IC8), provides an unbiased measure of avoidable readmissions.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived *urgent (non-elective)* episode of in-patient care for a first-time episode of care for heart failure. A first-time episode of care for heart failure is defined as persons with no hospital admission for heart failure [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for heart failure from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess mortality and readmissions. Countries may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** The number of patients in the denominator who died within 365 days after discharge from the index episode of care or who were readmitted to in-patient care at least once with a principal diagnosis for heart failure within 365 days after discharge. [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493]. If a patient was readmitted and died in the specified period, this patient should be counted only once. Elective admissions are not included. Day cases should not be considered hospital admission.

**Denominator:** Number of persons discharged alive from hospital after first *urgent (non-elective)* episode of in-patient care with a principal diagnosis of heart failure from 1 January to 31 December in the specified year. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for heart failure in any diagnosis field [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in previous 5 years are excluded. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

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### *CHF – Case fatality within 30 days of the admission date (ICCHFCF)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** Measure level of ultimate adverse outcome (death) that could be avoided provided optimal quality of integrated post-discharge care delivery.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who are admitted for an *urgent (non-elective)* episode of in-patient care for heart failure. A first-time episode of care for heart failure is defined as persons with no hospital admission for heart failure [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in the previous 5 years (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, an incident on 7 July 2018, and no admission for heart failure from 7 July 2013 to 6 July 2018. Countries

may adopt a shorter washout period when necessary, conditional upon providing details in the Sources and Methods questionnaire.

**Numerator:** The number of patients in the denominator who died (either in hospital or out of hospital) within 30 days of the last hospital admission date.

**Denominator:** Number of persons discharged alive or dead from hospital after first *urgent (non-elective)* episode of in-patient care with a principal diagnosis of heart failure from 1 January to 31 December in the specified year. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for heart failure [ICD-10: I11.0, I13.0, I13.2, and I50 or ICD-9: 428XX, 40201, 40211, 40291, 40401, 40411, 40413, 40491, 40493] in any diagnosis field in previous 5 years are excluded. Please note only one admission per patient is to be counted in the denominator and the numerator is calculated by following up all denominator cases for up to 30 days from date of admission. Day cases are not included.

**Data to be delivered:** Data will be collected at national level for both the numerator and the denominator by 10-year age group and sex.

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### *Ischaemic Stroke - Prescribed antihypertensive medicines between 12 and 18 months after ischaemic stroke (ICISCPHT)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** High blood pressure is the leading risk factor for stroke, increasing the likelihood of recurrent strokes and other cardiovascular diseases. Antihypertensive treatment is therefore a cornerstone of post-stroke therapy. Measuring pharmacological treatment between 12 and 18 months after acute stroke care reflects the effectiveness of secondary prevention outside the hospital and serves as an indicator of care integration between primary and post-discharge care.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived 18-months after a first-time, acute, non-elective (urgent) episode of care for ischaemic stroke. A first-time ischaemic stroke is defined as an ischaemic stroke among persons with no hospital admission for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69].] in the previous 5 years[1] (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, for instance, an incident on 7 July 2018, and no admission for any type of stroke from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess prescriptions.

**Numerator:** The number of stroke cases in the denominator with at least one prescribed antihypertensive medicine from the list below within the 182 day (i.e. 6-month) time window between 12 months and 18 months after the hospital discharge date of the first-time episode of care for ischaemic stroke. To clarify: For patients discharged alive in the year 2018, prescription data for both 2019 and the first 6 months of 2020 is needed to follow all discharged cases in a time interval of day 365 to day 547 after discharge.

- Antihypertensive medicines, ATC codes:
  - alpha-blocker and methyldopa, C02
  - diuretics, C03
  - beta blockers C07
  - calcium channel blockers, C08

[1] Where not possible, countries are welcomed to apply shorter washout periods.

- renin-angiotensin-aldosterone system (RAAS) inhibitors (N.B. includes angiotensin converting enzyme inhibitors, ACE inhibitors; angiotensin receptor blockers, ARB), C09

**Denominator**: Number of persons discharged alive from hospital for *urgent (non-elective)* care with a *principal diagnosis* of a first-time ischaemic stroke from 1 January to 31 December in the specified year discharged from hospital and surviving 18 months after discharge. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69].] in any diagnosis field in the previous 5 years are excluded. Day cases are not included.

**Data to be delivered**: Data will be collected for national level data for both the numerator and the denominator for 10-year age. Where possible, countries are welcome to share data at subnational level.

1. In the case of small numbers in cells (<5 cases), countries can round numbers or zero to maintain patient data confidentiality. Countries should report which approach they followed in Sources and Methods section.

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### *Ischaemic Stroke - Prescribed antithrombotics between 12 and 18 months after ischaemic stroke (ICISCPTR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** Prescribing antithrombotics is a vital component of post-stroke care for ischemic stroke patients. These drugs inhibit platelet aggregation, preventing arterial clots and lowering the risk of ischemic events. Measuring pharmacological treatment between 12 and 18 months after ischemic stroke care reflects the effectiveness of secondary prevention outside the hospital and serves as an indicator of care integration between primary and post-discharge care.

**Coverage:** This indicator is measured in a population of patients aged 45 years and older who survived 18-months after a first-time, acute, non-elective (urgent) episode of care for ischaemic stroke. A first-time ischaemic stroke is defined as an ischaemic stroke among persons with no hospital admission for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69] in the previous 5 years[2] (i.e. considering a washout period of 5 years or 1825 days). Example: a wash out period of 5 years means, for instance, an incident on 7 July 2018, and no admission for any type of stroke from 7 July 2013 to 6 July 2018; data for 2019 is needed to assess prescriptions.

**Numerator:** The number of stroke cases in the denominator with at least one prescribed antiplatelet medicine or anticoagulant from the list below within the 182 day (i.e. 6-month) time window between 12 months and 18 months after the hospital discharge date of the first-time episode of care for ischaemic stroke. To clarify: For patients discharged alive in the year 2018, prescription data for both 2019 and the first 6 months of 2020 is needed to follow all discharged cases in a time interval of day 365 to day 547 after discharge.

- Antithrombotics, ATC codes:
  - Antiplatelet medications
    - aspirin (B01AC06), clopidogrel (B01AC04), ticagrelor (B01AC24), prasugrel (B01AC22), eptifibatide (B01AC16), dipyridamole (B01AC07), carbasalate calcium (B01AC08), the combination of aspirin plus extended-release dipyridamole (B01AC30) and cilostazol (B01AC23)

[2] Where not possible, countries are welcomed to apply shorter washout periods.

  - Other combinations of cardiac or lipid-lowering agents including aspirin (B01AC56, C10BX12, C10BX06, C10BX08, C07FX04, C07FX03, C10BX02, C10BX05, C10BX01, C10BX04, C07FX02)
- Anticoagulants
  - warfarin (B01AA03), dabigatran (B01AE07), apixaban (B01AF02), edoxaban (B01AF03), fenprocoumon (B01AA04), acenocoumarol (B01AA07), rivaroxaban (B01AF01)

**Denominator**: Number of persons discharged alive from hospital for *urgent (non-elective)* care with a *principal diagnosis* of a first-time ischaemic stroke from 1 January to 31 December in the specified year discharged from hospital and surviving 18 months after discharge. The denominator is restricted to persons aged 45 years or older at the day of admission. Patients who had an *urgent (non-elective)* care admission for any type of stroke [ICD-9: 430, 431, 432, 433X1, 434X1, 438 or ICD-10: I60-I64 and I69].] in any diagnosis field in the previous 5 years are excluded. Day cases are not included.

**Data to be delivered**: Data will be collected for national level data for both the numerator and the denominator for 10-year age. Where possible, countries are welcome to share data at subnational level.

In the case of small numbers in cells (<5 cases), countries can round numbers or zero to maintain patient data confidentiality. Countries should report which approach they followed in Sources and Methods section.

## MENTAL HEALTHCARE (MH) INDICATORS

Indicators in the mental care indicator set include:

- MH1) Death from suicide within 1 year after discharge among patients discharged with a mental disorder (MORTSUMD)
- MH2) Death from suicide within 30 days after discharge among patients discharged with a mental disorder (MORTSUMS)
- MH3) Excess mortality in people diagnosed with schizophrenia (EXCESCHI)
- MH4) Excess mortality in people diagnosed with bipolar disorder (EXCEBIPO)

**NOTES**

Excess mortality indicators represent a ratio of two mortality rates (**Rate 1** and **Rate 2**) and aim to measure the excess mortality from all causes in people who have a diagnosis of the respective condition. **Rate 1** for these indicators equals the "all cause" mortality rate for all persons aged between 15 and 74 years old in the population diagnosed with the respective condition (schizophrenia, bipolar disorder). **Rate 2** equals the all-cause mortality rate for all persons aged between 15 and 74 in the total population.

Ideal data source for the denominator population in **Rate 1** is a complete register of all people who have ever had a relevant diagnosis but countries without complete registers should consider and assess the suitability of following datasets **provided they can be linked with mortality data**:

- Partial registers (e.g. covering one or more regions)
- Unique patients with a principal or first two listed secondary diagnoses of schizophrenia or bipolar disorder from combined inpatients/outpatients aggregated data, over a number of years (preferably at least 5)
- Representative health surveys
- Unique patients prescribed relevant medicines
- Primary care or other patient databases
- Insurance data

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### *Death from suicide within 1 year after discharge among patients discharged with a mental disorder (MORTSUMD)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor the quality of mental healthcare and high-quality mental healthcare could minimise suicide among patients discharged with a mental disorder.

**Coverage:** Patients aged 15 years and older (5-year age group)

**Numerator:** Number of patients among denominator cases that committed suicide (ICD-10 codes: X60-X84) within 1 year after discharge. Please note that only suicide should be included – i.e. suicide attempts and self-harm not resulting in death should be excluded.

**Denominator:** Number of patients discharged alive with a *principal* or *secondary diagnosis* code of mental health and behavioural disorders (ICD-10 codes F10-F69 and F90-99) in the year. If secondary diagnosis

codes are not equally important, please use a principal diagnosis or first two listed secondary diagnosis code of mental health and behavioural disorders. In cases with several admissions during the year, the follow up period starts from the last discharge (discharge from a hospital and thus not from one department to another).

**Note**: This indicator requires data that links hospital records with deaths after discharge.

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### *Death from suicide within 30 days after discharge among patients discharged with a mental disorder (MORTSUMS)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor the quality of mental healthcare and high-quality mental healthcare could minimise suicide among patients discharged with a mental disorder.

**Coverage:** Patients aged 15 years and older (5-year age group)

**Numerator:** Number of patients among denominator cases that committed suicide (ICD-10 codes:X60-X84) within 30 days after discharge. Please note that only suicide should be included – i.e. suicide attempts and self-harm not resulting in death should be excluded.

**Denominator:** Number of patients discharged alive with a *principal* or *secondary diagnosis* code of mental health and behavioural disorders (ICD-10 codes F10-F69 and F90-99) in the year. If secondary diagnosis codes are not equally important, please use a principal diagnosis or first two listed secondary diagnosis code of mental health and behavioural disorders. In cases with several admissions during the year, the follow up period starts from the last discharge (discharge from a hospital and thus not from one department to another).

Note: This indicator requires data that links hospital records with deaths after discharge.

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### *Excess mortality in people diagnosed with schizophrenia (EXCESCHI)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor overall health outcomes of people diagnosed with schizophrenia compared to those of general population.

The indicator will be the ratio of Rate 1: Rate 2

**Rate 1:** Directly age- and sex-standardised “all cause” mortality rate in the year for all persons aged between 15 and 74 years old in the population with schizophrenia. The standardisation is done by the OECD, and crude age-group-specific rates are requested from countries. Rate should be provided per 100 000 people with at least two decimal points.

**Coverage:** Patients aged between 15 and 74 years (5-year age groups)

**Numerator:** All deaths among the denominator population in the year.

**Denominator:** All people aged 15-74 years ever diagnosed with schizophrenia (see list of ICD codes) as obtained from a register or equivalent data source in the year.

**Rate 2:** Directly age- and sex-standardised “all cause” mortality rate in the same year for all persons aged between 15 and 74 years old in the total population. The standardisation is done by the OECD, and crude

age-group-specific rates are requested from countries. Rate should be provided per 100 000 people with at least two decimal points.

**Coverage:** People aged between 15 and 74 years (5-year age groups)

**Numerator:** All deaths among the denominator population in the year.

**Denominator:** All people aged 15-74 years in the year.

**Schizophrenia diagnostic codes:**

| ICD-9-CM | | ICD-10-WHO | |
|---|---|---|---|
| 295.0 | Simple type of schizophrenia | F20 | Schizophrenia |
| 295.1 | Disorganised type of schizophrenia | F21 | Schizotypal disorder |
| 295.2 | Catatonic type of schizophrenia | F23.1 | Acute polymorphic psychotic disorder with symptoms of schizophrenia |
| 295.3 | Paranoid type of schizophrenia | | |
| 295.4 | Acute schizophrenic episode | F23.2 | Acute schizophrenia-like psychotic disorder |
| 295.5 | Latent schizophrenia | F25.0 | Schizoaffective disorders |
| 295.6 | Residual schizophrenia | F25.1 | Schizoaffective disorder, depressive type |
| 295.7 | Schizoaffective type of schizophrenia | F25.2 | Schizoaffective disorder, mixed type |
| 295.8 | Other specified types of schizophrenia | F25.8 | Other schizoaffective disorders |
| | | F25.9 | Schizoaffective disorder, unspecified |
| 295.9 | Unspecified schizophrenia | | |

### *Excess mortality in people diagnosed with bipolar disorder (EXCEBIPO)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective**: This indicator aims to monitor overall health outcomes of people diagnosed with schizophrenia compared to those of general population.

The indicator will be the ratio of Rate 1: Rate 2

**Rate 1:** Directly age- and sex-standardised “all cause” mortality rate in the year for all persons aged between 15 and 74 years old in the population with bipolar disorder. The standardisation is done by the OECD, and crude age-group-specific rates are requested from countries. Rate should be provided per 100 000 people with at least two decimal points.

**Coverage:** Patients aged between 15 and 74 years (5-year age groups)

**Numerator:** All deaths among the denominator population in the year.

**Denominator:** All people aged 15-74 years ever diagnosed with bipolar disorder (see list of ICD codes) as obtained from a register or equivalent data source in the year.

**Rate 2:** Directly age- and sex-standardised “all cause” mortality rate in the same year for all persons aged between 15 and 74 years old in the total population. The standardisation is done by the OECD, and crude age-group-specific rates are requested from countries. Rate should be provided per 100 000 people with at least two decimal points.

**Coverage:** People aged between 15 and 74 years (5-year age groups)

**Numerator:** All deaths among the denominator population in the year.

**Denominator:** All people aged 15-74 in the year.

**Bipolar disorder diagnostic codes:**

| ICD-9-CM | ICD-10-WHO |
|---|---|
| 296.4 Bipolar affective disorder, manic | F31 Bipolar affective disorder |
| 296.5 Bipolar affective disorder, depressed | |
| 296.6 Bipolar affective disorder, mixed | |
| 296.7 Bipolar affective disorder, unspecified | |
| 296.8 Manic depressive psychosis, other and unspecified | |

## PATIENT SAFETY (PS) INDICATORS

Indicators in the Patient safety indicator (PSI) set include:

- Postoperative pulmonary embolism (PE) following hip and knee replacement, identified during the surgical hospital admission (unlinked data) (POSTPESP)
- Postoperative pulmonary embolism (PE) following hip and knee replacement, identified within 30 days of surgical hospital admission (linked data) (POSTPESW)
- Postoperative deep vein thrombosis (DVT) following hip and knee replacement, identified during the surgical hospital admission (unlinked data) (POSTDVSP)
- Postoperative deep vein thrombosis (DVT) following hip and knee replacement, within 30 days of surgical hospital admission (linked data) (POSTDVSW)
- Post-operative sepsis following abdominopelvic surgery, identified during the surgical hospital admission (unlinked data) (POSTSESP)
- Post-operative sepsis following abdominopelvic surgery, identified within 30 days of surgical hospital admission (linked data) (POSTSESW)
- PS13) Obstetric trauma vaginal delivery with instrument (OBSTVDWI)
- PS14) Obstetric trauma vaginal delivery without instrument (OBSTVDWO)

**NOTES**

The following abbreviations are used in the indicator algorithms and questionnaire to denote specified data outputs for the HCQO data collection:

| | |
|---|---|
| **DEN** | Denominator dataset |
| **LOS** | Length of stay |
| **NUM** | Numerator dataset |
| **PDX** | Principal diagnosis |

Selected indicators are accompanied by a flow chart to illustrate calculation steps.

Changes to the indicators in the 2025 database – data has been recalculated as needed.

- Definitions of the all patient-based indicators (that require linking admissions of the same patient) have been re-included in the guidelines
- R&D indicators that show DVT/PE in all surgeries and Sepsis in all elective surgeries are included
- Remaining ICD-9 codes have been removed and replaced with ICD-10 codes
    - Obstetric indicators coding updated to align with AHRQ definitions
    - Interruption of vena cava restricted to include only inferior vena cava (ICD-9 did not allow for the distinction, but ICD-10 onwards this is possible)
- Coding changes (requiring re-calculation of historical time-series data)
    - I80.8, I80.9 and I82.8 removed from definition of DVT
    - R57.8, R65.0 and T81.1 removed from definition of sepsis
    - Definition of sepsis revised to be more comprehensive, including all types of sepsis
    - Definition of abdominopelvic surgery provided through description

### *Postoperative pulmonary embolism (PE) following hip and knee replacement, identified during the surgical hospital admission (**unlinked data) (POSTPESP)***

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** The incidence of PE/DVT after a hip or knee replacement can indicate how well safety is ensured through postoperative action. There is a higher chance of a PE/DVT in patients that are staying in or recently left hospital – especially for patients with low mobility such as those who have had a hip or knee replacement. If a patient is assessed as having a high risk of blood clots, they should be given preventive treatment, including medicine or compression stockings.

**Coverage:** Hip and knee replacement discharges for patients aged 15 and older.

**Numerator:** Discharges among cases defined in the denominator with ICD code for pulmonary embolism in a *secondary diagnosis* field during the surgical admission (see ICD codes below).

**Denominator:** Total hip and knee replacement discharges, meeting the inclusion and exclusion rules with an procedure code (e.g. ICD) for an operating room procedure.

**Exclude from numerator and denominator:**

- **Obstetric hospitalisations -** Cases assigned to an obstetric DRG, e.g. from *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 5. Glossary "Obstetric hospitalisations" in this document for details.
- **IVC** - Cases from the numerator and denominator where a procedure for interruption of **inferior** vena cava or insertion of inferior vena cava filter occurs before or on the same day as the first / main operating room procedure
- **PDX** - case with *principal diagnosis* or secondary diagnosis of pulmonary embolism present on admission (if known) during the *surgical admission*,
- **LOS -** *surgical admissions* with length of stay less than 2 days where patient is discharged alive. Patients who died in the hospital should be included.

**ICD-10-PCS Total hip and knee replacement procedure codes (partial replacements to be excluded):**

| Procedure | ICD-10-PCS | ICHI |
|---|---|---|
| **Total hip replacement** | 0SR.[9,B]0J% | MLJ.DN.AA |
| **Revision of hip replacement** | 0SW.[9,B]%JZ | MLJ.KA.AA |
| **Total knee replacement** | 0SR.[C,D,T,U,V,W]0%Z | MMJ.DN.AA |
| **Revision of knee replacement** | 0SW.[C,D]%JZ | MMJ.KA.AA |

Note: ICD-10-PCS codes can be found detailed here: https://icd.codes/icd10pcs/0 and ICHI codes here: https://icd.who.int/dev11/l-ichi/en

**ICD-10-WHO Pulmonary Embolism diagnosis codes:**

| | |
|---|---|
| I26.0 | Pulmonary embolism with mention of acute cor pulmonale |
| I26.9 | Pulmonary embolism without mention of acute cor pulmonale |

### ICD-10-PCS Interruption of inferior Vena Cava procedure codes:

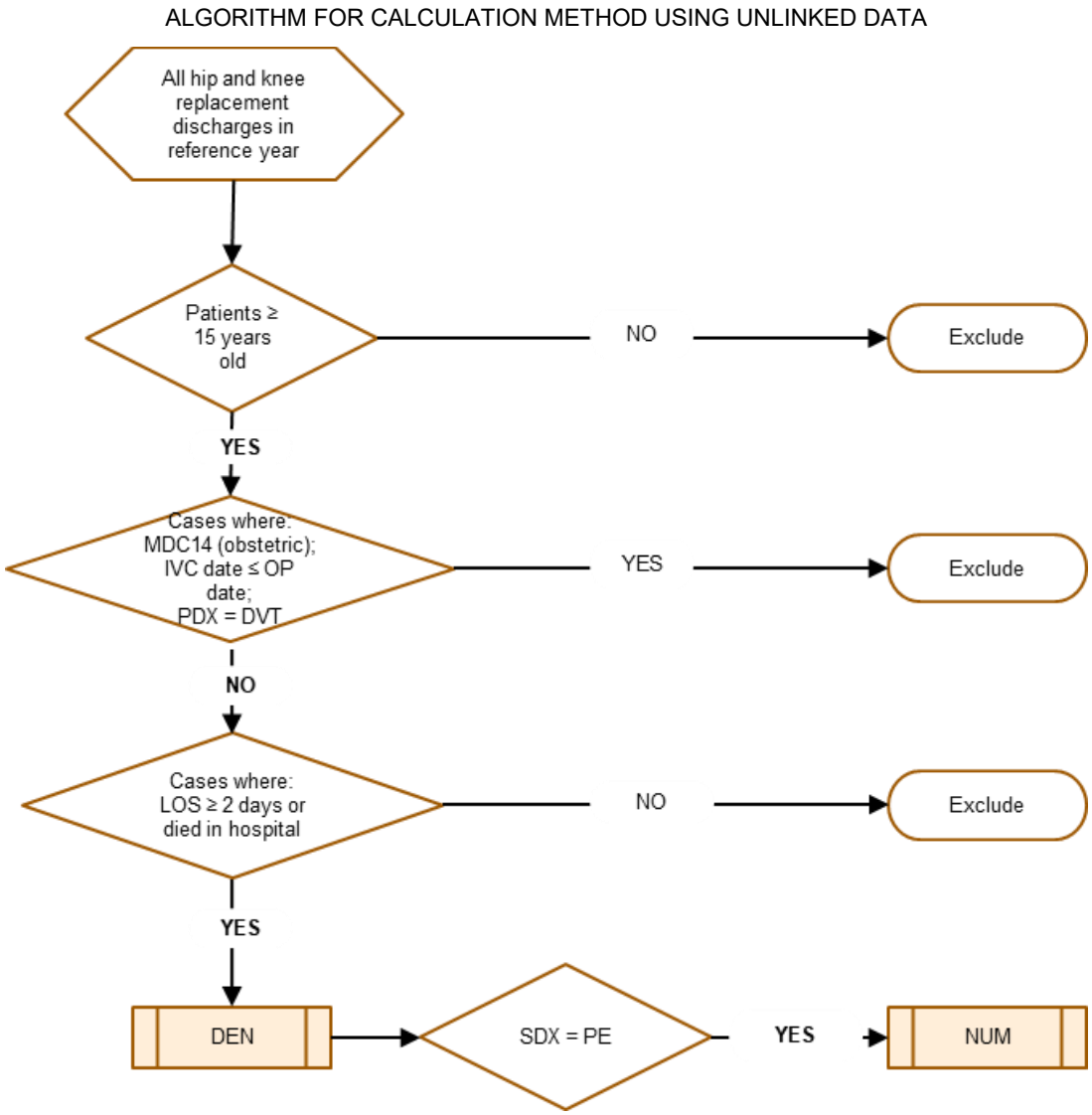
| Procedure | ICD-10-PCS | ICHI |
|---|---|---|
| **Insertion of device in inferior vena cava** | 06H.0%DZ | HIC.DL.AF |
| **Occlusion of inferior vena cava** | 06L.0%[C,D,Z]Z | HIC.LA.AA |
| **Restriction of inferior vena cava** | 06V.0%[C,D,Z]Z | N/A (please include equivalent mapping in your classification system) |

Note: ICD-10-PCS codes can be found detailed here: https://icd.codes/icd10pcs/0 and ICHI codes here: https://icd.who.int/dev11/l-ichi/en . Interruption of vena cava restricted to include only inferior vena cava.

### The Australian Classification of Health Interventions (ACHI) codes:

| | | |
|---|---|---|
| Block [726] | 34800-00 | Interruption of vena cava (restrict to inferior) |
| Block [723] | 35330-00 | Percutaneous insertion of inferior vena cava filter |
| Block [723] | 35330-01 | Open insertion of inferior vena cava filter |

## Figure 2.12. Postoperative pulmonary embolism - hip and knee replacement




OP=IVC: operating procedure for inferior vena cava, PDX: principal diagnosis, PE: pulmonary embolism, LOS: length of stay, DEN: denominator dataset, SDX: secondary diagnosis, NUM: numerator cases based on surgical admission.
Source: OECD.

### *Postoperative pulmonary embolism (PE) following hip and knee replacement, identified within 30 days of surgical* ***hospital admission (linked data) (POSTPESW)***

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** The incidence of PE/DVT after a hip or knee replacement acts as a sentinel event to indicate whether safety is ensured through postoperative action. There is a higher chance of a PE/DVT if you are staying in or recently left hospital – especially if you cannot move around much (like after an operation). If a patient is assessed as having a high risk of DVT, they should be given preventive treatment like medicine or compression stockings. The linked indicator is considered to be more comprehensive as it enables capture of cases that are identified after of the initial hospital stay.

**Coverage:** Hip and knee replacement discharges for patients aged 15 and older.

**Numerator**: Discharges among cases defined in the denominator with ICD code for pulmonary embolism in a secondary diagnosis field during the surgical admission (see ICD codes below) and in any diagnosis field during readmissions within 30 days of the surgery. If the date of surgery is not available, then 30 days from the admission date for the first surgical admission.

- NUM1: complications during the surgical admissions (same as NUM in PS1)
- NUM2: readmissions into the same hospital
- NUM3: readmissions into different hospitals

**Denominator:** Patients discharged after a hip or knee replacement, meeting the inclusion and exclusion rules with an ICD code for an operating room procedure.

**Exclude:**

- **Obstetric hospitalisations -** Cases assigned to an obstetric DRG, e.g. from *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 5. Glossary "Obstetric hospitalisations" in this document for details.
- **IVC** - Cases from the numerator and denominator where a procedure for interruption of **inferior** vena cava or insertion of inferior vena cava filter occurs before or on the same day as the first / main operating room procedure
- Exclude from **NUM1** only (cases identified during the surgical hospital admission):
    - PDX - cases with principal diagnosis or secondary diagnosis present on admission (if known) of pulmonary embolism during the surgical admission (NUM1),
    - LOS - surgical admissions (NUM1) with length of stay less than 2 days.
- Exclude **NUM2** and **NUM3**
    - READM - readmissions more than 30 days after the operation date from the numerator (matched record is not a readmission as cases are considered to be at risk within 30 days)

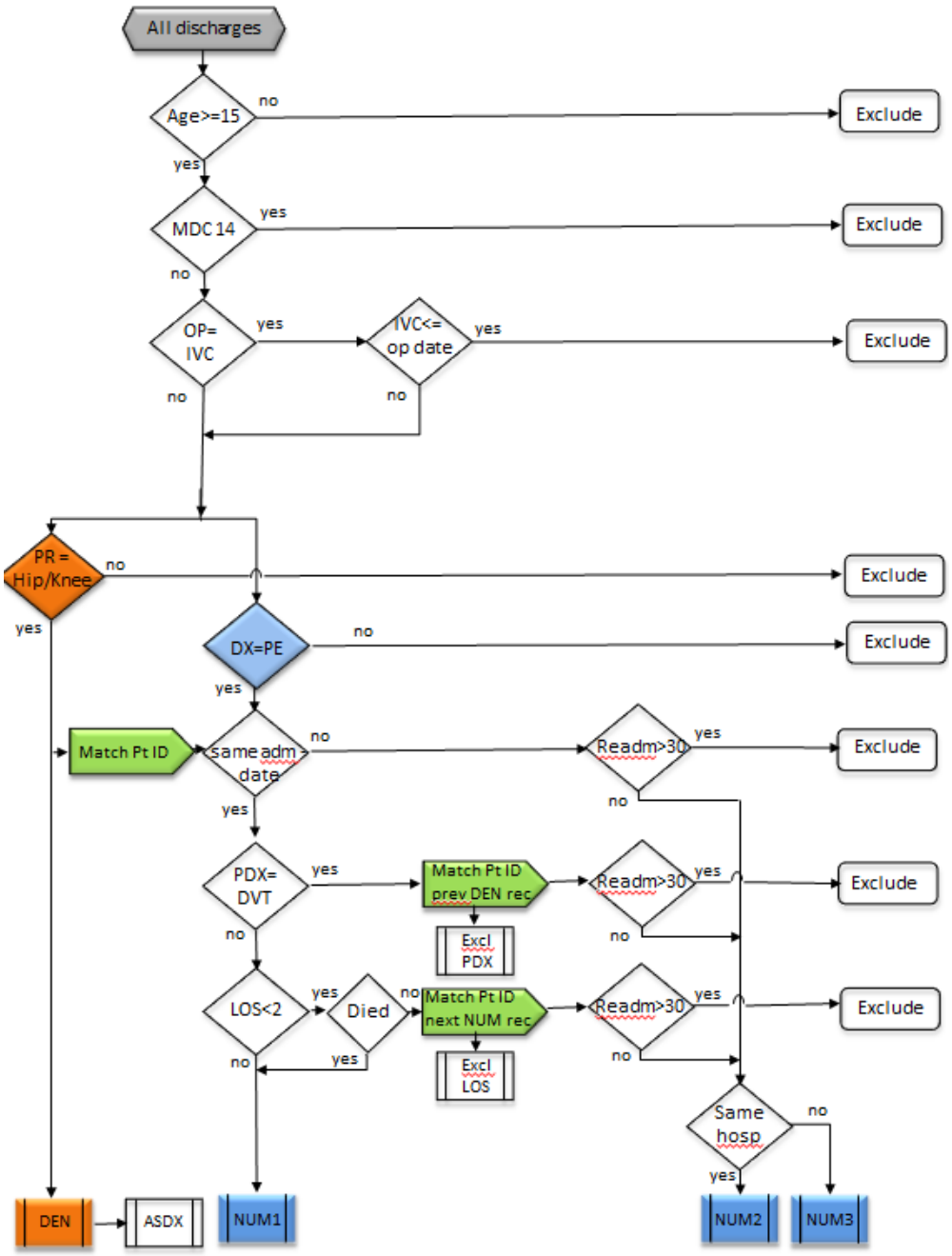
In the linked method, no exclusions for length of stay (LOS) or principal diagnosis (PDX) from NUM2 and NUM3 apply as all denominator cases are considered to be at risk within 30 days.

**ICD-10-PCS Total hip and knee replacement procedure codes (see PS1)**

**ICD-10-WHO Pulmonary Embolism diagnosis codes (see PS1)**

**ICD-10-PCS Interruption of inferior Vena Cava procedure codes (see PS1)**

## Figure 2.13. Postoperative pulmonary embolism - hip and knee replacement



### *Postoperative deep vein thrombosis (DVT) following hip and knee replacement, identified during the surgical hospital admission (unlinked data) (POSTDVSP)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** The incidence of PE/DVT after a hip or knee replacement acts as a sentinel event to indicate whether safety is ensured through postoperative action. There is a hgher chance of a PE/DVT if you are staying in or recently left hospital – especially if you cannot move around much (like after an operation). If a patient is assessed as having a high risk of blood clots, they should be given preventive treatment like medicine or compression stockings.

**Coverage:** Hip and knee replacement discharges for patients aged 15 and older.

**Numerator:** Discharges among cases defined in the denominator with ICD code for deep vein thrombosis in a secondary diagnosis field during the surgical admission (see ICD codes below)

**Denominator:** Hip and knee replacement discharges, meeting the inclusion and exclusion rules with an ICD code for an operating room procedure. Surgical procedures are medical interventions involving an incision with instruments usually performed in an operating theatre and normally involving anaesthesia and/or respiratory assistance.

**Exclude:**

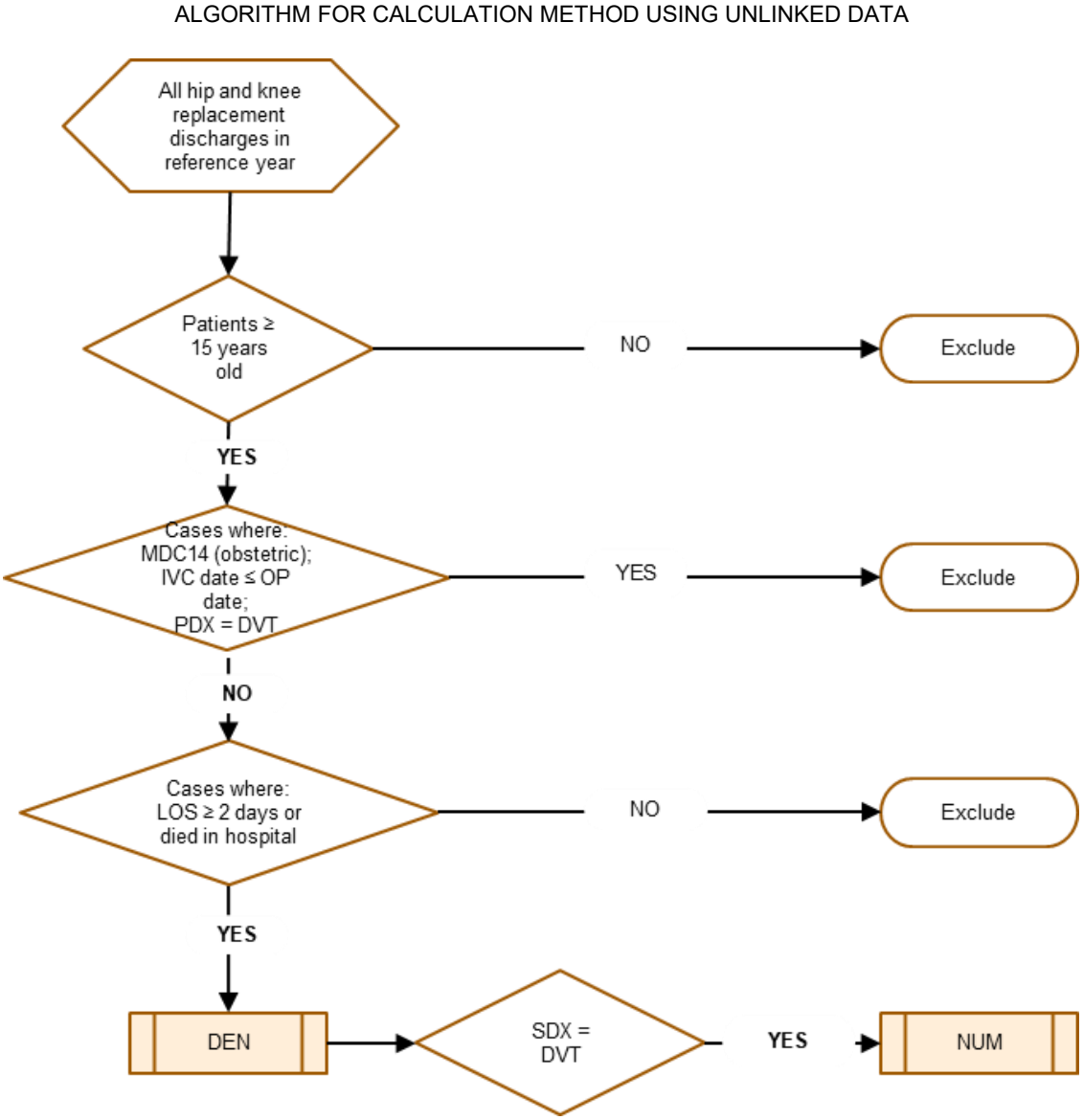
- **Obstetric hospitalisations -** Cases assigned to an obstetric DRG, e.g. from *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 5. Glossary "Obstetric hospitalisations" in this document for details.
- **IVC** - cases from the numerator and denominator where a procedure for interruption of **inferior** vena cava or insertion of inferior vena cava filter occurs before or on the same day as the first / main operating room procedure
- **PE -** if a patient has both PE and DVT, such case is assigned to PE
- **PDX** - cases with principal diagnosis or secondary diagnosis present on admission (if known) of deep vein thrombosis during the surgical admission (NUM1)
  **LOS -** surgical admissions (NUM1) with length of stay less than 2 days where patient is discharged alive.

**ICD-10-WHO Deep Vein Thrombosis diagnosis codes (please note the codes have changed compared to the 2022-23 Data Collection):**

| | |
|---|---|
| I80.1 | Phlebitis and thrombophlebitis of femoral vein |
| I80.2 | Phlebitis and thrombophlebitis of other deep vessels of lower extremities |
| I80.3 | Phlebitis and thrombophlebitis of lower extremities, unspecified |

**ICD-10-PCS Interruption of inferior Vena Cava procedure codes (see PS1)**

## Figure 2.14. Postoperative deep vein thrombosis - hip and knee replacement




OP=IVC: operating procedure for vena cava, PDX: principal diagnosis, PE: pulmonary embolism, DVT: deep vein thrombosis, LOS: length of stay, DEN: denominator dataset, SDX: secondary diagnosis
Source: OECD

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### *Postoperative deep vein thrombosis (DVT) following hip and knee replacement, within 30 days of surgical* ***hospital admission (linked data) (POSTDVSW)***

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** The incidence of PE/DVT after a hip or knee replacement acts as a sentinel event to indicate whether safety is ensured through postoperative action. There is a hgher chance of a PE/DVT if you are staying in or recently left hospital – especially if you cannot move around much (like after an operation). If a patient is assessed as having a high risk of DVT, they should be given preventive treatment like medicine or compression stockings. The linked indicator is considered to be more comprehensive as it enables capture of cases that are identified after of the initial hospital stay.

**Coverage:** Hip and knee replacement discharges for patients aged 15 and older.

**Numerator**: Discharges among cases defined in the denominator with ICD code for deep vein thrombosis in a secondary diagnosis field during the surgical admission (see ICD codes below) and in any diagnosis field during readmissions within 30 days of the surgery. If the date of surgery is not available, then 30 days from the admission date for the first surgical admission.

1. NUM1: complications during the surgical admissions (same as PS5)
2. NUM2: readmissions into the same hospital
3. NUM3: readmissions into different hospitals

**Denominator:** Patients discharged after a hip or knee replacement, meeting the inclusion and exclusion rules with an ICD code for an operating room procedure. Surgical procedures are medical interventions involving an incision with instruments usually performed in an operating theatre and normally involving anaesthesia and/or respiratory assistance.

**Exclude:**

4. **Obstetric hospitalisations -** Cases assigned to an obstetric DRG, e.g. from *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 5. Glossary "Obstetric hospitalisations" in this document for details.
5. **IVC** - cases from the numerator and denominator where a procedure for interruption of **inferior** vena cava or insertion of inferior vena cava filter occurs before or on the same day as the first / main operating room procedure
6. **PE -** if a patient has both PE and DVT, such case is assigned to PE
7. Exclude from **NUM1** only (cases identified during the surgical hospital admission):
    a. PDX - cases with principal diagnosis or secondary diagnosis present on admission (if known) of deep vein thrombosis during the surgical admission (NUM1),
    b. LOS - surgical admissions (NUM1) with length of stay less than 2 days.
8. Exclude **NUM 2** and **NUM3**
    a. READM - readmissions more than 30 days after the operation date from the numerator (matched record is not a readmission as cases are considered to be at risk within 30 days)

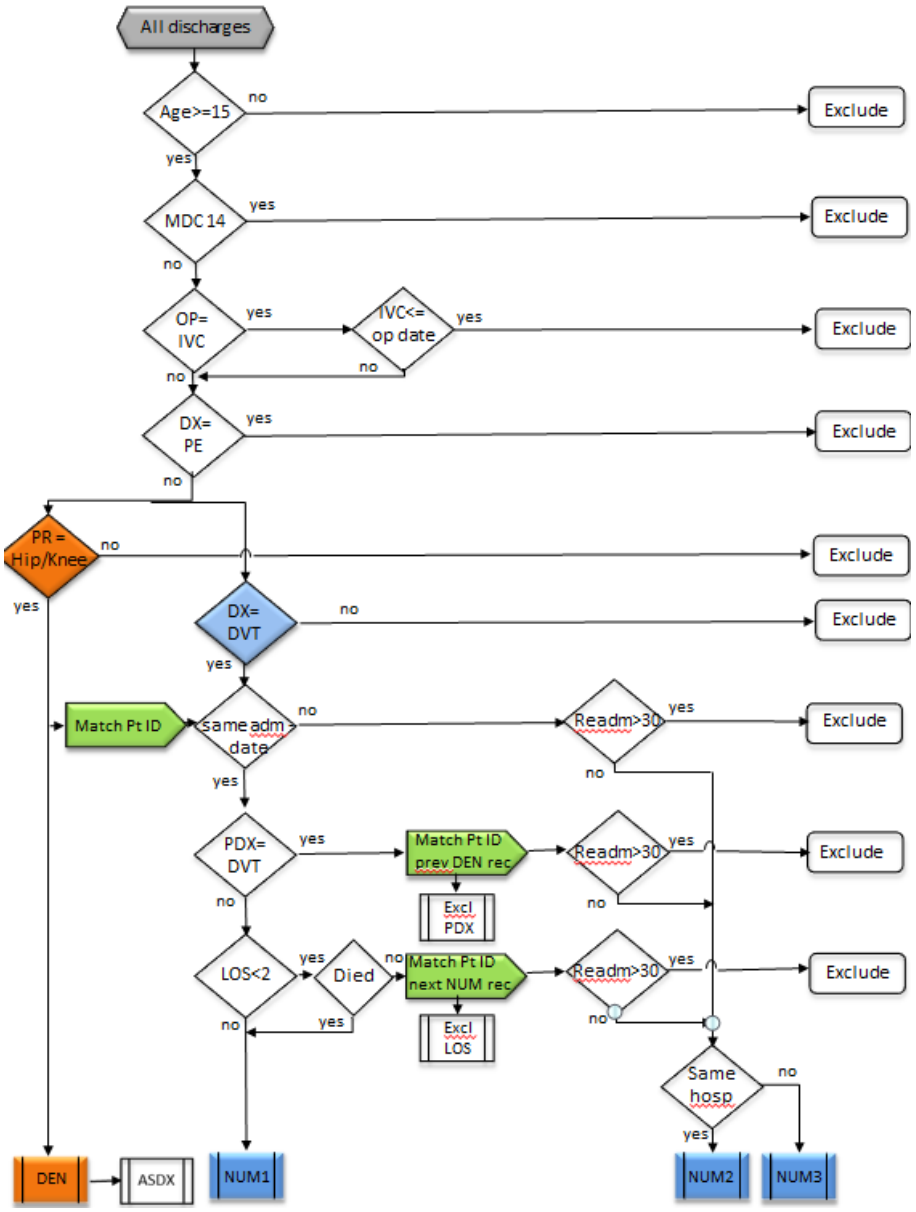
In the linked method, no exclusions for length of stay (LOS) or principal diagnosis (PDX) from NUM2 and NUM3 apply as all denominator cases are considered to be at risk within 30 days.

**ICD-10-PCS Total hip and knee replacement procedure codes (see PS1)**

**ICD-10-WHO Deep Vein Thrombosis diagnosis codes (see PS5)**

**ICD-10-PCS Interruption of inferior Vena Cava procedure codes (see PS1)**

## Figure 2.15. Postoperative deep vein thrombosis - hip and knee replacement



### *Post-operative sepsis following abdominopelvic surgery, identified during the surgical hospital admission (**unlinked data**) (POSTSESP)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** Sepsis, the body's inflammatory response to infection, the definition of which includes organ failure, is among the most common causes of in-hospital death and most expensive conditions to treat. It can provide a proxy indication about ensuring patient safety through infection control. Patients undergoing abdominopelvic surgery are at particularly high risk.

**Coverage:** Abdominal discharges for patients aged 15 and older.

**Numerator:** Discharges among cases defined in the denominator with ICD code for sepsis in a secondary diagnosis field during the surgical admission (see ICD codes below)

**Denominator:** Abdominopelvic surgical discharges only (see below), meeting the inclusion and exclusion rules with an ICD code for an operating room procedure. Surgical procedures are medical interventions involving an incision with instruments usually performed in an operating theatre and normally involving anaesthesia and/or respiratory assistance.

Abdominopelvic surgical discharges: See below

**Exclude:**

- **Obstetric hospitalisations -** Cases assigned to an obstetric DRG, e.g. from *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Section 5. Glossary "Obstetric hospitalisations" in this document for details.
- **INF** - cases from numerator and denominator with *principal diagnosis* of infection or secondary diagnosis present on admission, if known – see ICD codes below,
- **IMM/CA** - cases from numerator and denominator with any code for immunocompromised state or cancer – see ICD codes below
- **PDX** - cases with *principal diagnosis* or diagnosis present on admission (where possible) of sepsis
- **LOS -** length of stay of less than 3 days where patient is discharged alive.

**ICD-10-WHO Sepsis diagnosis codes:**

| | |
|---|---|
| A021 | Salmonella Sepsis |
| A227 | Anthrax Sepsis |
| A267 | Erysipelothrix Sepsis |
| A327 | Listerial Sepsis |
| A40.0 | Septicaemia due to streptococcus, group a |
| A40.1 | Septicaemia due to streptococcus, group b |
| A40.2 | Septicaemia due to streptococcus, group d |
| A40.3 | Septicaemia due to streptococcus pneumoniae |
| A40.8 | Other streptococcal septicaemia |
| A40.9 | Streptococcal septicaemia, unspecified |
| A41.0 | Septicaemia due to staphylococcus aureus |
| A41.1 | Septicaemia due to other specified staphylococcus |
| A41.2 | Septicaemia due to unspecified staphylococcus |
| A41.3 | Septicaemia due to haemophilus influenza |
| A41.4 | Septicaemia due to anaerobes |

| | |
|---|---|
| A41.5 | Septicaemia due to other gram-negative organisms |
| A41.8 | Other specified septicaemia |
| A41.9 | Septicaemia, unspecified |
| A427 | Actinomycotic Sepsis |
| B377 | Candidal Sepsis |
| R57.2 | Septic shock |
| R65.1 | Systemic Inflammatory Response Syndrome of infectious origin with organ failure |

**Abdominopelvic surgical procedures:** Below, you will see a summary of procedure codes to be included:

Surgical procedures are medical interventions involving an incision with instruments usually performed in an operating theatre and normally involving anaesthesia and/or respiratory assistance. Abdominopelvic surgery includes surgical discharge from acute inpatient hospitalisations with surgery in the abdominopelvic area (within the peritoneum, or in the sub-, retro- and intraperitoneal space) on the following body systems:

1. Gastrointestinal system
2. Cardiovascular System in the abdominopelvic area, e.g abdominal arteries and veins, and aorta
3. Reproductive System
4. Genitourinary System
5. Others in the abdominopelvic area (e.g. spleen, abdominal wall)

Procedure types would include procedures typically undertaken in an operating room, including for example:

- shunts and bypasses,
- biopsies involving an incision,
- resections, repairs and revisions,
- transplants,
- minimally invasive procedures with incisions (laparoscopies, closed procedures),
- ectomies (incl partial),
- procedures with robot surgery if there is an incision,
- hernia repair (including with incision to the skin and muscles only)
- transvaginal (partial) hysterectomies and transurethral prostatectomies if there is an incision made

The definition would exclude for example:

- Surgery on the nervous system, incl spine
- Needle biopsies, endoscopies (incl. transluminal), stitches, extracorporeal shock wave lithotripsy, embolisations
- transurethral prostatectomies with laser (TURP)

*Immunocompromised state codes:*

- ICD-10-WHO: See Annex C (Excel sheet - HCQO 2024_25 Data Collection_Annex A-E). Please note the related procedure codes are not specified and countries are requested to search for the relevant codes in their procedure classification systems.

*Cancer codes:*

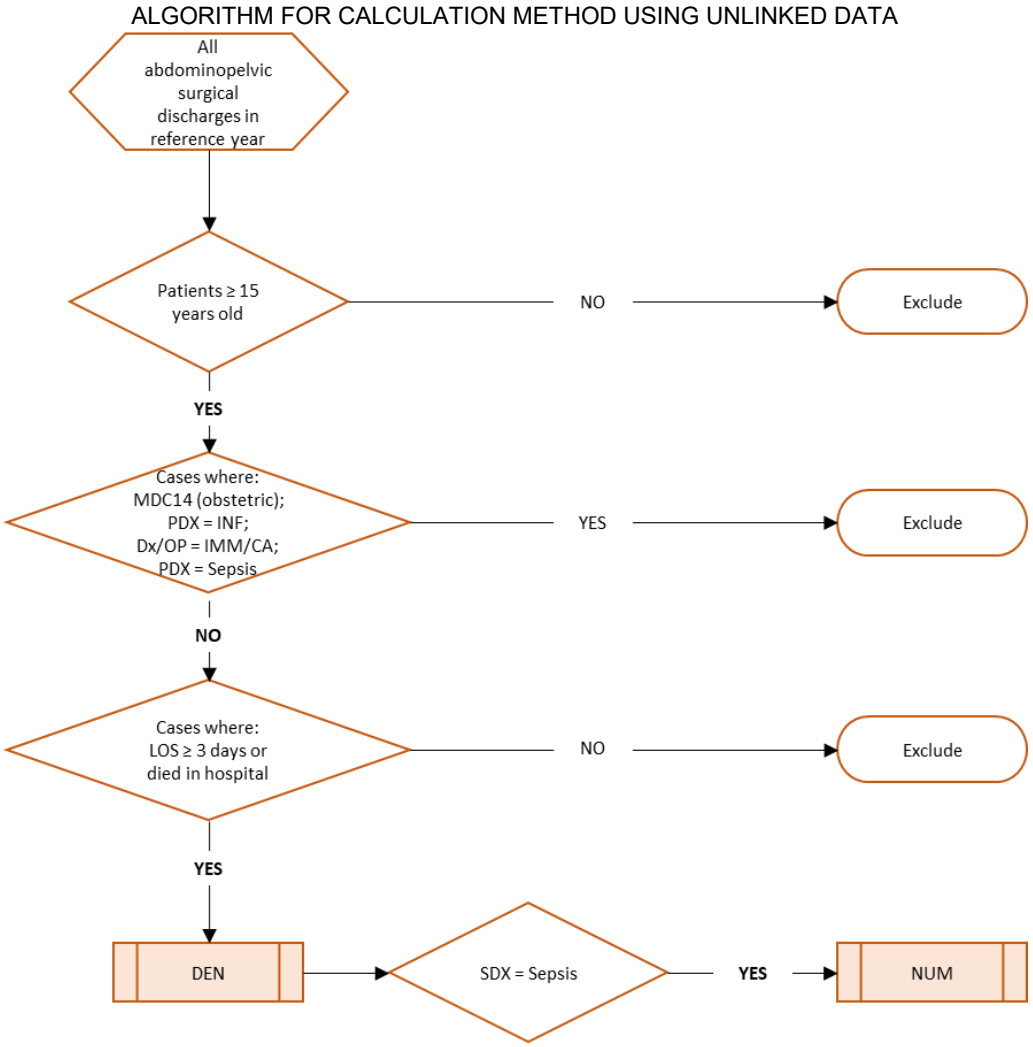
- ICD-10-WHO: See Annex D (Excel sheet - HCQO 2024_25 Data Collection_Annex A-E).

*Infection codes:*

- ICD-10-WHO: See Annex E (Excel sheet - HCQO 2024_25 Data Collection_Annex A-E).

https://qualityindicators.ahrq.gov/Downloads/Modules/PSI/V2022/TechSpecs/PSI_Appendix_F.pdf

### Figure 2.16. Postoperative sepsis




DX/OP=imm/ca: diagnosis or operating procedure immunocompromised satate or cancer, PDX: principal diagnosis, LOS: length of stay, DEN: denominator dataset, SDX: secondary diagnosis, NUM1: numerator cases based on surgical admission
Source: OECD.

### *Post-operative sepsis following abdominopelvic surgery, identified within 30 days of surgical hospital **admission (linked data) (POSTSESW)***

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** Sepsis, the body's inflammatory response to infection, is among the most common causes of in-hospital death and most expensive conditions to treat. It acts as a sentinel event to provide a proxy indication about ensuring patient safety through infection control. Patients undergoing abdominopelvic surgery are at particularly high risk. The linked indicator is considered to be more comprehensive as it enables capture of cases that are identified after of the initial hospital stay.

**Coverage:** Abdominal discharges for patients aged 15 and older.

**Numerator**: Discharges among cases defined in the denominator with ICD code for sepsis in a secondary diagnosis field during the surgical admission (see ICD codes below) and in any diagnosis field during readmissions within 30 days of the surgery. If the date of surgery is not available, then 30 days from the admission date (first surgical admission).

- NUM1: complications during the surgical admissions (same as NUM in PS9)
- NUM2: readmissions into the same hospital
- NUM3: readmissions into different hospitals

**Denominator:** Abdominopelvic surgical discharges only (see PS9), meeting the inclusion and exclusion rules with an ICD code for an operating room procedure. Surgical procedures are medical interventions involving an incision with instruments usually performed in an operating theatre and normally involving anaesthesia and/or respiratory assistance.

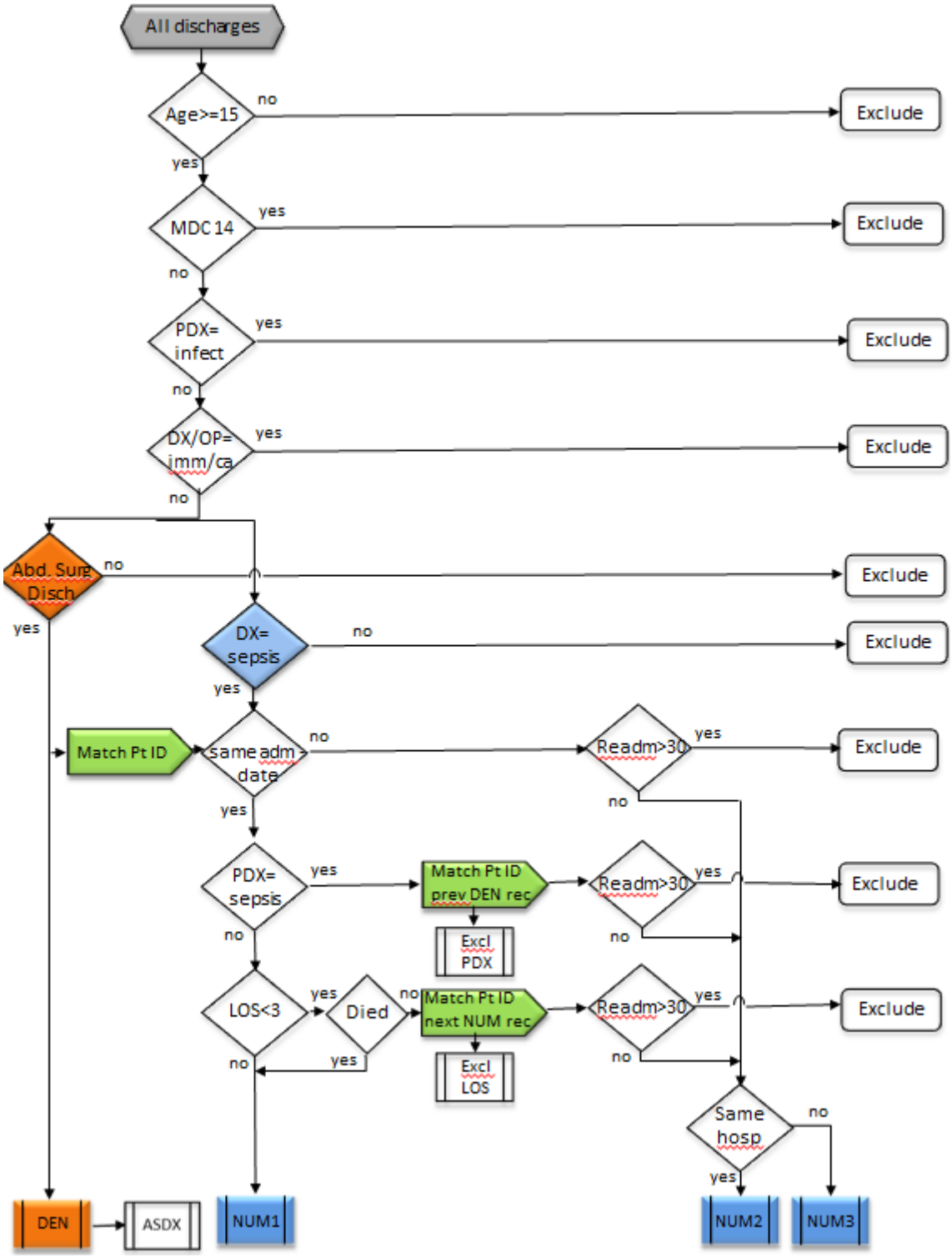
**Exclude:**

- **MDC** - cases from the numerator and denominator for MDC 14 (Pregnancy, childbirth, and puerperium) or principal diagnosis in Annex A: M-3 Code list for MDC 14 (refer to separate MS Excel file)
- **INF** - cases from numerator and denominator with principal diagnosis of infection or secondary diagnosis present on admission, if known – see ICD codes below,
- **IMM/CA** - cases from numerator and denominator with any code for immunocompromised state or cancer – see ICD codes below,
- Exclude from **NUM1** only (cases identified during the surgical hospital admission):
    - PDX - cases with principal diagnosis or secondary diagnosis present on admission (if known) of sepsis during the surgical admission (NUM1),
    - LOS - surgical admissions (NUM1) with length of stay less than 3 days.
- Exclude **NUM2** and **NUM3**
    - READM - readmissions more than 30 days after the operation date from the numerator (matched record is not considered readmission as cases are considered to be at risk within 30 days)

In the linked method, no exclusions for length of stay (LOS) or principal diagnosis (PDX) from NUM2 and NUM3 apply as all denominator cases are considered to be at risk within 30 days.

**ICD-10-WHO Sepsis diagnosis codes (see PS9)**

## Figure 2.17. Postoperative sepsis



### *Obstetric trauma vaginal delivery with **instrument (OBSTVDWI)***

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Coverage:** Vaginal delivery discharges for patients.

**Objective:** This indicator measures severe outcomes of obstetric practises, which are often preventable. The use of instrument is added to stratify based on risk of trauma.

**Numerator:** Discharges among cases defined in the denominator with ICD code for 3rd and 4th degree obstetric trauma in any diagnosis field (see ICD codes below).

**Denominator:** All vaginal delivery discharges with any procedure code for instrument-assisted delivery.

**ICD-10-WHO Obstetric Trauma diagnosis codes:**

| | |
|---|---|
| O70.2 | Third degree perineal laceration during delivery |
| O70.3 | Fourth degree perineal laceration during delivery |

**ICD-10-PCS Vaginal delivery procedure codes:**

| | |
|---|---|
| 10E0XZZ | Delivery of products of conception, external approach |
| 10D07Z7 | Extraction of products of conception, internal version, via natural or artificial opening |
| 10D07Z[3,4,5,6,8] | Extraction of products of conception, via natural or artificial opening: low forceps, mid forceps, high forceps, vacuum, other |

**ICD-10-PCS Instrument-assisted vaginal delivery procedure codes:**

| | |
|---|---|
| 10D07Z[3,4,5,6,8] | Extraction of products of conception, via natural or artificial opening: low forceps, mid forceps, high forceps, vacuum, other |

**Note**: delivery admissions must be classified into four categories:

- c-section deliveries (excluded)
- forceps and vacuum assisted deliveries from which this indicator is calculated
- all other deliveries (including failed forceps/vaccum, episotomy, etc … and non-instrument) from which non-instrument indicator is calculated
  Failed vacuum extraction, failed forceps, assisted breech delivery, episiotomy, incision of cervix and symphysiotomy procedures are not included in the Instrument Assisted Delivery Procedures code list. Therefore, these procedures are excluded from the definition of the ‘with instrument’ indicator and conversely included in the definition of the ‘without instrument’ indicator.

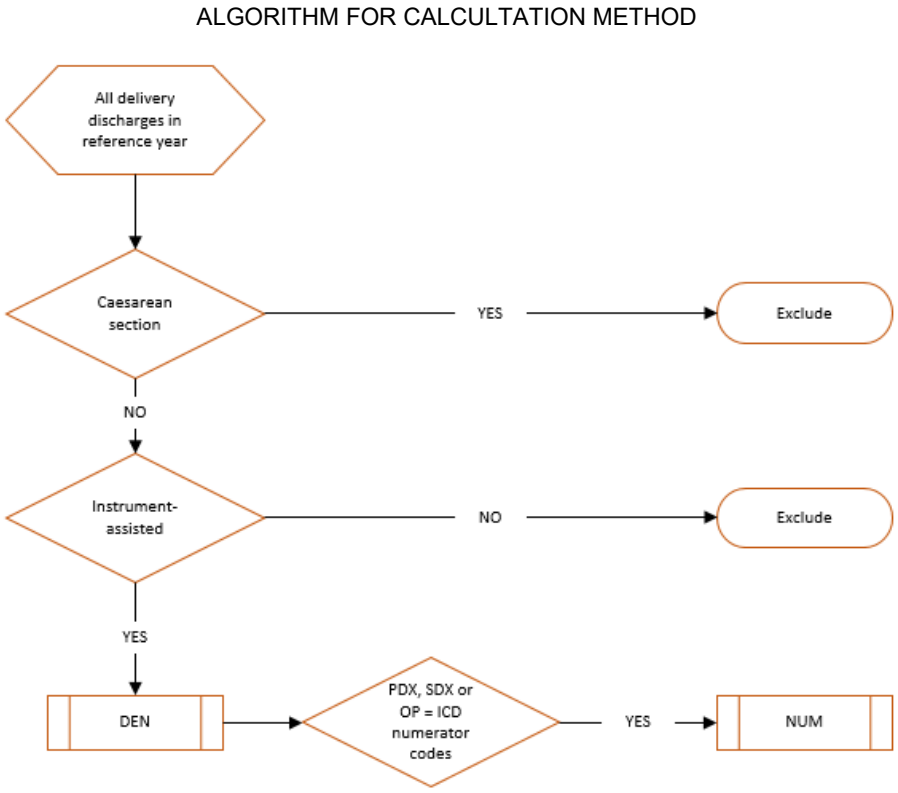
  The use of the instrument is the defining factor for this indicator, meaning e.g. an episiotomy in combination with the use of forceps would be classified under instrument-assisted delivery.

**ICD-10-WHO Outcome of delivery codes:**

**Note**: This category is intended for use as an additional code to identify the outcome of delivery on the mother's record (WHO, 2019).

| | |
|---|---|
| Z37.0 | Single live birth |
| Z37.1 | Single stillbirth |
| Z37.2 | Twins, both liveborn |
| Z37.3 | Twins, one liveborn and one stillborn |
| Z37.4 | Twins, both stillborn |
| Z37.5 | Other multiple births, all liveborn |
| Z37.6 | Other multiple births, some liveborn |
| Z37.7 | Other multiple births, all stillborn |
| Z37.9 | Outcome of delivery, unspecified |

## Figure 2.18. Obstetric trauma vaginal delivery with instrument




PDX: principal diagnosis, DEN: denominator dataset, SDX: secondary diagnosis, NUM: numerator cases, OP: procedure code.
Source: OECD.

### *Obstetric trauma vaginal delivery* ***without instrument (OBSTVDWO)***

*See Section 3.* Glossary *for definitions of italicised terminology.*

**Objective:** This indicator measures severe outcomes of obstetric practises, which are often preventable. The use of instrument is added to stratify based on risk of trauma.

**Coverage:** Vaginal delivery discharges for patients.

**Numerator:** Discharges among cases defined in the denominator with ICD code for 3rd and 4th degree obstetric trauma in any diagnosis field (see ICD codes below).

**Denominator:** All vaginal delivery discharge patients with any outcome of delivery diagnosis code, excluding cases with instrument-assisted delivery.

**ICD-10-WHO Obstetric Trauma diagnosis codes:**

| | |
|---|---|
| O70.2 | Third degree perineal laceration during delivery |
| O70.3 | Fourth degree perineal laceration during delivery |

**ICD-10-PCS Vaginal delivery procedure codes (See PS13)**

**ICD-10-PCS Instrument-assisted delivery procedure codes (See PS13)**

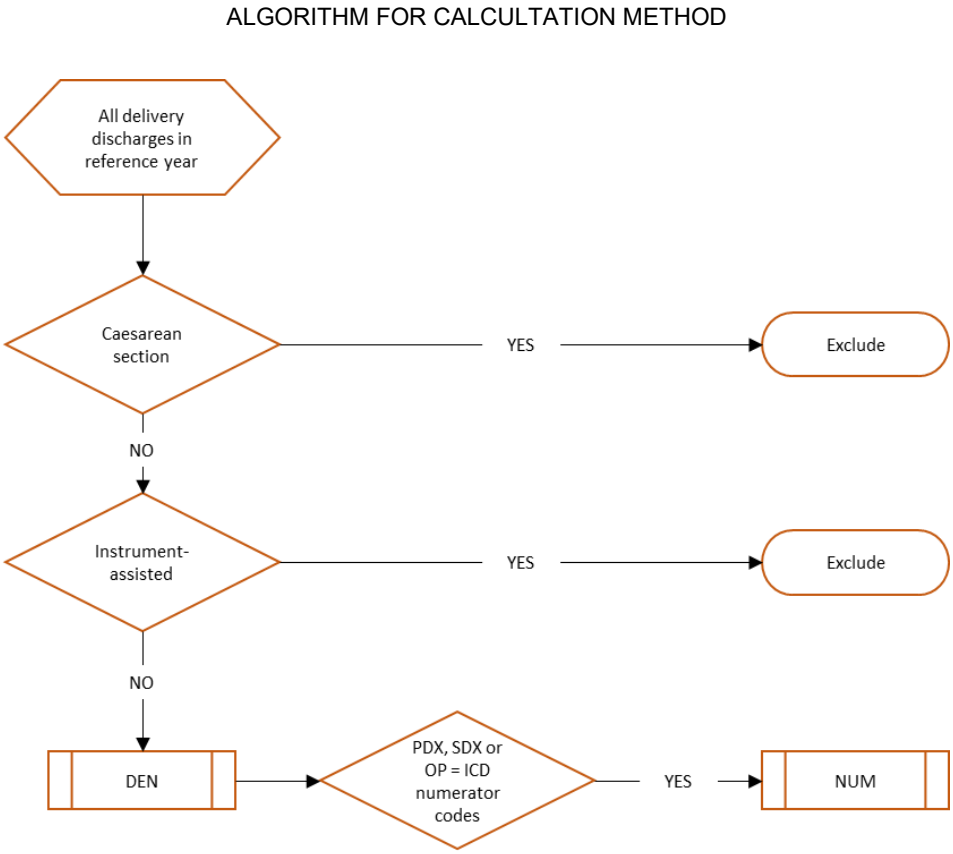
**Note:** Failed vacuum extraction, failed forceps, assisted breech delivery, episiotomy, incision of cervix and symphysiotomy procedures are not included in the Instrument Assisted Delivery Procedures code list. Therefore, these procedures are excluded from the definition of the 'with instrument' indicator and conversely included in the definition of the 'without instrument' indicator.

**ICD-10-WHO Outcome of delivery codes:**

**Note:** This category is intended for use as an additional code to identify the outcome of delivery on the mother's record (WHO, 2019).

| | |
|---|---|
| Z37.0 | Single live birth |
| Z37.1 | Single stillbirth |
| Z37.2 | Twins, both liveborn |
| Z37.3 | Twins, one liveborn and one stillborn |
| Z37.4 | Twins, both stillborn |
| Z37.5 | Other multiple births, all liveborn |
| Z37.6 | Other multiple births, some liveborn |
| Z37.7 | Other multiple births, all stillborn |
| Z37.9 | Outcome of delivery, unspecified |

## Figure 2.19. Obstetric trauma vaginal delivery without instrument




PDX: principal diagnosis, DEN: denominator dataset, SDX: secondary diagnosis, NUM: numerator cases, OP: procedure code.

## PATIENT SAFETY CULTURE (PSC)

The indicators in the Patient Safety Culture indicator set include:

- PSC1) Teamwork (TEAMWORK)
- PSC2) Staffing and workpace (STAFFING)
- PSC2) Organizational Learning—Continuous Improvement (LEARNING)
- PSC4) Response to error (RESPONSE)
- PSC5) Supervisor, manager, or clinical leader support for patient safety (SUPER_SUP)
- PSC6) Communication about error (COM_ERR)
- PSC7) Communication openness (COM_OP)
- PSC8) Reporting patient safety events (REPORT)
- PSC9) Hospital management support for patient safety (HOSP_SUP)
- PSC10) Handoffs and information exchange (HANDOFF)
- PSC11) Patient safety rating (RATING)
- PSC12) Background information: hours worked weekly in hospital (HOURS)

*Note: As this is the first time the PSC indicators are being collected in this data collection, historical data is welcomed.*

### *Teamwork (TEAMWORK)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which staff work together as an effective team, help each other during busy times, and are respectful.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- In this unit, we work together as an effective team.
- During busy times, staff in this unit help each other.
- There is a problem with disrespectful behavior by those working in this unit. (negatively worded)

***Version 1 (Teamwork Within Units):***

- People support one another in this unit.
- When a lot of work needs to be done quickly, we work together as a team to get the work done.

- In this unit, people treat each other with respect.
- When one area in this unit gets really busy, others help out.

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Staffing and work pace (STAFFING)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which there are enough staff to handle the workload, staff work appropriate hours and do not feel rushed, and there is appropriate reliance on temporary, float, or short-term staff.

**Survey target population**: People employed in the *hospital* setting

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- In this unit, we have enough staff to handle the workload.
- Staff in this unit work longer hours than is best for patient care. (negatively worded)
- This unit relies too much on temporary, float, or PRN staff. (negatively worded)
- The work pace in this unit is so rushed that it negatively affects patient safety. (negatively worded)

***Version 1 (Staffing):***

- We have enough staff to handle the workload.
- Staff in this unit work longer hours than is best for patient care. (negatively worded)
- We use more agency/temporary staff than is best for patient care. (negatively worded)
- We work in "crisis mode" trying to do too much, too quickly. (negatively worded)

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Organizational Learning—Continuous Improvement (LEARNING)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which work processes are regularly reviewed, changes are made to keep mistakes from happening again, and changes are evaluated.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- This unit regularly reviews work processes to determine if changes are needed to improve patient safety.
- In this unit, changes to improve patient safety are evaluated to see how well they worked.
- This unit lets the same patient safety problems keep happening. (negatively worded)

***Version 1:***

- We are actively doing things to improve patient safety.
- Mistakes have led to positive changes here.
- After we make changes to improve patient safety, we evaluate their effectiveness

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Response to error (RESPONSE)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which staff are treated fairly when they make mistakes and there is a focus on learning from mistakes and supporting staff involved in errors.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- In this unit, staff feel like their mistakes are held against them. (negatively worded)
- When an event is reported in this unit, it feels like the person is being written up, not the problem. (negatively worded)
- When staff make errors, this unit focuses on learning rather than blaming individuals.
- In this unit, there is a lack of support for staff involved in patient safety errors. (negatively worded)

***Version 1 (Nonpunitive Response to Errors):***

- Staff feel like their mistakes are held against them. (negatively worded)
- When an event is reported, it feels like the person is being written up, not the problem. (negatively worded)
- Staff worry that mistakes they make are kept in their personnel file. (negatively worded)

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Supervisor, manager, or clinical leader support for patient safety (SUPER_SUP)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which supervisors, managers, or clinical leaders consider staff suggestions for improving patient safety, do not encourage taking shortcuts, and take action to address patient safety concerns.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- My supervisor, manager, or clinical leader seriously considers staff suggestions for improving patient safety.
- My supervisor, manager, or clinical leader wants us to work faster during busy times, even if it means taking shortcuts. (negatively worded)

- My supervisor, manager, or clinical leader takes action to address patient safety concerns that are brought to their attention.

***Version 1 (Supervisor/Manager Expectations & Actions Promoting Patient Safety):***

- My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures.
- My supervisor/manager seriously considers staff suggestions for improving patient safety.
- Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts. (negatively worded)
- My supervisor/manager overlooks patient safety problems that happen over and over. (negatively worded)

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Communication about error (COM_ERR)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which staff are informed when errors occur, discuss ways to prevent errors, and are informed when changes are made.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- We are informed about errors that happen in this unit.
- When errors happen in this unit, we discuss ways to prevent them from happening again.
- In this unit, we are informed about changes that are made based on event reports.

***Version 1 (Feedback & Communication About Error):***

- We are given feedback about changes put into place based on event reports.
- We are informed about errors that happen in this unit.
- In this unit, we discuss ways to prevent errors from happening again.

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

### *Communication openness (COM_OP)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which staff speak up if they see something unsafe and feel comfortable asking questions.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- In this unit, staff speak up if they see something that may negatively affect patient care.
- When staff in this unit see someone with more authority doing something unsafe for patients, they speak up.
- When staff in this unit speak up, those with more authority are open to their patient safety concerns.
- In this unit, staff are afraid to ask questions when something does not seem right. (negatively worded)

***Version 1:***

- Staff will freely speak up if they see something that may negatively affect patient care.
- Staff feel free to question the decisions or actions of those with more authority.
- Staff are afraid to ask questions when something does not seem right. (negatively worded)

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

### *Reporting patient safety events (REPORT)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which mistakes of the following types are reported: (1) mistakes caught and corrected before reaching the patient and (2) mistakes that could have harmed the patient but did not.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- When a mistake is caught and corrected before reaching the patient, how often is this reported?
- When a mistake reaches the patient and could have harmed the patient, but did not, how often is this reported?

***Version 1(Frequency of Events Reported):***

- When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?
- When a mistake is made, but has no potential to harm the patient, how often is this reported?
- When a mistake is made that could harm the patient, but does not, how often is this reported?

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Hospital management support for patient safety (HOSP_SUP)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which hospital management shows that patient safety is a top priority and provides adequate resources for patient safety.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- The actions of hospital management show that patient safety is a top priority.
- Hospital management provides adequate resources to improve patient safety.
- Hospital management seems interested in patient safety only after an adverse event happens. (negatively worded)

***Version 1 (Management Support for Patient Safety):***

- Hospital management provides a work climate that promotes patient safety.
- The actions of hospital management show that patient safety is a top priority.
- Hospital management seems interested in patient safety only after an adverse event happens. (negatively worded)

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Handoffs and information exchange (HANDOFF)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the extent to which important patient care information is transferred across hospital units and during shift changes.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: For positively worded items, the number of respondents who answered “Strongly agree” or “Agree,” or “Always” or “Most of the time. For negatively worded items, the number of respondents within a hospital who answered “Strongly disagree” or “Disagree,” or “Never” or “Rarely,” because a negative answer on a negatively worded item indicates a positive response.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the items.

**Composite calculation**: Average the percent positive scores for each item.

***Version 2:***

- When transferring patients from one unit to another, important information is often left out. (negatively worded)
- During shift changes, important patient care information is often left out. (negatively worded)
- During shift changes, there is adequate time to exchange all key patient care information.

***Version 1 (Handoffs & Transitions):***

- Things "fall between the cracks" when transferring patients from one unit to another. (negatively worded)
- Important patient care information is often lost during shift changes. (negatively worded)
- Problems often occur in the exchange of information across hospital units. (negatively worded)
- Shift changes are problematic for patients in this hospital. (negatively worded)

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Patient safety rating (RATING)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the percentage of positive overall ratings on patient safety given by survey respondents for their unit/work area.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator**: The number of respondents who responded positively ((very) good/excellent) on patient safety grade.

**Denominator**: Number of eligible positive provider and staff who received the survey and responded to the item.

- **Version 2**: How would you rate your unit/work area on patient safety? (Poor, Fair, Good, Very Good, Excellent)
- **Version 1:** Please give your work area/unit in this hospital an overall grade on patient safety. (Excellent, Very Good, Acceptable, Poor, Failing)

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

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### *Background information: hours worked weekly in hospital (HOURS)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate is calculated based on the following definitions.

**Objective**: To capture the percentage of staff that work more than 40 hours a week in the hospital where they are employed.

**Survey target population**: People employed in the *hospital* setting

**Coverage**: Survey respondents (by job category (physicians, nursing staff, other clinical staff, support staff and management staff) and total) who responded to the Hospital Survey on Patient Safety Culture Survey (Versions 1 or 2).

**Numerator:** Number of respondents who indicated they work more an 40 hours a week at the hospital that sent them the survey.

**Denominator**: Number of eligible positive provider and staff who respond to the survey item.

Note: The national average should be calculated by taking the average for the participating hospitals. If only the crude average based on all survey respondents is possible, this should be indicated in the sources and methods. [For more details on the survey please see the AHRQ website].

## PATIENT EXPERIENCES (PE) INDICATORS

Indicators in the Patient Experience indicator set include:

- Consultation skipped due to costs (COSKCOST)
- Medical tests, treatment or follow-up skipped due to costs (MTSKCOST)
- Prescribed medicine skipped due to costs (PMSKCOST)
- Doctor spending enough time with patient during the consultation (HPRTIPAT)
- Regular doctor spending enough time with patient during the consultation (RHPTIPAT)
- Doctor providing easy-to-understand explanations (HPREXCLA)
- Regular doctor providing easy-to-understand explanations (RHPEXCLA)
- Doctor giving opportunity to ask questions or raise concerns (HPRGOASK)
- Regular doctor giving opportunity to ask questions or raise concerns (RHPGOASK)
- Doctor involving patient in decisions about care and treatment (HPRIPDEC)
- Regular doctor involving patient in decisions about care and treatment (RHPIPDEC)

### NOTES

PE questionnaire collects weighted rates, and standard errors of the weighted rates. Weighted rates are calculated by removing bias from a survey sample, so they are estimates for the survey target population as a whole and not just for the survey respondents (unweighted rates). Standard errors measure the accuracy of weighted rates and they **should take account of survey sample design**. But if not possible, please calculate it using the following equation:

$$Se(p_{ij}) = \sqrt{\frac{p_{ij} \times (1 - p_{ij})}{n_{ij}}}$$

Where p is the sample proportion, n is the sample size, $i$ is the age group, and $j$ the sex.

If data do not strictly comply with the definitions, please indicate this in the online survey. To assess the data comparability based on question phrases and response categories such as yes/no answer and frequency, please send us the survey questionnaire(s) to HCQO.Contact@oecd.org if your country has not done.

### *Consultation* skipped due to costs (COSKCOST)

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator aims to monitor financial accessibility of healthcare consultation.

**Coverage**: Survey respondents aged 16 and over who answered the specific question.

**Numerator**: Number of survey respondents among denominator cases who answered not having visited a health professional (e.g., doctor, nurse or allied health professional) because of costs (i.e., actual out-of-pocket payments for services) by *income quintile* and for all income groups.

**Denominator**: Number of survey respondents who answered "Yes" or "No" to a survey question on whether consultation was skipped due to costs in the reference year by *income quintile* and for all income groups.

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### *Medical tests, treatment or follow-up skipped due to costs (MTSKCOST)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator aims to monitor financial accessibility of medical test, treatment or follow-up care.

**Coverage**: Survey respondents aged 16 and over who answered the specific question.

**Numerator**: Number of survey respondents among denominator cases who answered having skipped a medical test, treatment (excluding medicines), or other follow-up that was recommended by a health professional (e.g., doctor, nurse or allied health professional) because of costs (i.e., actual out-of-pocket payments for services) by *income quintile* and for all income groups.

**Denominator**: Number of survey respondents who answered "Yes" or "No" to a survey question on whether recommended medical tests, treatment or follow-up was skipped due to costs in the reference year by *income quintile* and for all income groups.

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### *Prescribed medicine skipped due to costs (PMSKCOST)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator aims to monitor financial accessibility of prescribed medicines.

**Coverage**: Survey respondents aged 16 and over who answered the specific question.

**Numerator**: Number of survey respondents among denominator cases who answered not having filled a prescription for medicine/collect a prescription for medicine, or skipped doses of medicine because of costs (i.e., actual out-of-pocket payments for medicine) by *income quintile* and for all income groups.

**Denominator**: Number of survey respondents who answered "Yes" or "No" to a survey question on

whether prescribed medicine was skipped due to costs in the reference year by *income quintile* and for all income groups.

### *Doctor spending enough time with patient during the consultation (HPRTIPAT)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design

**Objective**: This indicator aims to capture people-centred care delivery based on patient experiences in relation to enough time spent by a doctor.

**Coverage:** Survey respondents aged 16 and over (4 age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator:** Number of survey respondents among denominator cases who answered positively to a question on whether a doctor spent enough time with them.

**Denominator:** Number of survey respondents who reported having had a consultation with a doctor in the reference year and answered "Yes" or "No" to a survey question on whether a doctor spent enough time with them.

### *Regular doctor spending enough time with patient during the consultation (RHPTIPAT)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design

**Objective**: This indicator aims to capture people-centred care delivery based on patient experiences in relation to enough time spent by a regular doctor/general practitioner.

**Coverage:** Survey respondents aged 16 and over (4 age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator:** Number of survey respondents among denominator cases who answered that a regular doctor (general practitioner) always or often spent enough time with them.

**Denominator:** Number of survey respondents who reported having had a regular doctor in the reference year and answered a frequency to a survey question on how often a regular doctor spent enough time with them.

### *Doctor providing easy-to-understand explanations (HPREXCLA)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design

**Objective**: This indicator aims to capture people-centred care delivery based on patient experiences in relation to easy-to-understand explanation given by a doctor.

**Coverage:** Survey respondents aged 16 and over (4 age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator:** Number of survey respondents among denominator cases who answered positively to a question on whether a doctor explained things in a way that was easy to understand.

**Denominator:** Number of survey respondents who reported having had a consultation with a doctor in the reference year and answered "Yes" or "No" to a survey question on whether a doctor explained things in a way that was easy to understand.

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### *Regular doctor providing easy-to-understand explanations (RHPEXCLA)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design

**Objective**: This indicator aims to capture people-centred care delivery based on patient experiences in relation to easy-to-understand explanation given by a regular doctor/general practitioner.

**Coverage:** Survey respondents aged 16 and over (4 age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator:** Number of survey respondents among denominator cases who answered that a regular doctor (general practitioner) always or often explained things in a way that was easy to understand.

**Denominator:** Number of survey respondents who reported having had a regular doctor in the reference year and answered a frequency to a survey question on how often a regular doctor explained things in a way that was easy to understand.

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### *Doctor giving opportunity to ask questions or raise concerns (HPRGOASK)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator aims to capture people-centred care delivery based on patient experiences in relation to an opportunity given to ask questions or raise concerns by a doctor.

**Coverage:** Survey respondents aged 16 and over (4 age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator:** Number of survey respondents among denominator cases who answered positively to a question on whether a doctor gave an opportunity to ask questions or raise concerns about recommended treatment.

**Denominator:** Number of survey respondents who reported having had a consultation with a doctor in the reference year and answered "Yes" or "No" to a survey question on whether a doctor gave an opportunity to ask questions or raise concerns about recommended treatment.

### *Regular doctor giving opportunity to ask questions or raise concerns (RHPGOASK)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator aims to capture people-centred care delivery based on patient experiences in relation to an opportunity given to ask questions or raise concerns by a regular doctor/general practitioner t.

**Coverage:** Survey respondents aged 16 and over (4 age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator:** Number of survey respondents among denominator cases who answered that a regular doctor (general practitioner) always or often gave an opportunity to ask questions or raise concerns about recommended treatment.

**Denominator:** Number of survey respondents who reported having had a regular doctor in the reference year and answered a frequency to a survey question on how often a regular doctor gave an opportunity to ask questions or raise concerns about recommended treatment.

### *Doctor involving patient in decisions about care and treatment (HPRIPDEC)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator aims to capture people-centred care delivery based on patient experiences in relation to doctor involving decisions about care and treatment .

**Coverage:** Survey respondents aged 16 and over (4 age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator:** Number of survey respondents among denominator cases who answered positively to a question on whether a doctor involved them as much as they wanted to be in decisions about their care and treatment.

**Denominator:** Number of survey respondents who reported having had a consultation with a doctor in the reference year and answered "Yes" or "No" to a survey question on whether a doctor involved them as much as they wanted to be in decisions about their care and treatment.

### *Regular doctor involving patient in decisions about care and treatment (RHPIPDEC)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude or weighted rates are calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator captures the percentage of patients who think a regular doctor (general practitioner) involved them as much as they wanted to be in decisions about their care and treatment.

**Coverage:** Survey respondents aged 16 and over (4 age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator:** Number of survey respondents among denominator cases who answered that a regular doctor (general practitioner) always or often involved them as much as they wanted to be in decisions about their care and treatment.

**Denominator:** Number of survey respondents who reported having had a regular doctor in the reference year and answered a frequency to a survey question on how often a regular doctor involved them as much as they wanted to be in decisions about their care and treatment.

## MENTAL HEALTH PREMS (MP) INDICATORS

Indicators in the Mental Health PREMs indicator set include:

- Care providers treating mental health service users with courtesy and respect (inpatient care) (MPIPRESP)
- Care providers treating mental health service users with courtesy and respect (community-based care) (MPCBRESP)
- Care providers spending enough time with mental health service users (inpatient care) (MPIPTIME)
- Care providers spending enough time with mental health service users (community-based care) (MPCBTIME)
- Care providers providing easy-to-understand explanations to mental health service users (inpatient care) (MPIPEXPL)
- Care providers providing easy-to-understand explanations to mental health service users (community-based care) (MPCBEXPL)
- Care providers involving mental health service users in decisions about care and treatment (inpatient care) (MPIPINVO)
- Care providers involving mental health service users in decisions about care and treatment (community-based care) (MPCBINVO)

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### *Care providers treating mental health service users with courtesy and respect (inpatient care) (MPIPRESP)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate (weighted) is calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator captures the percentage of patients who think their inpatient mental health care providers treated them with courtesy and respect.

**Survey target population**: Adults receiving inpatient hospital services (for example, in hospital, psychiatric hospital, mental health care institution, or other inpatient setting). Long-term care residents are excluded. *Principal diagnosis* code of mental health and behavioral disorders (ICD-10 codes F10-F69 and F90-99).

**Coverage**: Survey respondents aged 16 and over (four age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator**: Number of survey respondents among the denominator cases who answered positively to a question on whether care providers treated them with courtesy and respect.

**Denominator**: The number of survey respondents who answered "Yes" or "No" to a survey question on whether care providers treated them with courtesy and respect.

### *Care providers treating mental health service users with courtesy and respect (community-based care) (MPCBRESP)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate (weighted) is calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator captures the percentage of patients who think their community-based mental health care providers treated them with courtesy and respect.

**Survey target population**: Adults receiving community-based mental health services (i.e. non-hospital and non-inpatient care). Long-term care residents are excluded. *Principal diagnosis* code of mental health and behavioral disorders (ICD-10 codes F10-F69 and F90-99).

**Coverage**: Survey respondents aged 16 and over (four age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator**: Number of survey respondents among the denominator cases who answered positively to a question on whether care providers treated them with courtesy and respect.

**Denominator**: The number of survey respondents who answered "Yes" or "No" to a survey question on whether care providers treated them with courtesy and respect.

### *Care providers spending enough time with mental health service users (inpatient care) (MPIPTIME)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate (weighted) is calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator captures the percentage of patients who think their inpatient mental health care providers spent enough time with them during their care.

**Target population**: Adults receiving inpatient hospital services (for example, in hospital, psychiatric hospital, mental health care institution, or other inpatient setting). Long-term care residents are excluded. *Principal diagnosis* code of mental health and behavioral disorders (ICD-10 codes F10-F69 and F90-99).

**Coverage**: Survey respondents aged 16 and over (four age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator**: Number of survey respondents among the denominator cases who answered positively to a question on whether care providers spent enough time with them.

**Denominator**: The number of survey respondents who answered "Yes" or "No" to a survey question on whether care providers spent enough time with them.

### *Care providers spending enough time with mental health service users (community-based care) (MPCBTIME)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate (weighted) is calculated based on the following definitions. Standard errors should be calculated

based on the sample design.

**Objective**: This indicator captures the percentage of patients who think their community-based mental health care providers spent enough time with them during their care.

**Target population** Adults receiving community-based mental health services (i.e. non-hospital and non-inpatient care). Long-term care residents are excluded. *Principal diagnosis* code of mental health and behavioral disorders (ICD-10 codes F10-F69 and F90-99). ***Note***: indicators for adults receiving inpatient services and those receiving community based mental health services are calculated separately.

**Coverage**: Survey respondents aged 16 and over (four age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator**: Number of survey respondents among the denominator cases who answered positively to a question on whether care providers spent enough time with them.

**Denominator**: The number of survey respondents who answered "Yes" or "No" to a survey question on whether care providers spent enough time with them.

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### *Care providers providing easy-to-understand explanations to mental health service users (inpatient care) (MPIPEXPL)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate (weighted) is calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator captures the percentage of patients who think their inpatient mental healthcare providers explained things in a way that was easy for them to understand.

**Target population**: Adults receiving inpatient hospital services (for example, in hospital, psychiatric hospital, mental health care institution, or other inpatient setting). Long-term care residents are excluded. *Principal diagnosis* code of mental health and behavioral disorders (ICD-10 codes F10-F69 and F90-99).

**Coverage**: Survey respondents aged 16 and over (four age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator**: Number of survey respondents among the denominator cases who answered positively to a question on whether care providers explain things in a way that was easy to understand.

**Denominator**: The number of survey respondents who answered "Yes" or "No" to a survey question on whether care providers explain things in a way that was easy to understand.

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### *Care providers providing easy-to-understand explanations to mental health service users (community-based care) (MPCBEXPL)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate (weighted) is calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator captures the percentage of patients who think their community-based mental healthcare providers explained things in a way that was easy for them to understand.

**Target population**: Adults receiving community-based mental health services (i.e. non-hospital and non-inpatient care). Long-term care residents are excluded. *Principal diagnosis* code of mental health and behavioral disorders (ICD-10 codes F10-F69 and F90-99).

**Coverage**: Survey respondents aged 16 and over (four age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator**: Number of survey respondents among the denominator cases who answered positively to a question on whether care providers explain things in a way that was easy to understand.

**Denominator**: The number of survey respondents who answered "Yes" or "No" to a survey question on whether care providers explain things in a way that was easy to understand.

---

### *Care providers involving mental health service users in decisions about care and treatment (inpatient care) (MPIPINVO)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate (weighted) is calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator captures the percentage of patients who think their inpatient mental healthcare providers involved them as much as they wanted to be in decisions about their care and treatment.

**Target population**: Adults receiving inpatient services (for example, in hospital, psychiatric hospital, mental health care institution, or other inpatient setting). Long-term care residents are excluded. *Principal diagnosis* code of mental health and behavioral disorders (ICD-10 codes F10-F69 and F90-99).

**Coverage**: Survey respondents aged 16 and over (four age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator**: Number of survey respondents among the denominator cases who answered positively to a question on whether care providers involve them as much as they wanted to be in decisions about their care and treatment.

**Denominator**: The number of survey respondents who answered "Yes" or "No" to a survey question on whether care providers involve the as much as they wanted to be in decisions about their care and treatment.

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### *Care providers involving mental health service users in decisions about care and treatment (community-based care) (MPCBINVO)*

*See Section 3.* Glossary *for definitions of italicised terminology.*

Crude rate (weighted) is calculated based on the following definitions. Standard errors should be calculated based on the sample design.

**Objective**: This indicator captures the percentage of patients who think their community-based mental healthcare providers involved them as much as they wanted to be in decisions about their care and treatment.

**Target population**: Adults receiving community-based mental health services (i.e. non-hospital or non-inpatient care). Long-term care residents are excluded. *Principal diagnosis* code of mental health and behavioral disorders (ICD-10 codes F10-F69 and F90-99).

**Coverage**: Survey respondents aged 16 and over (four age groups (16-24, 25-44, 45-65 and 65+) and 16+) who answered the specific question.

**Numerator**: Number of survey respondents among the denominator cases who answered positively to a question on whether care providers involve the as much as they wanted to be in decisions about their care and treatment.

**Denominator**: The number of survey respondents who answered "Yes" or "No" to a survey question on whether care providers involve the as much as they wanted to be in decisions about their care and treatment.

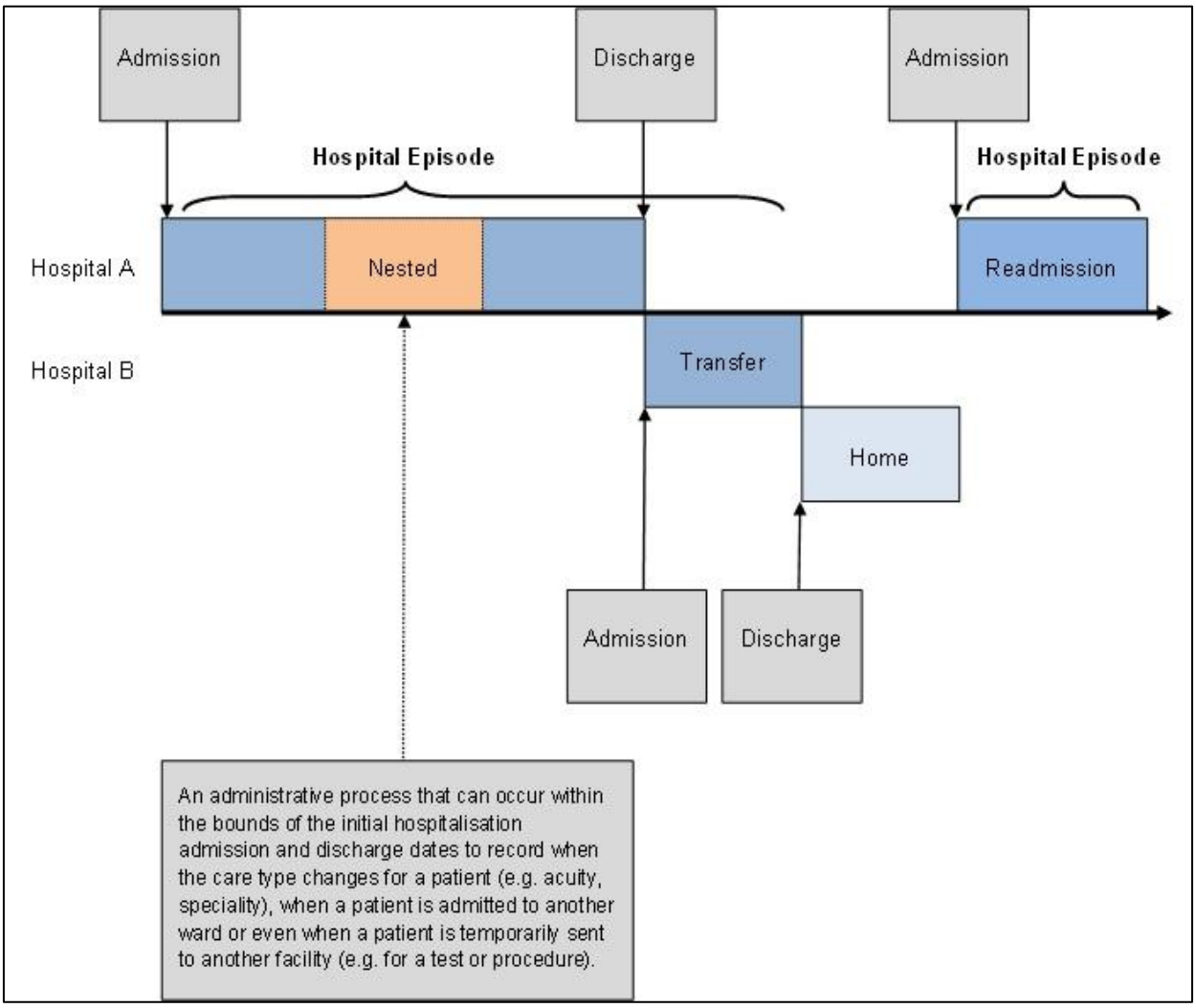
# 3 Glossary

8. The following glossary has been developed to clarify the meaning of key concepts used to specify the indicators for the HCQO data collection. Please refer to these definitions when calculating indicators:

- **Acute care hospitals**: A hospital in which acute care is provided (includes acute admissions).
- **Admission/separation/discharge:** Admission follows a clinical decision that a patient requires same-day or overnight hospital care or treatment. Separation or discharge is the process by which care for an admitted patient ceases either due to discharge from the hospital or death. For the purposes of these guidelines the three terms are considered interchangeable, allowing for countries to choose the data source readily available in their context (admission, discharge or separation databases). Thus, indicator and glossary definitions using these terms should be read as referring to any of the three possibilities unless indicated otherwise.
- **Average Length of Stay (ALOS):** The total number of days of stay in hospital(s) divided by the associated total number of admissions for the specified period.
- **Defined daily dose (DDD)**: DDDs are a measure of drug consumption defined by the World Health Organization to standardize drug use.
- **Emergency Department** is a hospital room or area staffed and equipped for the reception and treatment of persons requiring immediate medical care.
- **Episode of care** is defined as a period of hospitalised care from the date of admission to a hospital for inpatient care to the date of discharge home (or to a nursing home or long-term care), in which transfers within or between facilities and “nested” admissions that occurred during this period are linked together to form one episode of care.
- **Hospitals** comprise 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. Hospitals provide inpatient health services, many of which can be delivered only by using specialised facilities and professional knowledge as well as advanced medical technology and equipment, which form a significant and integral part of the provision process. Although the principal activity is the provision of inpatient medical care they may also provide day care, outpatient and home health care services. The tasks of hospitals may vary by country and are usually defined by legal requirements. In some countries, health care facilities need in addition a minimum size (such as a number of beds and medical staff to guarantee 24-hour access) in order to be registered as a hospital. SHA 2011 distinguishes between general hospitals, mental health hospitals and specialised hospitals other than mental health hospitals depending both on the scope of medical treatments provided and the specificity of diseases or medical conditions of inpatients.
- **Hospital admission:** This is defined as a period of hospital care from the date of formal admission to a hospital to the date of formal discharge from the same hospital, which includes the any ‘nested admissions’ where an administrative process results in the discharge and admission of a patient within the bounds of the initial hospitalisation admission and discharge dates. (see Figure 3.1)
- **Hospital episode**: This is defined as a period of hospitalised care from the date of admission to a hospital to the date of discharge home (or to a nursing home or long-term care), which excludes the counting of any hospital admissions that occurred during this period (either as a result of

transferring a patient from one hospital to another or a nested admission) for the calculation of the patient-based rates. (see Figure 3.1).

### Figure 3.1. Structure and Relationship between Hospital Admissions and Hospital Episodes




Source: OECD.

- **Income quintiles:** income quintiles are calculated based on the total equivalised disposable income attributed to each member of the household. The data need to be ordered by income value and then four cut-off values, which divide the survey population into five equal groups representing 20 % of **individuals** each, need to be identified. The first quintile group represents 20 % of population with the lowest income, and the fifth quintile group represents 20 % of population with the highest income.
- **Inpatient admission** is a formal admission into a health care facility for treatment and/or care that is expected to constitute an overnight stay. The classification as inpatient care is irrespective of the type of provider; this may be a hospital, nursing care facility, or facilities classified as ambulatory care providers but which perform occasional procedures requiring inpatient care and are thus able to provide overnight accommodation. It can also include health facilities within any type of establishment that accommodates patients justifying an overnight stay (SHA, 2011).

- **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 life-threatening 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.
- **Length of stay (in days):** The length of stay of a patient 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).
- **Linked data:** The unit of counting is a patient that can be individually tracked through several admissions and requires unique patient identification and the linking of related admissions within a specified period. Only one admission is counted per patient for the purposes of calculating indicator rates.
- **Obstetric hospitalisations:** Calculation of various indicators (AA and PS) require exclusion of obstetric patients with treatment related to pregnancy, childbirth, and puerperium. These cases have to be identified by their principal diagnoses. ICD classifications contain a separate chapter for obstetric coding (ICD-10-WHO 2019 Chapter XV, Code O00.- – O99.-). Use corresponding chapters of ICD classification in use in your country. For full completeness use additional codes from Figure 3.2 and exclude cases when one of these codes is a principal diagnosis. Countries using DRG-assignment are free to keep the former "MDC-14 concept" and exclude all cases assigned to an obstetric DRG.

### Figure 3.2. ICD classifications for pregnancy, childbirth and puerperium

| ICD-9 CM (CMS V32 2014) | WHO 2019 | Title |
|---|---|---|
| n.a. | A34 | Obstetrical tetanus |
| V222 | Z33 | Pregnant state, incidental |
| V240 | Z39.0 | Care and examination immediately after delivery |
| n.a. | Z64.0 | Problems related to unwanted pregnancy |

- **Outpatient care:** outpatient care comprises medical and ancillary services delivered to a patient who is not formally admitted to a facility and does not stay overnight. An outpatient is thus a person who goes to a health care facility for a consultation or treatment, and who leaves the facility within hours of the start of the consultation without being "admitted" to the facility as a patient. "Outpatient" under the System of Health Account (SHA) framework has a wider meaning than in many national reporting systems, because it refers to any care offered to a non-admitted patient regardless of where it occurs: the outpatient service may be delivered in the outpatient ward of a hospital (including accident and emergency departments), a dedicated hospital outpatient centre, an ambulatory care centre, a physician's private office, or a health care practice within a work place, school or prison, or even on the street (e.g. vaccinations, injections, blood pressure or temperature measurement), but not at the patient's place of residence.

- **Patient_id:** patient identifier which is unique by individual and can be used at a minimum to construct hospital admissions (See unique person identifier).
- **Prescribing database:** electronic database with drug prescribing or dispensing data submitted by dispensing pharmacies and/or prescribing practitioners.
- **Principal diagnosis (PDx)** follows one of two approaches:
    a. The PDx is the condition established after early clinical evaluation to be chiefly responsible for causing the hospitalisation (*'condition held chiefly responsible'* approach).

b. The PDx is the diagnosis that is finally established to be the main reason for the hospital stay; that is demanding the most resources/medical effort over the course of the patients stay (*'condition demanding the most resources'* approach).

- **Same day/day only admissions:** A same day admission is defined as an admission with a length of stay less than 24 hours. In those countries where a timestamp on admission or discharge is not available, cases with a length of stay of 0 (discharge date-admission date=0) will qualify for same day admission.
- **Secondary diagnosis (SDx):** Comorbid conditions for which the patient received treatment and consumed hospital resources in addition to those conditions considered to be the principal diagnosis.
- **Surgical Admission** for the purposes of calculating the patient safety indicators in the HCQO data collection is the initial denominator case where surgery was performed. This is used as the reference discharge for identifying valid numerator cases in the same admission or any subsequent related readmissions up to and including 30 days after surgery (or if not available, admission) date.
- **Transfers (in/out)** – admissions that result in a transfer from other acute care institutions are considered transfers-in. Admissions which result in a transfer to another acute care facility are considered transfers out.
- **Unique person identifier (UPI)** – patient number that allow patient data to be linked across hospital admissions, hospital episodes, and to death records outside of the hospital.
- **Unlinked data**: The unit of counting is a patient admission and does not require unique patient identification and the linking of related admissions. This means each admission is counted for the purposes of calculating indicator rates, regardless of whether a patient has multiple admissions within the specified period or not.
- **Urgent (non-elective) hospital admission –** hospital admissions that occur without prior scheduling and are necessary due to an acute medical condition or exacerbation of a chronic illness that requires immediate medical attention. These admissions are unplanned, required immediate care within 24 hours, and typically occur when a patient presents to an emergency department, urgent care centre, or is directly admitted by a healthcare provider because of a pressing medical need. In databases, urgency is frequently a coded variable, and it may be specified through patient admission records, billing for emergency medical services, or by distinguishing between planned and unplanned hospitalisations.
- **Year:** for the purpose of these guidelines, a year refers to a calendar year, starting the 1st of January and ending the 31st of December.

# Reference

# Annex A. Age-sex standardisation

9. To enable comparability across countries, the crude rates/means for many of the HCQO indicators are standardised (or adjusted) by age and sex in order to remove the confounding effect of different population/patient structure that we know differ in OECD countries. The Standard Populations are provided in Box B.1 and Box B.2.

10. **Avoidable Admissions, Mental Health** and some **Primary Care Prescribing** indicators are standardised using the OECD 2015 Standard Population. Excess mortality for people diagnosed with a bipolar disorder or schizophrenia as part of the Mental Health (MH) indicators, mortality rates provided for both numerator and denominator are standardised, and then the standardised rates are used to calculate the ratio.

11. **Acute care** indicators use specific disease populations collected in 2013 from OECD countries to standardise 30-day mortality rates.

12. **Integrated care** indicators use specific disease populations collected in 2018 from OECD countries.

13. Confidence intervals for the standardised rates are calculated. The method used is direct standardisation: an overview of the calculation of standardised rates and confidence interval is provided in Box B.3.

### Box 0.1. Populations used to standardise HCQO indicators

### Table B.1. 2015 OECD standard population (15+) used for AA, MH and PR indicators

| | Age-group | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **0-14** | **15-19** | **20-24** | **25-29** | **30-34** | **35-39** | **40-44** | **45-49** |
| **Sex** | | | | | | | | |
| ***Male*** | Data are for adults only | 30691981 | 33469335 | 34508354 | 34894399 | 35002373 | 35208558 | 34660372 |
| ***Female*** | | 29111324 | 31890350 | 33499971 | 34352178 | 34701217 | 35185172 | 34893929 |
| ***Total*** | | 59803361 | 65359685 | 68008324 | 69246575 | 69703590 | 70393726 | 69554358 |
| | **50-54** | **55-59** | **60-64** | **65-69** | **70-74** | **75-79** | **80-84** | **85+** |
| **Sex** | | | | | | | | |
| ***Male*** | 33945806 | 31047338 | 27306071 | 23725699 | 17515803 | 13214632 | 8764367 | 6354136 |
| ***Female*** | 34644220 | 32459999 | 29538678 | 26657966 | 21242908 | 18041732 | 13862761 | 13905892 |
| ***Total*** | 68589968 | 63507341 | 56844750 | 50383721 | 38758710 | 31256364 | 22627128 | 20260032 |

## Box 0.2. Populations used to standardise HCQO indicators

### Table B.2. 2013 OECD disease-specific population (45+) for Acute Care AMI linked indicator

| | Age-group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **0-44** | **45-49** | **50-54** | **55-59** | **60-64** | **65-69** | **70-74** | **75-79** | **80-84** | **85+** |
| **Sex** | Data are for people above 45 years only | | | | | | | | | |
| ***Male*** | | 23351 | 36698 | 45461 | 47495 | 49784 | 42042 | 38990 | 32187 | 29640 |
| ***Female*** | | 5090 | 8239 | 11657 | 15116 | 19872 | 22023 | 26630 | 29379 | 41766 |
| ***Total*** | | 28441 | 44937 | 57118 | 62611 | 69656 | 64065 | 65620 | 61566 | 71406 |

### Table B.3. 2013 OECD disease-specific population (45+) for Acute Care AMI unlinked indicator

| | Age-group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **0-44** | **45-49** | **50-54** | **55-59** | **60-64** | **65-69** | **70-74** | **75-79** | **80-84** | **85+** |
| **Sex** | Data are for people above 45 years only | | | | | | | | | |
| ***Male*** | | 36185 | 55989 | 68949 | 73358 | 76475 | 64954 | 60520 | 49603 | 45559 |
| ***Female*** | | 8125 | 13092 | 18125 | 23328 | 29709 | 32580 | 40008 | 44079 | 62979 |
| ***Total*** | | 44310 | 69081 | 87074 | 96686 | 106184 | 97534 | 100528 | 93682 | 108538 |

### Table B.4. 2013 OECD disease-specific population (45+) for Acute Care Haemorrhagic stroke linked indicator

| | Age-group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **0-44** | **45-49** | **50-54** | **55-59** | **60-64** | **65-69** | **70-74** | **75-79** | **80-84** | **85+** |
| **Sex** | Data are for people above 45 years only | | | | | | | | | |
| ***Male*** | | 4123 | 5482 | 6372 | 7146 | 8538 | 9526 | 10850 | 10561 | 9980 |
| ***Female*** | | 3075 | 4289 | 4700 | 5013 | 6353 | 7546 | 9863 | 11275 | 14609 |
| ***Total*** | | 7198 | 9771 | 11072 | 12159 | 14891 | 17072 | 20713 | 21836 | 24589 |

### Table B.5. 2013 OECD disease-specific population (45+) used for Acute Care Haemorrhagic stroke unlinked indicators

| | Age-group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **0-44** | **45-49** | **50-54** | **55-59** | **60-64** | **65-69** | **70-74** | **75-79** | **80-84** | **85+** |
| **Sex** | Data are for people above 45 years only | | | | | | | | | |
| ***Male*** | | 6126 | 8215 | 9649 | 11048 | 12905 | 13921 | 15802 | 14896 | 14372 |
| ***Female*** | | 4787 | 6634 | 7360 | 7754 | 9492 | 10950 | 14168 | 16227 | 21789 |
| ***Total*** | | 10913 | 14849 | 17009 | 18802 | 22397 | 24871 | 29970 | 31123 | 36161 |

### Table B.6.. 2013 OECD disease-specific population (45+) used for Acute Care Ischaemic stroke linked indicators

| | Age-group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | 85+ |
| **Sex** | Data are for people above 45 years only | | | | | | | | | |
| ***Male*** | | 7663 | 13300 | 19705 | 26260 | 34932 | 38722 | 42196 | 38034 | 35326 |
| ***Female*** | | 4318 | 6340 | 8686 | 12515 | 19712 | 27301 | 38057 | 46806 | 71777 |
| ***Total*** | | 11981 | 19640 | 28391 | 38775 | 54644 | 66023 | 80253 | 84840 | 107103 |

### Table B.7. 2013 OECD disease-specific population (45+) used for Acute Care Ischaemic stroke unlinked indicators

| | Age-group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | 85+ |
| **Sex** | Data are for people above 45 years only | | | | | | | | | |
| ***Male*** | | 21751 | 40022 | 56631 | 72207 | 86551 | 90291 | 94168 | 85910 | 86451 |
| ***Female*** | | 15063 | 22106 | 29584 | 40244 | 55898 | 68460 | 88310 | 106217 | 179366 |
| ***Total*** | | 36814 | 62128 | 86215 | 112451 | 142449 | 158751 | 182478 | 192127 | 265817 |

### Table B.8. 2018 OECD disease-specific population (45+) used for Integrated Care Ischaemic stroke mortality indicators

| | Age-group | | | | | |
|---|---|---|---|---|---|---|
| | 0-44 | 45-54 | 50-64 | 65-74 | 75-84 | 85+ |
| **Sex** | | | | | | |
| ***Male*** | Data are for people above 45 years only | 3991 | 8926 | 17276 | 16617 | 7171 |
| ***Female*** | | 1687 | 3540 | 9512 | 15067 | 13599 |
| ***Total*** | | 4678 | 12466 | 26788 | 31684 | 20770 |

### Table B.9. 2018 OECD disease-specific population (45+) used for Integrated Care Congestive Heart Failure mortality indicators

| | Age-group | | | | | |
|---|---|---|---|---|---|---|
| | 0-44 | 45-54 | 50-64 | 65-74 | 75-84 | 85+ |
| **Sex** | | | | | | |
| ***Male*** | Data are for people above 45 years only | 3031 | 6275 | 13919 | 19459 | 15292 |
| ***Female*** | | 903 | 2330 | 7924 | 18734 | 26481 |
| ***Total*** | | 3934 | 8605 | 21843 | 38193 | 41773 |

**Box B.3. Calculation for Age/Sex Standardised Rates/Means and Confidence Intervals**

**Calculation of age/sex standardised rates/means:**

Sex-specific age-standardised rates/means (SR) are calculated as a weighted average of the age-specific rates/means (ASR). The weights are determined by **the standard population** (Table B.1.).

$$SR_j = \frac{\sum_i (ASR_{ij} \times POP_i)}{POP_{TOT}}$$

Where $i$ is the age group, $j$ the sex, $SR_j$ the age standardised rate/mean for sex $j$, $ASR_{ij}$ the age-specific rate/mean (per 100 patients or per 100 000 population depending on the indicator) for age group $i$ and sex $j$, $POP_i$ the total standard population for age group $i$ ,and $POP_{TOT}$ the total standard population defined as $\sum_i POP_i$.

Please note that age-specific rates/means $ASR_{ij}$ are standardised to the **total 2015 OECD standard population** (and not the sex-specific standard population) to facilitate meaningful cross sex comparisons.

The age-sex standardised rate/mean for total population is a weighted average of age and sex specific rates/means:

$$SR_{TOT} = \frac{\sum_{ij} (ASR_{ij} \times POP_{ij})}{POP_{TOT}}$$

Where $i$ is the age group, $SR_{TOT}$ the age/sex standardised rate/mean for total population, $ASR_{ij}$ the age-specific rate/mean (per 100 patients or per 100 000 population depending on the indicator) for age group $i$ and sex $j$, $POP_{ij}$ the standard population size in age group $i$ and sex $j$, and $POP_{TOT}$ the total standard population defined as $\sum_{ij} POP_{ij}$.

**Calculation of confidence intervals:**

In the AA, AC, IC and MH questionnaire, the standard error of the age-specific rates is assumed to be determined by a binomial distribution, and is calculated as:

$$Se(ASR_{ij}) = \sqrt{\frac{ASR_{ij} \times (100 - ASR_{ij})}{D_{ij}}}$$

Where $D_{ij}$ is the number of people reported in the denominator of the indicator, in the $i$-th age interval and for sex $j$. In the PE and MP questionnaire, the standard error of the age-specific rates and means is provided by countries.

The standard error of the standardized rate/mean is then:

$$Se(SR_j) = \frac{\sum_i (POP_{ij} \times Se(ASR_{ij}))^2}{POP_{TOT}^2}$$

, and the 95-percent confidence intervals for the standardized rate are formed as:

$$Lower\ \ value = SR_j - 1.96 \times Se(SR_j)$$

$$Upper\ \ value = SR_i + 1.96 \times Se(SR_i)$$

Source: OECD.