Health Care Quality and Outcomes (HCQO) 2018-19 Data Collection

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**Guidelines for
Filling in the Data Collection Questionnaires
and using SAS programs**
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NOVEMBER 2018

NOTE BY THE SECRETARIAT

The OECD Health Care Quality and Outcomes (HCQO) 2018/19 data collection is unique in both its approach and scope. These Guidelines aim to assist countries in understanding and completing the data collection process by providing simple, clear instructions.

The 2018-19 data collection includes two distinct data collection methods, each designed to collect specific indicators. Specifications for these two methods, Method I (existing, Excel-based method) and Method II (using SAS), are detailed in this document.

Countries will be encouraged to submit data using **BOTH** Method I and II, but will be requested as a minimum to submit data using Method I. By receiving data from both methods, the Secretariat will be able to access critical evidence to inform the ongoing Data Modernisation Project and an expanded use of and transition to SAS programs in future data collections. In order to reduce data burden on countries and facilitate the use of both data collection methods, the Secretariat has significantly reduced data requests.

The data provided through the 2018-19 HCQO data collection and related pilot data collections will be presented during the HCQO Expert meeting on 18 and 19 of May 2019 and, where appropriate, published in *OECD Health Data 2019* (http://www.oecd.org/health/healthdata,) via OECD.StatExtracts (http://stats.oecd.org) at the end of June 2019. In order to meet this deadline, countries are requested to **please return all final data to the OECD Secretariat** (hcqo.contact@oecd.org) **by FRIDAY 15 March 2019.**

While new elements of the data collection will provide significant opportunities for better international data, there is also the likelihood that additional demands on both the OECD and participating countries will be generated. Communication and preparation will be key to meeting these challenges and achieving a smooth data collection.

The Secretariat will remain available before and throughout the data collection process to provide advice or support where needed, including any and all technical assistance related Method II.

Countries are encouraged to contact the HCQO Team by e-mailing HCQO.Contact@oecd.org and one of the team members will be in contact.

For questions please contact: HCQO.Contact@oecd.org

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For questions please contact: HCQO.Contact@oecd.org

DATA COLLECTION OVERVIEW

For questions please contact: HCQO.Contact@oecd.org

OVERVIEW OF THE 2018-2019 HCQO DATA COLLECTION

The 2018-19 HCQO data collection includes 85 unique indicators. Two methods will be used to collect these indicators: Method I (existing Excel-based method) and Method II (using SAS). Some indicators will be collected using both methods. Other indicators will be collected only through one method. Table 1 shows which indicators will be collected and the method used. Countries are encouraged to use BOTH methods but are requested at a minimum to provide data using Method I. Some HCQO indicators ("other" in Table 1) are not collected through this data collection but through alternative sources such as existing international studies or other organizations.

Each indicator is classified into specific indicator sets including: Avoidable hospital admissions (AA), Prescribing (PR), Acute Care (AC), Mental Health Care (MH), Patient Experiences (PE), and Patient Safety (PS).

Structure of data collection guidelines

These guidelines have been divided by method and indicator set. In order to aide navigation, a color code has been created to guide users. Pages relevant to Method I are marked in blue while pages relevant to Method II are marked in red. Each indicator set also identified by an associated color: green for AA, pink for PR, yellow for AC, grey for MH, brown for PE, and turquoise for PS.

Methods and relevant indicators sets are colors are detailed here:

Method I (Existing method)- The collection of 6 HCQO indicator sets using the 6 standard Excel data collection sheets including:

  <u>Relevant indicator sets</u>
- Primary Care - Avoidable hospital admission AA
- Primary Care – Prescribing PR
- Acute Care AC
- Mental Health Care MH
- Patient Experiences PE
- Patient Safety PS

Method II (New SAS Program method) - The collection of 3 HCQO indicator sets using SAS programs provided by the Secretariat as part of the Data Modernisation Project including:

  <u>Relevant indicator sets</u>
- Primary Care - Avoidable hospital admission AA
- Acute Care AC
- Patient Safety PS

Colored boxes at the top of each indicator specification page are also included in the guidelines for ease of reference. The first color indicates the relevant indicator set and the second color the method used to calculate the indicator. In some cases both methods are used.

For questions please contact: HCQO.Contact@oecd.org

Example of color coding for a prescribing indicator using Method I.

These guidelines are constructed to help countries complete the 2018-19 data collection by offering practical information on filling Excel sheets, using SAS programs, etc. Detailed discussions of methodology and rational behind methodological decisions are not discussed in this document.

For questions please contact: HCQO.Contact@oecd.org

Table 1. Master List of indicators for 2018-19 HCQO Data Collection

Category	Measure	Data source		
		Method I	Method II	Other*
Primary Care - Avoidable hospital admissions (*AA*)	Asthma hospital admission	X	X	
	Chronic Obstructive Pulmonary Diseases (COPD) hospital admission	X	X	
	Congestive Heart Failure (CHF) hospital admission	X	X	
	Hypertension hospital admission	X	X	
	Diabetes hospital admission	X	X	
	Diabetes lower extremity amputation using unlinked data	X	X	
	Diabetes lower extremity amputation using linked data	X	X	
Acute Care (*AC*)	AMI 30 day mortality - National level using linked data	X		
	AMI 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data		X	
	AMI 30-day mortality - Hospital level using linked data		X	
	AMI 30 day mortality - National level using unlinked data	X		
	AMI 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data		X	
	AMI 30 day mortality - Hospital level using unlinked data		X	
	Hemorrhagic stroke 30 day mortality - National level using linked data	X		
	Hemorrhagic stroke 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data		X	
	Hemorrhagic stroke 30-day mortality - Hospital level using linked data		X	
	Hemorrhagic stroke 30 day mortality - National level using unlinked data	X		
	Hemorrhagic stroke 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data		X	
	Hemorrhagic stroke 30 day mortality - Hospital level using unlinked data		X	
	Ischemic stroke 30 day mortality – National level using linked data	X		
	Ischemic stroke 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data		X	
	Ischemic stroke 30-day mortality - Hospital level using linked data		X	
	Ischemic stroke 30 day mortality – National level using unlinked data	X		
	Ischemic stroke 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data		X	
	Ischemic stroke 30 day mortality - Hospital level using unlinked data		X	
	Hip fracture surgery initiated within 2 calendar days after admission to the hospital	X	X	
	Prolonged length of stay in hospital in older patients (delayed discharge)		X	
Mental Health Care (*MH*)	In-patient death from suicide among patients at the hospital with a mental disorder	X		
	Death from suicide within 1 year after discharge among patients diagnosed with a mental disorder	X		
	Death from suicide within 30 days after discharge among patients diagnosed with a mental disorder	X		
	Excess mortality from schizophrenia	X		
	Excess mortality from bipolar disorder	X		
	Excess mortality from severe mental illness	X		

Category	Measure	Data source		
		Method I	**Method II**	**Others***
Patient Experiences (***PE***)	Consultation skipped due to costs	X		
	Medical tests, treatment or follow-up skipped due to costs	X		
	Prescribed medicines skipped due to costs	X		
	Waiting time of more than 4 weeks for getting an appointment with a specialist	X		
	Doctor spending enough time with patients during the consultation	X		
	Regular doctor spending enough time with patients during the consultation	X		
	Doctor providing easy-to-understand explanations	X		
	Regular doctor providing easy-to-understand explanations	X		
	Doctor giving opportunity to ask questions or raise concerns	X		
	Regular doctor giving opportunity to ask questions or raise concerns	X		
	Doctor involving patients in decisions about care or treatment	X		
	Regular doctor involving patients in decisions about care or treatment	X		
Primary Care – Prescribing (***PR***)	Adequate use of cholesterol lowering treatment in people with diabetes (DDDs/Days)	X		
	First choice antihypertensives for people with diabetes (DDDs/Days)	X		
	Long-term use of benzodiazepines and related drugs in older people ($\geq$ 365 DDDs/Days per year)	X		
	Use of long-acting benzodiazepines in older people	X		
	Volume of cephalosporines and quinolones as a proportion of all systemic antibiotics prescribed (DDDs/Days/Users)	X		
	Overall volume of antibiotics for systemic use prescribed (DDDs/Days/Users)	X		
	Any anticoagulating drug in combination with an oral NSAID.	X		
	Proportion of 75 years and over who are taking more than 5 medications concurrently	X		
	Overall volume of opioids prescribed	X		
	Proportion of the population who are chronic opioid	X		
	Proportion of people 65 and over prescribed antipsychotics	X		
Patient Safety (PS)	Retained surgical item or unretrieved device fragment using unlinked data	X	X	
	Retained surgical item or unretrieved device fragment using linked data		X	
	Postoperative pulmonary embolism - hip and knee replacement discharges using unlinked data	X	X	
	Postoperative pulmonary embolism - hip and knee replacement discharges using linked data		X	
	Mortality among hip and knee replacement discharges with postoperative pulmonary embolism using linked data		X	
	Postoperative deep vein thrombosis - hip and knee replacement discharges using unlinked data	X	X	
	Postoperative deep vein thrombosis - hip and knee replacement discharges using linked data		X	
	Mortality among hip and knee replacement discharges with postoperative deep vein thrombosis using linked data		X	
	Hip and knee replacement discharges without postoperative pulmonary embolism or deep vein thrombosis using linked data		X	
	Mortality among hip and knee replacement discharges without postoperative pulmonary embolism or deep vein thrombosis using linked data		X	
	Postoperative sepsis - abdominal discharges using unlinked data	X	X	
	Postoperative sepsis - abdominal discharges using linked data		X	
	Post-operative wound dehiscence using unlinked data	X	X	
	Post-operative wound dehiscence using linked data		X	
	Obstetric trauma vaginal delivery with instrument	X	X	

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		X	X	
	Obstetric trauma vaginal delivery without instrument	X	X	
	Pressure ulcer prevalence - LTC			X
	Healthcare associated infections - LTC			X
	Healthcare associated infections - Acute care			X

Category	Measure	Data source		
		Method I	Method II	Others*
Cancer survival	Cervical cancer screening in women aged 20-69 within the past 3 years			X
	Cervical cancer: age-standardised five-year net survival			X
	Cervical cancer mortality in women			X
	Mammography screening in women aged 50-69 within the past 2 years, 2005 and 2015			X
	Breast cancer: age-standardised five-year net survival			X
	Breast cancer mortality in women			X
	Colon cancer: age-standardised five-year net survival (men, women, total)			X
	Rectal cancer: age-standardised five-year net survival (men, women, total)			X
	Colorectal cancer mortality (men, women, total)			X
	Acute lymphoblastic leukaemia in children: age-standardised five-year net survival (total)			X

* Includes data from OECD health statistics, the CONCORD study, the ECDC, and CDC

For questions please contact: HCQO.Contact@oecd.org

KEY CHANGES

A number of changes have been made since the 2018-19 HCQO data collection. Main changes are listed here.

Data collection Methods

A new data collection (Method II) has been added to collect HCQO indicators. This method, based on SAS programs will be used to collect from the Avoidable admission (AA), Acute Care (AC), and Patient Safety (PS) indicator sets. Use of Method II is strongly encouraged in order to increase reliability and comparability of data. Some indicators, including all patient safety indicators using linked data may only be calculated using Method II.

Guidelines

Centralisation of indicators

In past data collections numerous data collection guidelines have existed including those specific to mental health or patient safety. This year all guidelines and indicators have been merged into the current document.

Harmonization/simplification of terminology

The terms "admission-based", "patient-based", "surgical admission-based", and "all admission-based" have been used in past data collections to describe indicators and indicator calculations. For the purposes of clarity and harmonization, these terms have been replaced by the terms "unlinked data" (replacing "admission-based", "surgical admission-based") and "linked data" (replacing "patient-based", and "all-admission based").

Method I (existing method using Excel sheets)

Historic data and data provision – new import/export button

Excel spreadsheets sent to countries for data collection in previous data collections were typically pre-filled with historic data by the Secretariat. This year a new option in the Excel spreadsheets to import and export data using .csv filed will facilitate the process of pre-filling data. Instead of providing prefilled questionnaires to each country, the Secretariat will make standard, blank questionnaires available to countries. The Secretariat will then provide each country with country specific .csv files containing historic data. Countries are asked to use the new import option using a built in button for this purpose to import these historic data directly into the Excel sheet. Once new data has been entered by the countries for the latest year, the export option will be available to create a new .csv file containing all data which should be returned to the OECD by e-mail rather than the excel sheet itself.

For questions please contact: HCQO.Contact@oecd.org

Sources and methods data collection

In the past, sources and methods data have been collected through the same Excel spreadsheet used to collect indicator data from countries. This year these data will be collected through an online survey supported by Limesurvey. Details of this process are available in the section "Method I".

Primary Care – Avoidable hospital admissions (AA)

The following changes have been made to the specification of Avoidable hospital admission indicators:

Removal of all R&D data for AA indicators including information on:

- o In-hospital mortality
- o Transfers
- o Secondary diagnosis fields
- o Minor lower extremity amputation

Primary Care – Prescribing (PR)

The following changes have been made to the specification of prescribing indicators:

Updates to code lists used to calculate the following indicators (see indicator specifications for more info):

- First choice antihypertensives for people with diabetes
- Long-term use of benzodiazepines and benzodiazepine related drugs in 65 years and over

The addition of the following indicators:

- Proportion of 75 years and over who are taking more than 5 medications concurrently
- Overall volume of opioids prescribed
- Proportion of the population who are chronic opioid users
- Proportion of 65 years and over prescribed antipsychotics

Acute Care

The following changes have been made to the specification of acute care indicators:

Removal of all R&D data for AC indicators including those collecting data on:

- Day cases
- Hip Fracture initiated within specific cut-off points (day 0, day 1, day 2, 48 hours)

The inclusion of the following indicators into the standard indicator set:

- AMI 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data
- AMI 30-day mortality - Hospital level using linked data

- AMI 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data
- AMI 30 day mortality - Hospital level using unlinked data

Inclusion of the following indicators as a pilot data collection:

- Hemorrhagic stroke 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data
- Hemorrhagic stroke 30-day mortality - Hospital level using linked data
- Hemorrhagic stroke 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data
- Hemorrhagic stroke 30 day mortality - Hospital level using unlinked data
- Ischemic stroke 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data
- Ischemic stroke 30-day mortality - Hospital level using linked data
- Ischemic stroke 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data
- Ischemic stroke 30 day mortality - Hospital level using unlinked data
- AMI 30 day mortality after PCI - Hospital level using unlinked data
- Prolonged length of stay in hospital in older patients (delayed discharge)

Patient Safety

The following changes have been made to the specification of patient safety indicators:

Removal of all R&D data for PS indicators collecting information on:

- Average secondary diagnosis
- Calculation of a secondary denominator (DENX)

Removal of "all-admission" (linked data) versions of patient safety indicators from Method I.

Due to the complicated nature of these indicators, the Secretariat will collect these indicators using only Method II and SAS code developed by the Secretariat for this purpose.

For questions please contact: HCQO.Contact@oecd.org

Inclusion of the following indicators as a pilot data collection:

- Mortality among hip and knee replacement discharges with postoperative pulmonary embolism using linked data

- Mortality among hip and knee replacement discharges with postoperative deep vein thrombosis using linked data

- Hip and knee replacement discharges without postoperative pulmonary embolism or deep vein thrombosis using linked data

- Mortality among *hip and knee replacement discharges without postoperative pulmonary embolism or deep vein thrombosis using linked data*

Other Existing HCQO Indicators

Specifications for all other indicators within the HCQO suite of indicators will remain largely unchanged for the HCOI data Collection for 2018-19.

For questions please contact: HCQO.Contact@oecd.org

MATERIALS

Materials necessary for the HCQO 2018-19 data collection including both Method I and Method II will be made available either through the online community for the Working Party of Health Care Quality and Outcomes (HCQO): https://community.oecd.org/community/hcqo-working-party or sent directly to country contacts via e-mail from the Secretariat. Below is a list of all materials and how they will be made available to countries. For any issues related to signing up to the HCQO online community or accessing the site please contact Duniya Dedeyn (Duniya.DEDEYN@oecd.org).

Table 2 List of data collection materials and sources

	Available from	
	Community website	Sent from OECD by e-mail
Data collection guidelines	X	
Method I		
Excel questionnaires	X	
.csv files with country specific historic data		X
Token necessary to fill out Sources and Methods survey		X
Method II		
SAS programs	X	
Data dictionary for analysis dataset	X	
Diagnosis and Procedure code list	X	
Step 2 data inputs (sent in February)		X
Token necessary to fill out Sources and Methods survey and provide hospital characteristics		X

List of Excel spreadsheets used for Method I

- Primary Care - Avoidable hospital admission AA
- Primary Care – Prescribing   PR
- Acute Care AC
- Mental Health Care MH
- Patient Experiences PE
- Patient Safety PS

For questions please contact: HCQO.Contact@oecd.org

List of SAS programs used for Method II

- AA_calculate
- Diabetes LEA_unlinked
- Diabetes LEA_linked
- Mortality_linked
- Mortality_unlinked
- Hip Fracture Surgery
- Retain_surgical_item_unlinked
- Retain_surgical_item_linked
- DVT_PE_unlinked
- DVT_PE_linked
- Sepsis_unlinked
- Sepsis_linked
- Wound_D_unlinked
- Wound_D_linked
- OB_trauma
- Delayed discharge
- Failure to rescue after DVT/PE

DATA COLLECTION CALENDAR

The 2018/19 HCQO data collection will take place between November 2018 and March 2019. Key dates are included in the timelines below. Method I will begin on November 12, 2018 with the distribution of data collection materials and will finish on March 15, 2019 with submission of data to the OECD. Method II will also include distribution of data collection materials on November 12, 2018 and a final submission date of March 15, 2019. Some indicators collected using Method II will include a supplementary data exchange with the OECD. For those indicators identified as being "two-step" data for step 1 will be requested from countries on January 15, 2019. The data necessary to complete step 2 calculations will be provided to countries by the OECD on February 1, 2019.

Method I timeline	**Method II timeline**

2018

N O V	– **November 12, 2018** – Countries are provided with all data collection material
D E C	

2019

J A N	
F E B	
M A R	– **March 15, 2019**- Deadline for submission of all data (Submit the.csv files only using the "export" button, do not submit the Excel file)

N O V	– **November 12, 2018** – Countries are provided with all data collection material
D E C	
J A N	– **January 15, 2019** - Deadline for submission of Step 1 data to OECD for selected indicators
F E B	– **February 1, 2019** - Countries provided with data necessary to complete Step 2 for selected indicators
M A R	– **March 15, 2019**- Deadline for submission of all data

For questions please contact: HCQO.Contact@oecd.org

CALCULATION INSTRUCTIONS

GENERAL INDICATOR CALCULATION NOTES

Linked vs unlinked data

A number of indicators can be calculated using either unlinked or linked data.

Unlinked data (related to former "admission-based" or "surgical admission based" indicators) refers to hospital data used for indicator calculation that come from a single hospital admission. These data are not linked to other hospital admissions or death outside the hospital using a unique patient identifier.

Linked data (related to former "patient-based", or "all-admission based" indicators) refers to hospital data used for indicator calculation that are linked to other hospital admissions or death outside the hospital using a unique patient identifier.

Work within the HCQO group has shown that indicators based on linked data are more robust and comparable across countries. The group has supported a move toward greater use of these indicators and has included this principle 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.

Indicators using linked data are often more complicated to calculate than those based on unlinked data. SAS code provided by the Secretariat as part of Method II is designed to help countries make these calculations for many indicators.

Patient safety indicators using linked data

Due to their inherent complexity, all patient safety indicators based on linked data will be collected ONLY through the use of SAS programs provided by the Secretariat (Method II).

Diagnostic Codes

Indicator specification found in this document provide relevant diagnostic codes based on ICD-9-CM and ICD-10, 2010 (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 using either Method I or Method II countries are asked to convert diagnostics codes provided to those used locally.

Table 3 shows that one 3-digit WHO code for decubitus ulcer corresponds to eight 4-digit codes in Canada, five 4-digit codes in Australia and fifty 5-digit codes in Germany. To calculate the numerator for the indicator decubitus ulcer, all country specific subgroups of the listed WHO code L89 must be taken into account.

Table 3 EXAMPLE OF COUNTRY VERSIONS

ICD-10 WHO (2006)		ICD-10-CA (Canada, 2006)	ICD-10-AM (Australia, 2006)	ICD-10-GM (Germany, 2006), a 5th digit

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				has to be used to specify the location (10 subgroups)
L89 Decubitus ulcer	**L89.0**	Decubitus ulcer limited to erythema only [redness] without skin breakdown (Stage 1)	Decubitus [pressure] ulcer, stage I	
	L89.1	Decubitus ulcer limited to breakdown of skin (Stage 2)	Decubitus [pressure] ulcer, stage II	Decubitus ulcer Stage 1
	L89.2	Decubitus ulcer with fat layer exposed (Stage 3)	Decubitus [pressure] ulcer, stage III	Decubitus ulcer Stage 2
	L89.3	Decubitus ulcer with depth involving muscle (Stage 4)	Decubitus [pressure] ulcer, stage IV	Decubitus ulcer Stage 3
	L89.4	Decubitus ulcer with depth involving bone (Stage 5)		Decubitus ulcer Stage 4
	L89.5	Decubitus ulcer with joint space involvement (Stage 5)		
	L89.8	Decubitus ulcer with necrosis involving muscle or bone (Stage X)		
	L89.9	Decubitus ulcer without mention of severity	Decubitus [pressure] ulcer, unspecified	Decubitus ulcer, unspecified

Procedure Codes

A number of HCQO indicator use procedure codes for calculation.

There is no common international medical procedure classification and each country participating in the data collection is likely to use a different catalogue for procedure coding. It was not possible for the purposes of this data collection to provide a procedure code list for each country. The procedure codes from the ICD-9-CM 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.

METHOD I – (EXISTING METHOD)

The data collection Method I relies on Excel questionnaires for data collection as in previous data collections. Information on the use of these questionnaires is provided here. Information about specific indicators is available in the section "indicator definitions". Unlike previous data collections countries are asked to provide .csv files produced by the Excel sheets to the Secretariat rather than the Excel files themselves (see "Submitting raw data").

A separate Excel questionnaire based on a standard format and structure has been provided on the HCQO online community for the following sets of indicators:

- o   Primary Care - Avoidable hospital admission AA

- o   Primary Care – Prescribing PR

- o   Acute Care AC

- o   Mental Health Care MH

- o   Patient Experiences PE

- o   Patient Safety PS

Using the Excel questionnaires:

Please note that each Excel questionnaire for the routine suite of HCQOs includes:

- A tool to flag important issues related to data (RESU_XX spreadsheets)

- Automatic procedures to check internal consistency of data (Excel Add-in).

- New import/export button (INDEX spreadsheet). Import for prefilling the historical data, Export to generate a csv file to be submitted to the secretariat. (see "Downloading and prefilling Excel templates" and "Submitting raw data")

Certain cells within the worksheets of the questionnaires are protected in order to prevent accidental change or deletion. Cell protection has been instigated to ensure the integrity of fixed values, formulae and calculated results. **PLEASE DO NOT UN-PROTECT THE WORKSHEETS** as we are using automatic procedures to check data and transfer them directly into the system (OECD.StatExtracts).

STANDARD QUESTIONNAIRE FORMAT AND STRUCTURE

Each questionnaire contains several worksheets with the following titles (*XX* indicates a specific indicator code):

For questions please contact: HCQO.Contact@oecd.org

- *COUNTRY* – includes contact information and a summary of the general instructions for completing the questionnaire. Please note that the contact information will assist the Secretariat in contacting the appropriate person should any data validation or further information be required.

- *INDEX* – includes the list of indicators relevant to the particular questionnaire. Each indicator listed in the *INDEX* worksheet includes the following two worksheets: *DATA_XX* and RESU_*XX*. A new import/export button has been added. The import button will allow the country to prefill historical data provided by the Secretariat. The Export button will generate the .csv files which should be returned to the OECD by e-mail. Both files (DATA and RESU) should be returned. Please do not submit excel files.

- *DATA_XX* – includes a table with the age and/or sex stratified data to be provided by countries.

- *RESU_XX* - this worksheet generates crude and/or age (-sex) standardised rates/means (along with 95% confidence interval values) using the disaggregated data provided in the worksheet *DATA_XX*. Charts are also provided to help visualise the trend of data over time.

- *S&M* – You will be redirected to a list of on-line surveys (usually one per indicator set). This survey requires countries to provide information about the indicator's data source and methods. For some indicators, requests for additional data and information are included. This information is essential to assess the comparability of data across countries.

- *REPORT* – This spreadsheet will be created once run the automatic checks using the add-in (see section "general instruction for filling in the questionnaires"). It includes the list of all inconsistencies detected in the questionnaire that need to be corrected or explained.

Please note that active links have been embedded between various worksheets in order to facilitate navigation within the questionnaire.

Please do not write any comments or provide data outside of designated cells in the Excel worksheets.

For questions please contact: HCQO.Contact@oecd.org

GENERAL INSTRUCTIONS FOR FILLING IN THE QUESTIONNAIRES

#1 CONSULTING THE OECD DEFINITIONS

Technical definitions for health care quality indicators are provided in this document under the section Indicator definitions and should be consulted before filling in the *DATA_XX* worksheet.

A glossary is also available in this document to help clarifying the meaning and application of key concepts used in the definitions.

Each of the indicator definitions is structure as follows:
- Population covered
- Numerator definition
- Denominator definition
- Relevant diagnostic and procedure codes

#2 DOWNLOADING AND PREFILLING EXCEL TEMPLATES

Instead of providing prefilled questionnaires, the Secretariat will make standard, blank questionnaires available to countries. The Secretariat will then provide each country individual with .csv files containing historic data. Each country may then use the new import option (INDEX spreadsheet) to import these historic data directly into the Excel sheet. Countries are requested to check these data in the worksheet *DATA_XX* and update the time series to reflect the most recent available data, preferably to the year 2017.

Figure 1 Illustration of Import button in Excel questionnaire (INDEX spreadsheet)
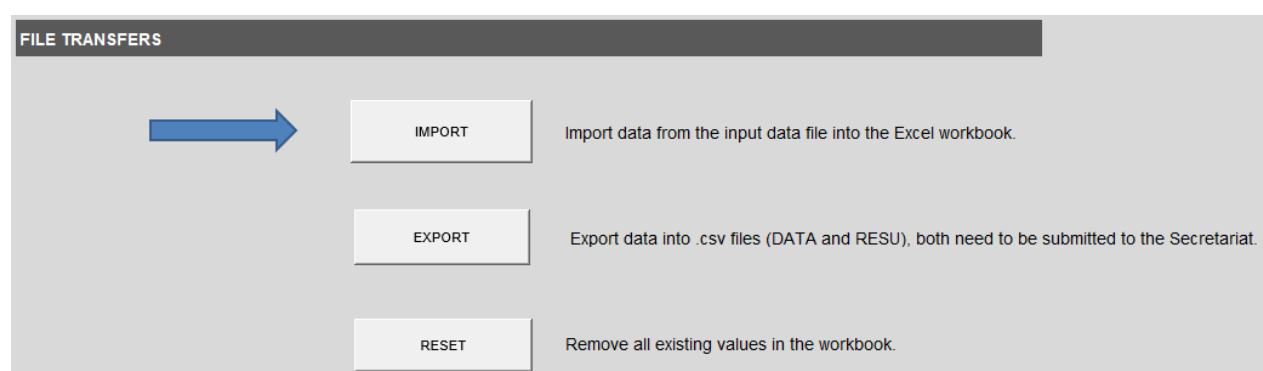
#3 VALIDATING DATA AND TREND OVER TIME

The *RESU_XX* worksheet generates crude and/or age(-sex) standardised rates/means in a table along with 95% confidence interval values using disaggregated data provided by countries in the *DATA_XX* worksheet. Please refer to the section "Reference material" for more information on the age (-sex) standardisation.

For questions please contact: HCQO.Contact@oecd.org

The *RESU_XX* worksheet includes a tool to flag important issues related to data consistency and comparability. Countries will find an additional column called "Flag" on the right of the table in the *RESU_XX* worksheet and are requested to type in the following letters to indicate data issues if there are any:

- **B** - Break in time series (due to a change in source, definition or calculation method). Please indicate a B **only for the year where the change occurs**.

- **D** - Important differences in methodology/deviation from the OECD definition. Please indicate a D for each year in which a deviation exists.

- **E** – Estimate or preliminary data.

We would however like to urge caution, as letters should be added only when necessary. Indicating a B means that it strongly affects the comparability of data over time whereas a D code means that it affects the comparability of data across countries. The OECD may modify the information provided in order to ensure international comparability. Please note that if a B or a D code has been indicated, an explanation should be provided respectively under the category "Break in time series" and "Compliance to definition" in the related on-line survey (list available in the worksheet *S&M*) (see "Section Checking and providing the Sources and Methods").

Charts showing trends over time are also provided to help identify unusual changes over time and detect possible errors. If data appear erroneous, please check and modify the data provided in the relevant *DATA_XX* worksheet.

The questionnaire contains some macros allowing users to check the internal consistency of data both within the indicator and between indicators when necessary. Please note that macros are disabled by default for security purpose in Microsoft Office. To make use of them, the user MUST ENABLE MACROS – see Reference Material – Enabling Macros.

Once users have enabled the macros, they should save and close the file, then re-open it. If Excel 97-2003 is used, an extra toolbar will appear on the right side of the screen (see Figure 2). If Office 2007, 2010 or 2016 is used, the "Add-Ins" tab will be added on the top menu (see Figure 3), and by clicking on the tab, users will find a button called "Run the checks".

Figure 2. Toolbar in Excel 97-2003

For questions please contact: HCQO.Contact@oecd.org
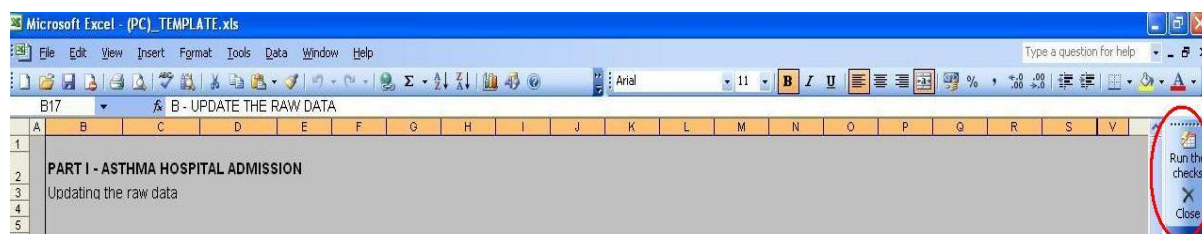
Figure 3. Toolbar in Excel 2007, 2010, and 2016
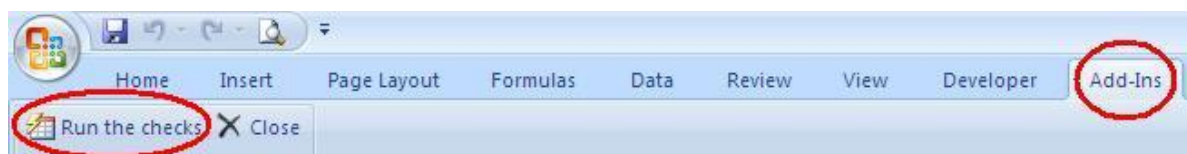
To run the macros, click on the button *Run the checks* after having entered the data for all indicators in the questionnaire (so that data can be checked between indicators).

Some cells may be highlighted in red and this means that the data do not comply with certain data checking rules embedded. Please refer to *Report* worksheet for respective checking rules. NUM refers to the numerator of indicator, DEN refers to the denominator and indicator codes are used in the worksheet. Countries are invited to correct any of the highlighted data. If these data are correct in the national context, please provide an explanation under the category "Compliance to definition" in the related on-line survey (list available in the worksheet *S&M*).

Once checking procedures are completed and if no inconsistency is detected, a message (see Figure 4) will appear on your screen.

Figure 4. No error detected screenshot
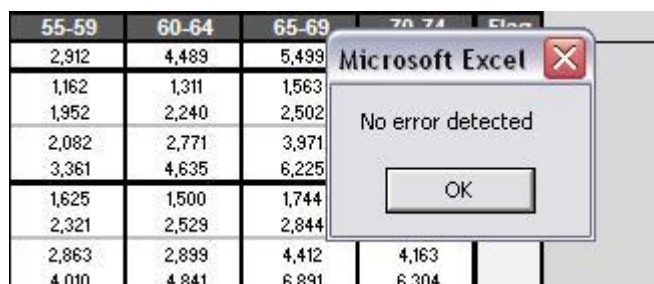
If there is any inconsistency, users are taken to the *REPORT* worksheet (see Figure 5) which gives a list of all inconsistencies in a summary table. The report details the relevant *DATA_XX* worksheet together with the cell reference by type of inconsistency.

Figure 5.   Report worksheet including a list of inconsistencies

	A	B	C	D	E	F
1	Consistency Checks					
2	Missing NUM and/or DEN		NUM should be lower than DEN		DEN for all indicators (except EXAMDBRT) should be equal	
3	Table	Cell	Table	Cell	Table	Cell
4			DATA_EXAMDBRT	E25		
5			DATA_EXAMDBRT	E26		
6			DATA_EXAMDBRT	E34		
7			DATA_EXAMDBRT	E35		
8						

By clicking on the cell reference in *REPORT* worksheet, users are directly taken to the cell highlighted in RED in the relevant DATA worksheet (see Figure 6). This allows users to rapidly identify where there may be a possible data issue.

Figure 6. Cells highlighted in red in the relevant worksheet

	Year	Sex	15-19	20-24	25-29	30-34	35-39	40-44
18	Year	Sex	15-19	20-24	25-29	30-34	35-39	40-44
22								NUMERATOR
23	2000	Male	86	80	96	117	142	187
24		Female	97	103	90	98	96	229
25	2001	Male	113	93	110	143	192	261
26		Female	112	108	133	112	131	246
27	2002	Male	99	78	99	129	169	244
28		Female	122	94	100	98	126	257
29	2003	Male	97	98	107	139	174	300
30		Female	92	97	114	113	115	240
31	2004	Male	109	96	117	167	207	358
32		Female	91	105	143	144	149	294
33	2005	Male	139	122	122	188	253	380
34		Female	123	130	133	185	193	332
35	2006	Male	160	130	126	203	289	434
36		Female	127	115	149	194	198	342
37	2007	Male	141	126	126	184	273	468
38		Female	104	121	134	179	218	352

Countries are invited to correct any of the highlighted data *before* submitting the questionnaire to the OECD. If these data are correct in the national context, please provide an explanation under the category "Compliance to definition" in the on-line survey (list available in the S&M worksheet).

To re-check the data, click again on the Add-Ins button *Run the checks* and repeat the checking operation (described in the previous paragraphs) until the message "No error detected" appears on your screen (see Figure 4).

For questions please contact: HCQO.Contact@oecd.org

#4 SUBMITTING RAW DATA

Once new data has been entered by the countries for the latest year (or multiple years if historical data has been revised), the export option will be available to create two .csv files containing raw data (DATA) and results (RESU) which should be both returned to the OECD by e-mail rather than the excel sheet itself.

Figure 7 Illustration of Export button in Excel questionnaire
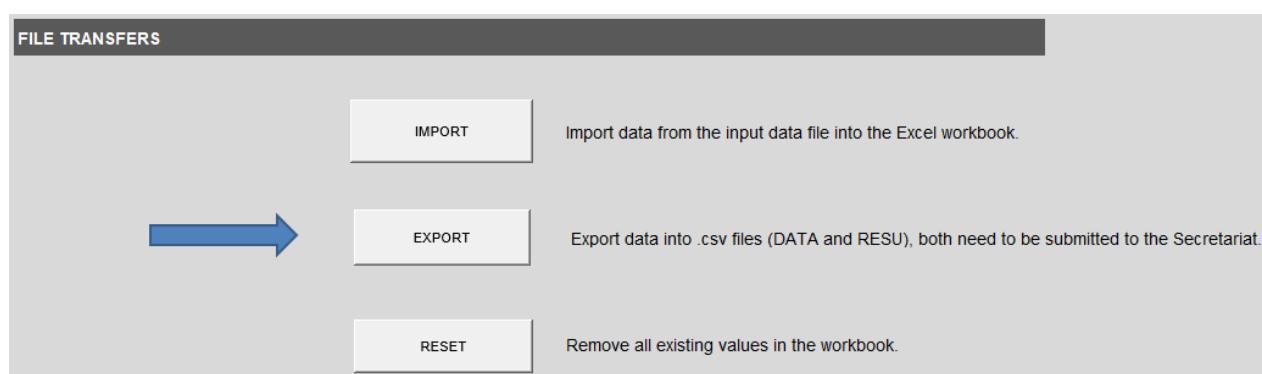
#5 CHECKING AND PROVIDING THE SOURCES AND METHODS

In the past sources and methods data have been collected through the same spreadsheet used to collect indicator data from countries. This year these data will be collected through an online survey using Limesurvey (list available in the worksheet *S&M*). Countries will be provided with a password to access these surveys by e-mail. Where appropriate and feasible, each survey has been pre-filled with the information on data source provided through the previous HCQI data collections. Countries are requested to check and update this information, giving particular attention to ensuring that the information provided is consistent across years. Please note that this information is essential to assess the comparability of data across OECD countries.

The on-line surveys are divided into several sections:

SECTION A: Source
In this section, countries are invited to provide information about the data source in order for the OECD Secretariat to assess its quality. All questions in this section need to be completed.

- **Data Custodian/Organisation** – countries are requested to report the name of the organisation or body that manages or is responsible for the information system or data set from which the indicator was calculated.

- **Name of the Information System/ Survey** – countries are requested to report the name of the information system, data set or survey from which the indicator was calculated. Please provide full titles for acronyms.

For questions please contact: HCQO.Contact@oecd.org

The following questions are included in the surveys:

- **Source Type -** countries are requested to select from the drop-down list the type of data from which the indicator is calculated. The options are:

  - Administrative: Refers to data sourced from routine administrative records. For example, hospital admissions data.

  - Registry: Includes mandatory and non-mandatory registries and refers to data that is collected on a specific illness/disease/diagnosis.

  - Survey: Refers to sample data collected through regular surveys and includes patient-based, population-based, and provider-based surveys

  - Other: Refers to any data source which does not comply with any of the above categories. For example, an *ad hoc* survey.

- **Nationally Representative –** countries are requested to assess whether the data source from which the indicator is calculated is nationally representative or not and then select either of the following from the drop-down list:

  - Yes - Nationwide data (i.e. census) or representative sample

  - No - Non-representative sample. In this case, countries are invited to provide details on the coverage of the data source.

- **Completeness of the Data Source –** countries are requested to assess the completeness of the data source from which the indicator is calculated and select one of the following from the drop-down list:

  - Yes - Complete: the criteria for completeness varies according to the data source type. In the case of surveys (patient- or population-based), it is important that the composition of the final response group is representative for the whole target population, whereas for other source types it is required that the data is mandated (e.g. administrative data, death registries) or if not mandated, close to 100% reporting compliance is achieved.

  - No - Not complete: refers to a data source with either a poor response rate or is a non-mandatory register with poor reporting compliance. In this case, countries are invited to provide details on the response rate of the data source (and eventual exclusion of certain sectors).

Please note that the exclusion of certain sectors (e.g. types of facilities, private sector, certain insurance funds) should be assessed. The eventual bias will be reflected in the share of services not represented, the population not included or the specific nature of services and/or population not included.

- **Regularity of Data Collection:** countries are requested to report on the regularity of the data collection by selecting one of the following from the drop-down list:

  - Yes - Source is updated at least every 5 years for population surveys and at least biennially (every 2 years) for the other data sources.

For questions please contact: HCQO.Contact@oecd.org

- No - Not regularly updated or with a periodicity that renders the available data outdated (i.e. more than 5 years for survey, more than 2 years for other sources). In this case, countries are invited to provide details on the periodicity of the data collection.

- **Stability of the Data Source -** countries are requested to report the stability of the data collection by selecting one of the following from the drop-down list:

  - <u>Yes</u> - Source has been updated <u>at least twice before</u> and, thus, there are data available coming from the same source for at least two previous periods.

  - <u>No</u> - Source has only been used once. In this case, countries are invited to explain why the source is not well established.

- Patient identifier (for relevant indicators) - countries are requested to report if the data source from which the indicator is calculated enables calculations using linked data (that is, the ability for patients to be tracked through the system to the extent required in the technical definition of the indicator) by selecting one of the following from the drop-down list:

  - <u>Yes</u> - Patient identifier is available.

  - <u>No</u> - Patient identifier is not available.

Additional questions are asked in the **Patient Experiences** questionnaire:

- **Type of survey** - countries are requested to identify the survey type from which the indicator is calculated by selecting one of the following options from the drop-down list

  - <u>Population-based (covering general population)</u>

  - <u>Provider-based (covering patients who had contact with health care providers);</u>

  - <u>Other (please specify below)</u>

- **Target population** – countries are requested to identify the survey target population from which the indicator is calculated by selecting one of the following options from the drop-down list:

  - General population

  - Patients with inpatient care

  - Patients with outpatient care

  - Other (please specify below)

- **Sample frame:** A material or device from which a sample of the survey target population was drawn. It includes census, provider list, patient registry, telephone directory, etc.

- **Sample method:** A method employed to select a sample from the sample frame. These include: simple random sample, stratified sample, cluster sample, etc.

- **Sample size of the most recent survey:** The sample size of the survey refers to the number of people who are included in the survey sample.

- **Mode of data collection:** A mode used to collect data. This includes telephone, face-to-face interview, postal, internet, computer-assisted interviewing, etc.

- **Response rate of the most recent survey:** The response rate refers to the number of people who answered the survey divided by the number of people in the survey sample.

- **Periodicity of the survey**: countries are requested to report how often the survey is conducted.

SECTION B: Data

- **Compliance to definition:** If a D has been indicated in the *RESU_XX* worksheet for an indicator, countries should provide information in the comments box on any aspects of the indicator (i.e. numerator, denominator, age group break down, or other aspects) that do not comply with the definition. Additional questions are also asked to assess the data comparability across countries.

- **Break in time series:** If a B code has been indicated in *RESU_XX* worksheet for an indicator, countries are requested to provide information in the comments box on why such a break exists (i.e. from 2000-2005 data included discharges from 1 out of 36 hospitals, since 2006 data included discharges for all hospitals). This information facilitates the assessment of data comparability over time.

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METHOD II – (SAS METHOD)

The data collection Method II relies on SAS programs for data collection similar to the Data Modernisation Project. Information about the use of the SAS programs is detailed in this section.

SAS programs provided by the Secretariat are designed for collecting data on indicators from the following indicator sets:

- Primary Care - Avoidable hospital admission AA
- Acute Care AC
- Patient Safety PS

These indicators will be calculated using 13 different SAS programs provided by the Secretariat. These include the following programs:

- AA_calculate
- Diabetes LEA_unlinked
- Diabetes LEA_linked
- Mortality_linked
- Mortality_unlinked
- Hip Fracture Surgery
- Retain_surgical_item_unlinked
- Retain_surgical_item_linked
- DVT_PE_unlinked
- DVT_PE_linked
- Sepsis_unlinked
- Sepsis_linked
- Wound_D_unlinked
- Wound_D_linked
- OB_trauma
- Delayed discharge
- Failure to rescue after DVT/PE

These SAS programs have been prepared to promote a consistent approach to calculating the indicators from the hospital datasets of member countries and to assist countries in implementing the specifications of the pilot data collection, given the inherent complexity of the task.

All SAS programs have been developed based on the 2018-2019 HCQO data collection guidelines. Each SAS program is developed to calculate one indicator or one suite of indicators with notes indicating the flow and purposes of the codes.

These programs are designed to be used with the HCQO analysis dataset (see definition below). These programs will require additional data from countries in order to function. However, countries should not change code related to indicator calculation.

For questions please contact: HCQO.Contact@oecd.org

Using the SAS Programs:

Use of the SAS programs including six main steps.
1. Creation of the HCQO analysis dataset
2. Running the SAS programs.
3. Provision of "step 1" data to the OECD (see two-step process)
4. Provision of "step 2" data elements to countries
5. Submission of final rates for all indicators
6. Check and providing the sources and methods and hospital characteristic data.
7. Review and provision of indicator rates from Secretariat.

SAS expertise

Some countries may have limited or no SAS expertise available to help in the use of Method II. Several options are available for the Secretariat to support these countries. Countries who would like calculate indicators using Method II and would like help are encourage to contact the Secretariat at HCQO.Contact@oecd.org to discuss this possibility.

Table 4 SAS programs and related indicators.

Category	SAS program	Measure	2 step process
Primary Care - Avoidable hospital admissions (**AA**)	AA_calculate	Asthma hospital admission	
		Chronic Obstructive Pulmonary Diseases (COPD) hospital admission	
		Congestive Heart Failure (CHF) hospital admission	
		Hypertension hospital admission	
		Diabetes hospital admission	
	Diabetes LEA_unlinked	Diabetes lower extremity amputation using unlinked data	
	Diabetes LEA_linked	Diabetes lower extremity amputation using linked data	
Acute Care (AC)	Mortality_linked	AMI 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data	X
		AMI 30-day mortality - Hospital level using linked data	X
		Hemorrhagic stroke 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data	X
		Hemorrhagic stroke 30-day mortality - Hospital level using linked data	X
		Ischemic stroke 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data	X
		Ischemic stroke 30-day mortality - Hospital level using linked data	X
	Mortality_unlinked	AMI 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data	X
		AMI 30 day mortality - Hospital level using unlinked data	X
		Hemorrhagic stroke 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data	X
		Hemorrhagic stroke 30 day mortality - Hospital level using unlinked data	X
		Ischemic stroke 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data	X
		Ischemic stroke 30 day mortality - Hospital level using unlinked data	X
	Hip Fracture Surgery	Hip fracture surgery initiated within 2 calendar days after admission to the hospital	
	Delayed discharge	Prolonged length of stay in hospital in older patients (delayed discharge)	
Patient Safety (PS)	Retain_surgical_item_unlinked	Retained surgical item or unretrieved device fragment using unlinked data	X
	Retain_surgical_item_linked	Retained surgical item or unretrieved device fragment using linked data	X
	DVT_PE_unlinked	Postoperative pulmonary embolism - hip and knee replacement discharges using unlinked data	X
		Postoperative deep vein thrombosis - hip and knee replacement discharges using unlinked data	X
	DVT_PE_linked	Postoperative pulmonary embolism - hip and knee replacement discharges using linked data	X
		Postoperative deep vein thrombosis - hip and knee replacement discharges using linked data	X
	Sepsis_unlinked	Postoperative sepsis - abdominal discharges using unlinked data	X
	Sepsis_linked	Postoperative sepsis - abdominal discharges using linked data	X
	Wound_D_unlinked	Post-operative wound dehiscence using unlinked data	X
	Wound_D_linked	Post-operative wound dehiscence using linked data	X
	OB_trauma	Obstetric trauma vaginal delivery with instrument	X
		Obstetric trauma vaginal delivery without instrument	X
	Failure to rescue after DVT/PE	Mortality among hip and knee replacement discharges with postoperative pulmonary embolism using linked data	X
		Mortality among hip and knee replacement discharges with postoperative deep vein thrombosis using linked data	X
		Hip and knee replacement discharges without postoperative pulmonary embolism or deep vein thrombosis using linked data	X
		Mortality among hip and knee replacement discharges without postoperative pulmonary embolism or deep vein thrombosis using linked data	X

GENERAL INSTRUCTIONS FOR USING SAS PROGRAMS

#1 CREATION OF THE HCQO ANALYSIS DATASET

Creation of a standardized analysis dataset is a prerequisite for calculation of indicators using the SAS program. Most elements for this dataset are found in national hospital administrative databases. Once created, this dataset will include all the necessary data elements needed to run SAS programs and produce the desired outputs.

It is important that the analysis dataset comply with the definitions of the specified units of measurement for the data collection (see Glossary of Terms) including definition of 'hospital', 'hospital admission' and 'hospital episodes'. To help with dataset construction, the OECD has provided a **data dictionary** via the HCQO online community site. This **data dictionary** contains the names, types, and descriptions of the variables to be included in the analysis dataset. It also includes a sample dataset to provide a visual example of dataset specifications.

For countries seeking to provide rates based on linked data, their datasets should be able to provide a "patient_id" variable (see Glossary) in order to link hospital admissions. This patient_id will then be used by the SAS codes to:

- To construct hospital episodes, where more than one acute and/or other type of hospital admission and discharge are taken into account for the treatment of a patient.

- To track patient across hospitals admissions and episodes for certain conditions/ procedures within and across relevant calendar years in the reference period.

- To identify the death of a patient within 30 days of hospital admission to the reference hospital episode, whether the patient dies in the initial hospital admission, another hospital or some other location in the community.

Countries are asked to create an HCQO analysis dataset using 5 data years, 2013, 2014, 2015, 2016, and 2017. A multiple-year dataset is necessary for the calculation of some indicators which aggregate data over a time period or other which use a look-back period for risk adjustment.

The Secretariat is available to help countries work through issues regarding the transformation of their national hospital datasets to create the analysis dataset. While countries are welcome to contact the Secretariat by telephone and e-mail they are also encouraged to join the Health Data Modernisation Project on-line community and ask questions there. (https://community.oecd.org/community/health-data-modernisation-project). This community site was created to support the Health Data modernisation project and will continue to exist to support use of Method II. Online discussions and answers no this forum may

benefit other countries with similar issues. Please contact the Secretariat to enrol in the on-line community (HCQO.Contact@oecd.org).

#2 RUNNING THE SAS PROGRAMS

Once the Analysis dataset has been prepared countries may proceed to running SAS programs to calculate indicators. These programs have been designed to run on the analysis dataset with minimal changes from the countries. Some input however is needed to ensure proper calculations. Some of the key elements required for patient safety indicator calculation may not be available for all countries; alternative SAS codes are provided.

Preparing SAS programs – completing Step 0

Each SAS code provided by the Secretariat has a similar structure. A "Step 0" is included in each program and will need to be completed with relevant information by each country. This information includes about the data path, the number of secondary diagnosis field in the dataset as well as diagnosis and procedure codes used locally to define relevant conditions.

Diagnosis and procedure codes defined by the Secretariat for these indicators including ICD-9-CM and ICD-10, 2010 (WHO version) codes are available in the Excel sheet **Diagnosis and Procedure code list** provided by the Secretariat via the HCQO online community. Countries will be asked to complete step 0 with either the codes provided (if relevant) or with country specific codes mapped to those provided.

Figure 8 Example of SAS coding step 0

```
********************************;
/* Step 0: predefine macro variables */
libname in "This is the path of your input data" ;
%let path=[path to save exported CSV files];

%let year=2015; /* or other data reference year */
%let data =in.[name of your input data]; /* for example, "in.hosp_2012_2015"
*/
%let n=[a number, such as 10]; /* this is the number of secondary diagnosis
fields in your input data */
%let m=[a number, such as 5]; /* this is the number of procedure fields in
your input data */


/* Cystic fibrosis */
%let cystic_fib=%str(   );

/*Asthma*/
%let asthma=%str(   );

/* congestive heart failure */
%let CHF=%str(   );
```

SAS outputs

Once the appropriate information has been completed in step 0 the SAS programs may be run.

A series of Comma-Separated-Values (CSV) files will be generated by running the OECD provided SAS programs. These .csv files may contain patient counts by age group, crude rates, or other information. Countries are advised to send those CSV files, along with SAS log files, directly to the OECD by e-mail (HCQO.contact@oecd.org).

Two-step process

A number of indicators cannot be calculated by countries directly from data available in the analysis dataset and necessitate the use of a two-step process similar to that used for calculation of 30-day AMI mortality as part of the Hospital Performance Project. For these indicators (see Table 4) SAS programs provided will be capable of producing both "step 1" and "step 2" (or final) outputs.

The Secretariat will request countries to provide "step 1" results that will be combined with those of other countries to create a reference population for the purposes of calculating variable coefficients to be use for rate adjustment as part of "step 2" calculations.

#3 PROVISION OF "STEP 1" DATA TO THE OECD

Once "step 1" data has been calculated for relevant indicators, countries are requested to send this information to the Secretariat by January 15, 2019. The Secretariat will combine these data with those from other countries to create a reference population for the purposes of coefficient creation and rate adjustment.

#4 PROVISION OF "STEP 2" DATA ELEMENTS TO COUNTRIES

Once the reference population has been created by the Secretariat, relevant coefficients will be returned to countries by February 1, 2019. These coefficients will be used to create "step 2" data or final, risk adjusted rates for relevant indicators.

#5 SUBMISSION OF FINAL RATES FOR ALL INDICATORS

All final data results from the SAS outputs include those for indicators necessitating a two-step process and those not (see Table 4) is to be provided by March 15th, 2019. Countries are requested to send .csv files containing SAS outputs as well as SAS logs created during the execution of the SAS programs.

#6 CHECKING AND PROVIDING THE SOURCES AND METHODS AND HOSPITAL CHARACTERISTICS

Data on Sources methods will include questions about the information and definitions used for creation of the analysis dataset, use of the SAS programs, and hospital characteristics used to further inform hospital-level mortality indicators. As for Method I, sources and methods for Method II will be collected through an online survey using Limesurvey. A link to this survey along with a password to access it will be provided through e-mail sent to each country. Please note that this information is essential to assess the comparability of data across OECD countries.

The on-line survey is divided into several sections:

For questions please contact: HCQO.Contact@oecd.org

- Data Source
- Data Coverage
- Data Classifications
- Unit of Measure
- Specification of Variables
- Patient ID
- SAS code
- Other Comments
- Hospital Characteristics

#7 REVIEW OF PROVISION OF INDICATORS RATES

Many of the SAS outputs do not allow for a direct calculation of indicator rates. Once countries have provided all SAS outputs, the Secretariat will calculate final indicator rates and share these with countries for review and/or revision if necessary.

For questions please contact: HCQO.Contact@oecd.org

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 particularly when calculating indicators using Method I:

- **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.

- **Hospital** is defined as single separate organisational entity that provides admitted patient care. Some hospitals may be located on more than one campus, while some hospital campuses will have more than one hospital. The organisation of care in some countries results in the aggregation of single hospital entities into corporations, trusts, groups, chains, or networks. For the purposes of this data collection the term hospital represents a single hospital entity.

  Practical approaches to distinguishing a single hospital entity from aggregations of hospital entities could include consideration of whether the entity is the lowest level of organisation that has in itself a) a recognised unique hospital name b) has a separate chief executive and/or board of management c) requirements for reporting routine administrative data and/or d) is generally recognised as a single hospital entity by the relevant administering authority.

- **Hospital admission** 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 Diagram 1)

- **Hospital episode** 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 Diagram 1 below)

- **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.

- **MDC 14/15** - In countries using DRGs for hospital reimbursement, cases are assigned a Major Diagnostic Category (MDC) by the reimbursement software. MDC 14 and 15 correspond to obstetric admissions. For countries using **ICD-10 without DRG reimbursement**, or where MDC assignment is impossible for whatever reason, lists of ICD-10-WHO codes relating to MDC 14 and 15 are provided at Annex D and E. Countries should note that these codes lists do <u>not</u> fully align with ICD 10 Chapter XV Pregnancy, childbirth and the puerperium and Chapter XVI Certain conditions originating in the perinatal period.

- **Patient_id:** patient identifier which is unique by individual and can be used at a minimum to construct hospital admissions. (See also unique patient 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 PSIs in the HCQI 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 from 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.

- **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.

A schematic representation of the structure and relationship between hospital admissions and hospital episodes is provided at Diagram 1.

Diagram 1: Structure and Relationship between Hospital Admissions and Hospital Episodes

For questions please contact: HCQO.Contact@oecd.org
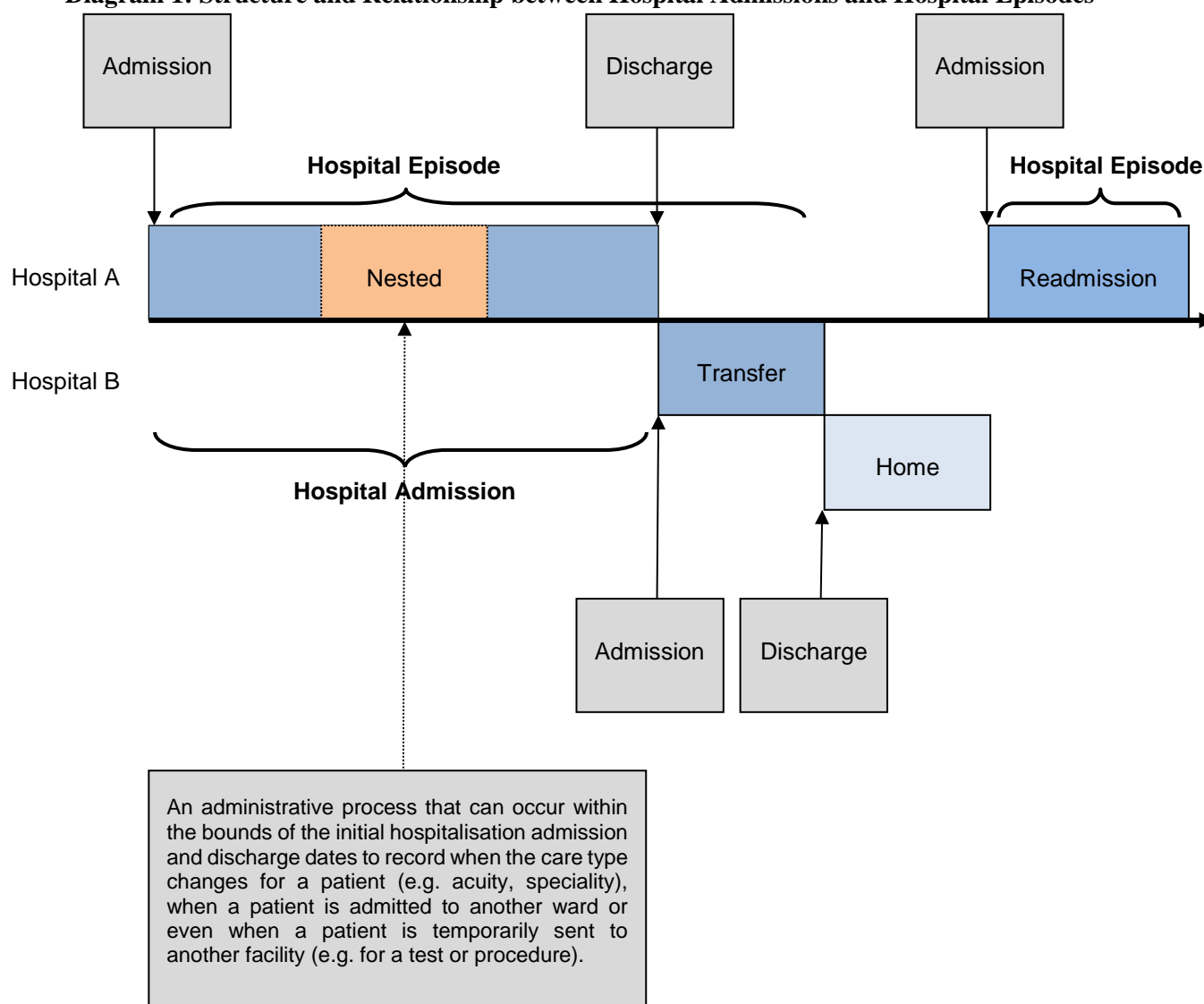
INDICATOR DEFINITONS

PRIMARY CARE - AVOIDABLE HOSPITAL ADMISSION (AA) INDICATORS

Indicators in the Avoidable admission indicator set include:

1. Asthma hospital admission

2. Chronic obstructive pulmonary disease (COPD) hospital admission

3. Congestive heart failure (CHF) hospital admission

4. Hypertension hospital admission

5. Diabetes hospital admission

6. Diabetes lower extremity amputation using unlinked data

7. Diabetes lower extremity amputation using linked data

For questions please contact: HCQO.Contact@oecd.org

AA1) ASTHMA HOSPITAL ADMISSION
(See Glossary for definitions of italicized terminology)

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 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*).

- Cases with *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Annex D (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with *MDC 15* or specified Newborn and other neonates codes in any field – Refer to Annex E (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- 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*

Denominator: Population count.

Asthma diagnosis codes:

ICD-9-CM	ICD-10-WHO
49300 EXTRINSIC ASTHMA NOS 49301 EXT ASTHMA W STATUS ASH 49302 EXT ASTHMA W ACUTE EXAC 49310 INT ASTHMA W/O STAT ASTH 49311 INTRINSIC ASTHMA NOS 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	J450 PREDOMINANTLY ALLERGIC ASTHMA J451 NONALLERGIC ASTHMA J458 MIXED ASTHMA J459 ASTHMA, UNSPECIFIED J46 STATUS ASTHMATICUS

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

ICD-9-CM	ICD-10-WHO
27700 CYSTIC FIBROS W/O ILEUS 27701 CYSTIC FIBROS W ILEUS 27702 CYSTIC FIBROS W PUL MAN 27703 CYSTIC FIBROSIS W GI MAN 27709 CYSTIC FIBROSIS NEC 74721 ANOMALIES OF AORTIC ARCH 7483 LARYNGOTRACH ANOMALY NEC 7484 CONGENITAL CYSTIC LUNG 7485 AGENESIS OF LUNG 74860 LUNG ANOMALY NOS 74861 CONGEN BRONCHIECTASIS 74869 LUNG ANOMALY NEC 7488 RESPIRATORY ANOMALY NEC 7489 RESPIRATORY ANOMALY NOS 7503 CONG ESOPH FISTULA/ATRES 7593 SITUS INVERSUS 7707 PERINATAL CHR RESP DIS	E840 CYSTIC FIBROSIS WITH PULMONARY MANIFESTATIONS E841 CYSTIC FIBROSIS WITH INTESTINAL MANIFESTATIONS E848 CYSTIC FIBROSIS WITH OTHER MANIFESTATIONS E849 CYSTIC FIBROSIS, UNSPECIFIED P27.0 WILSON-MIKITY SYNDROME P27.1 BRONCHOPULMONARY DYSPLASIA ORIGINATING IN THE PERINATAL PERIOD P27.8 OTHER CHRONIC RESPIRATORY DISEASES ORIGINATING IN THE PERINATAL PERIOD P27.9 UNSPECIFIED CHRONIC RESP DISEASE ORIGINATING IN THE PERINATAL PERIOD Q25.4 OTHER CONGENITAL MALFORMATIONS OF AORTA Q31.1 CONGENITAL SUBGLOTTIC STENOSIS Q31.2 LARYNGEAL HYPOPLASIA Q31.3 LARYNGOCELE Q31.5 CONGENITAL LARYNGOMALACIA Q31.8 OTHER CONGENITAL MALFORMATIONS OF LARYNX Q31.9 CONGENITAL MALFORMATION OF LARYNX, UNSPECIFIED Q32.0 CONGENITAL TRACHEOMALACIA 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

AA2) CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) HOSPITAL ADMISSION

(See Glossary for definitions of italicized terminology)

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*).

- Cases with *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Annex D (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with *MDC 15* or specified Newborn and other neonates codes in any field – Refer to Annex E (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases that are *same day/day only admissions*

Denominator: Population count.

COPD diagnosis codes:

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

AA3) CONGESTIVE HEART FAILURE (CHF) HOSPITAL ADMISSION
(See Glossary for definitions of italicized terminology)

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 *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 2018_19 Data Collection_Annex A-I)

- Cases with *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Annex D (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with *MDC 15* or specified Newborn and other neonates codes in any field – Refer to Annex E (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases that are *same day/day only admissions*

Denominator: Population count.

CHF diagnosis codes:

ICD-9-CM	ICD-10-WHO
39891 RHEUMATIC HEART FAILURE 40201 MAL HYPERT HRT DIS W CHF 40211 BENIGN HYP HRT DIS W CHF 40291 HYPERTEN HEART DIS W CHF 40401 MAL HYPER HRT/REN W CHF 40403 MAL HYP HRT/REN W CHF/RF 40411 BEN HYPER HRT/REN W CHF 40413 BEN HYP HRT/REN W CHF/RF 40491 HYPER HRT/REN NOS W CHF 40493 HYP HT/REN NOS W CHF/RF 4280 CONGESTIVE HEART FAILURE 4281 LEFT HEART FAILURE 42820 SYSTOLIC HRT FAILURE NOS 42821 AC SYSTOLIC HRT FAILURE 42822 CHR SYSTOLIC HRT FAILURE 42823 AC ON CHR SYST HRT FAIL 42830 DIASTOLC HRT FAILURE NOS 42831 AC DIASTOLIC HRT FAILURE 42832 CHR DIASTOLIC HRT FAIL	I11.0 HYPERTENSIVE HEART DISEASE WITH (CONGESTIVE) HEART FAILURE I13.0 HYPERTENSIVE HEART AND RENAL DISEASE WITH (CONGESTIVE) HEART FAILURE I13.2 HYPERTENSIVE HEART AND RENAL DISEASE WITH BOTH (CONGESTIVE) HEART FAILURE AND RENAL FAILURE I50.0 CONGESTIVE HEART FAILURE I50.1 LEFT VENTRICULAR FAILURE I50.9 HEART FAILURE, UNSPECIFIED

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42833 AC ON CHR DIAST HRT FAIL 42840 SYST/DIAST HRT FAIL NOS 42841 AC SYST/DIASTOL HRT FAIL 42842 CHR SYST/DIASTL HRT FAIL 42843 AC/CHR SYST/DIA HRT FAIL 4289 HEART FAILURE NOS	

AA4) HYPERTENSION HOSPITAL ADMISSION
(See Glossary for definitions of italicized terminology)

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 *principal diagnosis* code of Hypertension (see Hypertension 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 2018_19 Data Collection_Annex A-I)

- Cases with *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Annex D (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with *MDC 15* or specified Newborn and other neonates codes in any field – Refer to Annex E (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases that are *same day/day only admissions*

Denominator: Population count.

Hypertension diagnosis codes:

ICD-9-CM	ICD-10-WHO
4010 MALIGNANT HYPERTENSION 4019 HYPERTENSION NOS 40200 MAL HYPERTEN HRT DIS NOS 40210 BEN HYPERTEN HRT DIS NOS 40290 HYPERTENSIVE HRT DIS NOS 40300 MAL HYP REN W/O REN FAIL 40310 BEN HYP REN W/O REN FAIL 40390 HYP REN NOS W/O REN FAIL 40400 MAL HY HT/REN W/O CHF/RF 40410 BEN HY HT/REN W/O CHF/RF 40490 HY HT/REN NOS W/O CHF/RF	I10 ESSENTIAL (PRIMARY) HYPERTENSION I119 HYPERTENSIVE HEART DISEASE WITHOUT (CONGESTIVE) HEART FAILURE I129 HYPERTENSIVE RENAL DISEASE WITHOUT RENAL FAILURE I139 HYPERTENSIVE HEART AND RENAL DISEASE, UNSPECIFIED

For questions please contact: HCQO.Contact@oecd.org

AA5) DIABETES HOSPITAL ADMISSION
(See Glossary for definitions of italicized terminology)

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*).

- Cases with *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Annex D (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with *MDC 15* or specified Newborn and other neonates codes in any field – Refer to Annex E (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases that are *same day/day only admissions*

Denominator: Population count.

Diabetes diagnosis codes

ICD-9-CM	ICD-10-WHO
25002 DMII WO CMP UNCNTRLD	E10.0 INSULIN-DEPENDENT DIABETES MELLITUS WITH
25003 DMI WO CMP UNCNTRLD	COMA
25010 DMII KETO NT ST UNCNTRLD	E10.1 INSULIN-DEPENDENT DIABETES MELLITUS WITH
25011 DMI KETO NT ST UNCNTRLD	KETOACIDOSIS
25012 DMII KETOACD UNCONTROLD	E10.2 INSULIN-DEPENDENT DIABETES MELLITUS WITH
25013 DMI KETOACD UNCONTROLD	RENAL COMPLICATIONS
25020 DMII HPRSM NT ST UNCNTRL	E10.3 INSULIN-DEPENDENT DIABETES MELLITUS WITH
25021 DMI HPRSM NT ST UNCNTRLD	OPHTHALMIC COMPLICATIONS
25022 DMII HPROSMLR UNCONTROLD	E10.4 INSULIN-DEPENDENT DIABETES MELLITUS WITH
25023 DMI HPROSMLR UNCONTROLD	NEUROLOGICAL COMPLICATIONS
25030 DMII O CM NT ST UNCNTRLD	E10.5 INSULIN-DEPENDENT DM WITH PERIPHERAL
25031 DMI O CM NT ST UNCNTRL	CIRCULATORY COMPLICATIONS
25032 DMII OTH COMA UNCONTROLD	E10.6 INSULIN-DEPENDENT DM WITH OTHER SPECIFIED
25033 DMI OTH COMA UNCONTROLD	COMPLICATIONS
25040 DMII RENL NT ST UNCNTRLD	E10.7 INSULIN-DEPENDENT DIABETES MELLITUS WITH
25041 DMI RENL NT ST UNCNTRLD	MULTIPLE COMPLICATIONS
25042 DMII RENAL UNCNTRLD	E10.8 INSULIN-DEPENDENT DIABETES MELLITUS WITH
25043 DMI RENAL UNCNTRLD	UNSPECIFIED COMPLICATIONS
25050 DMII OPHTH NT ST UNCNTRL	E10.9 INSULIN-DEPENDENT DIABETES MELLITUS
25051 DMI OPHTH NT ST UNCNTRLD	WITHOUT COMPLICATIONS
25052 DMII OPHTH UNCNTRLD	E11.0 NON-INSULIN-DEPENDENT DIABETES MELLITUS
25053 DMI OPHTH UNCNTRLD	WITH COMA
25060 DMII NEURO NT ST UNCNTRL	E11.1 NON-INSULIN-DEPENDENT DIABETES MELLITUS
25061 DMI NEURO NT ST UNCNTRLD	WITH KETOACIDOSIS

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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	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

For questions please contact: HCQO.Contact@oecd.org

AA6) DIABETES LOWER EXTREMITY AMPUTATION USING UNLINKED DATA
(See Glossary for definitions of italicized terminology)

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 <u>and</u> 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*).

- Cases with *MDC 14* or specified pregnancy, childbirth, and puerperium codes in any field – Refer to Annex D (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with *MDC 15* or specified Newborn and other neonates codes in any field – Refer to Annex E(Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with trauma diagnosis code (see Trauma diagnosis codes below) in any field

- <u>Cases with tumour-related peripheral amputation code</u> (ICD-9-CM 1707 and 1708/ICD-10-WHO C40.2 and C40.3) <u>in any field</u>

- Cases that are *same day/day only admissions*

Denominator 1: Population count.

Denominator 2: Estimated population with diabetes

Countries are requested to provide the diabetes prevalence (%) estimates for each age cohort. It is recognised that countries may not have prevalence estimates for the specified age cohorts, in which case, countries may apply the average or a linear estimate across the cohorts.

The population with diabetes will be calculated by applying the estimated proportion (%) of the general population in each age cohort that has diabetes.

For questions please contact: HCQO.Contact@oecd.org

Diabetes major lower extremity amputation and diabetes diagnosis codes:

ICD-9-CM	ICD-10-WHO
Procedure codes for major lower-extremity amputation	**Procedure codes for major lower-extremity amputation**
8413 DISARTICULATION OF ANKLE 8414 AMPUTAT THROUGH MALLEOLI 8415 BELOW KNEE AMPUTAT NEC 8416 DISARTICULATION OF KNEE 8417 ABOVE KNEE AMPUTATION 8418 DISARTICULATION OF HIP 8419 HINDQUARTER AMPUTATION	NOT SPECIFIED
Diagnosis Codes For Diabetes:	**Diagnosis codes for diabetes:**
25000 DMII WO CMP NT ST UNCNTR 25001 DMI WO CMP NT ST UNCNTRL 25002 DMII WO CMP UNCNTRLD 25003 DMI WO CMP UNCNTRLD 25010 DMII KETO NT ST UNCNTRLD 25011 DMI KETO NT ST UNCNTRLD 25012 DMII KETOACD UNCONTROLD 25013 DMI KETOACD UNCONTROLD 25020 DMII HPRSM NT ST UNCNTRL 25021 DMI HPRSM NT ST UNCNTRLD 25022 DMII HPROSMLR UNCONTROLD 25023 DMI HPROSMLR UNCONTROLD 25030 DMII O CM NT ST UNCNTRLD 25031 DMI O CM NT ST UNCNTRL 25032 DMII OTH COMA UNCONTROLD 25033 DMI OTH COMA UNCONTROLD 25040 DMII RENL NT ST UNCNTRLD 25041 DMI RENL NT ST UNCNTRLD 25042 DMII RENAL UNCNTRLD 25043 DMI RENAL UNCNTRLD 25050 DMII OPHTH NT ST UNCNTRL 25051 DMI OPHTH NT ST UNCNTRLD 25052 DMII OPHTH UNCNTRLD 25053 DMI OPHTH UNCNTRLD 25060 DMII NEURO NT ST UNCNTRL 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	E10.0 INSULIN-DEPENDENT DIABETES MELLITUS WITH COMA E10.1 INSULIN-DEPENDENT DIABETES MELLITUS WITH KETOACIDOSIS E10.2 INSULIN-DEPENDENT DIABETES MELLITUS WITH RENAL COMPLICATIONS E10.3 INSULIN-DEPENDENT DIABETES MELLITUS WITH OPHTHALMIC COMPLICATIONS E10.4 INSULIN-DEPENDENT DIABETES MELLITUS WITH NEUROLOGICAL COMPLICATIONS E10.5 INSULIN-DEPENDENT DM WITH PERIPHERAL CIRCULATORY COMPLICATIONS E10.6 INSULIN-DEPENDENT DM WITH OTHER SPECIFIED COMPLICATIONS E10.7 INSULIN-DEPENDENT DIABETES MELLITUS WITH MULTIPLE COMPLICATIONS E10.8 INSULIN-DEPENDENT DIABETES MELLITUS WITH UNSPECIFIED COMPLICATIONS E10.9 INSULIN-DEPENDENT DIABETES MELLITUS WITHOUT COMPLICATIONS E11.0 NON-INSULIN-DEPENDENT DIABETES MELLITUS WITH COMA E11.1 NON-INSULIN-DEPENDENT DIABETES MELLITUS 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

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	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

Exclude trauma diagnosis codes:

ICD-9-CM	ICD-10-WHO
8950 AMPUTATION TOE 8951 AMPUTATION TOE-COMPLICAT 8960 AMPUTATION FOOT, UNILAT 8961 AMPUT FOOT, UNILAT-COMPL 8962 AMPUTATION FOOT, BILAT 8963 AMPUTAT FOOT, BILAT-COMP 8970 AMPUT BELOW KNEE, UNILAT 8971 AMPUTAT BK, UNILAT-COMPL 8972 AMPUT ABOVE KNEE, UNILAT 8973 AMPUT ABV KN, UNIL-COMPL 8974 AMPUTAT LEG, UNILAT NOS 8975 AMPUT LEG, UNIL NOS-COMP 8976 AMPUTATION LEG, BILAT 8977 AMPUTAT LEG, BILAT-COMPL	S78.0 TRAUMATIC AMPUTATION AT HIP JOINT S78.1 TRAUMATIC AMPUTATION AT LEVEL BETWEEN HIP AND KNEE S78.9 TRAUMATIC AMPUTATION OF HIP AND THIGH, LEVEL UNSPECIFIED S88.0 TRAUMATIC AMPUTATION AT KNEE LEVEL S88.1 TRAUMATIC AMPUTATION AT LEVEL BETWEEN KNEE AND ANKLE S88.9 TRAUMATIC AMPUTATION OF LOWER LEG, LEVEL UNSPECIFIED S98.0 TRAUMATIC AMPUTATION OF FOOT AT ANKLE LEVEL S98.1 TRAUMATIC AMPUTATION OF ONE TOE S98.2 TRAUMATIC AMPUTATION OF TWO OR MORE TOES

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	S98.3 TRAUMATIC AMPUTATION OF OTHER PARTS OF FOOT
	S98.4 TRAUMATIC AMPUTATION OF FOOT, LEVEL UNSPECIFIED
	T05.3 TRAUMATIC AMPUTATION OF BOTH FEET
	T05.4 TRAUMATIC AMPUTATION OF 1 FOOT AND OTHER LEG [ANY LEVEL, EXCEPT FOOT]
	T05.5 TRAUMATIC AMPUTATION OF BOTH LEGS [ANY LEVEL]
	T13.6 TRAUMATIC AMPUTATION OF LOWER LIMB, LEVEL UNSPECIFIED

AA7) DIABETES LOWER EXTREMITY AMPUTATION USING LINKED DATA
(*See Glossary for definitions of italicized terminology*)

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

Numerator: All diabetic patients admitted for a major lower extremity amputation (see Diabetes major lower extremity amputation codes below) in the specified year.

Counting Rules

Only one major lower extremity amputation *admission* is to be counted for each diabetic patient in the specified year. The admission with the <u>most severe amputation</u> is to be selected if more than one admission is identified for a diabetic patient in the specified year.

Diabetic patients are to be identified by using a *unique person identifier (UPI)*. For all patients with an amputation in the specified year, the aim is to search for:

- First, diabetes codes in any field in the hospital administrative dataset (see diabetes diagnosis codes below) **for up to 5 years**, including the specified year and prior years where the *UPI* can be reliably and consistently used, and then

- Second, records indicating diabetes status in any other relevant database (e.g. pharmaceutical, specialist, laboratory data) where the *UPI* can be reliably and consistently used to identify additional patients.

Exclude:
- Cases with Pregnancy, childbirth, and puerperium codes in any field – Refer to Annex D (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with Newborn and other neonates codes in any field – Refer to Annex E (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- Cases with trauma diagnosis code (see Trauma diagnosis codes below) in any field

- <u>Cases with tumour-related peripheral amputation code</u> (ICD-9-CM 1707 and 1708/ICD-10-WHO C40.2 and C40.3) <u>in any field</u>

Denominator 1: Population count.

Denominator 2: Estimated population with diabetes

Countries are requested to provide the diabetes prevalence (%) estimates for each age cohort. It is recognised that countries may not have prevalence estimates for the specified age cohorts, in which case, countries may apply the average or a linear estimate across the cohorts.

The population with diabetes will be calculated by applying the estimated proportion (%) of the general population in each age cohort that has diabetes.

For questions please contact: HCQO.Contact@oecd.org

Diabetes major lower extremity amputation and diabetes diagnosis codes:

ICD-9-CM	ICD-10-WHO
Procedure codes for major lower-extremity amputation	**Procedure codes for major lower-extremity amputation**
8413 DISARTICULATION OF ANKLE 8414 AMPUTAT THROUGH MALLEOLI 8415 BELOW KNEE AMPUTAT NEC 8416 DISARTICULATION OF KNEE 8417 ABOVE KNEE AMPUTATION 8418 DISARTICULATION OF HIP 8419 HINDQUARTER AMPUTATION	NOT SPECIFIED
Diagnosis Codes For Diabetes:	**Diagnosis codes for diabetes:**
25000 DMII WO CMP NT ST UNCNTR 25001 DMI WO CMP NT ST UNCNTRL 25002 DMII WO CMP UNCNTRLD 25003 DMI WO CMP UNCNTRLD 25010 DMII KETO NT ST UNCNTRLD 25011 DMI KETO NT ST UNCNTRLD 25012 DMII KETOACD UNCONTROLD 25013 DMI KETOACD UNCONTROLD 25020 DMII HPRSM NT ST UNCNTRL 25021 DMI HPRSM NT ST UNCNTRLD 25022 DMII HPROSMLR UNCONTROLD 25023 DMI HPROSMLR UNCONTROLD 25030 DMII O CM NT ST UNCNTRLD 25031 DMI O CM NT ST UNCNTRL 25032 DMII OTH COMA UNCONTROLD 25033 DMI OTH COMA UNCONTROLD 25040 DMII RENL NT ST UNCNTRLD 25041 DMI RENL NT ST UNCNTRLD 25042 DMII RENAL UNCNTRLD 25043 DMI RENAL UNCNTRLD 25050 DMII OPHTH NT ST UNCNTRL 25051 DMI OPHTH NT ST UNCNTRLD 25052 DMII OPHTH UNCNTRLD 25053 DMI OPHTH UNCNTRLD 25060 DMII NEURO NT ST UNCNTRL 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	E10.0 INSULIN-DEPENDENT DIABETES MELLITUS WITH COMA E10.1 INSULIN-DEPENDENT DIABETES MELLITUS WITH KETOACIDOSIS E10.2 INSULIN-DEPENDENT DIABETES MELLITUS WITH RENAL COMPLICATIONS E10.3 INSULIN-DEPENDENT DIABETES MELLITUS WITH OPHTHALMIC COMPLICATIONS E10.4 INSULIN-DEPENDENT DIABETES MELLITUS WITH NEUROLOGICAL COMPLICATIONS E10.5 INSULIN-DEPENDENT DM WITH PERIPHERAL CIRCULATORY COMPLICATIONS E10.6 INSULIN-DEPENDENT DM WITH OTHER SPECIFIED COMPLICATIONS E10.7 INSULIN-DEPENDENT DIABETES MELLITUS WITH MULTIPLE COMPLICATIONS E10.8 INSULIN-DEPENDENT DIABETES MELLITUS WITH UNSPECIFIED COMPLICATIONS E10.9 INSULIN-DEPENDENT DIABETES MELLITUS WITHOUT COMPLICATIONS E11.0 NON-INSULIN-DEPENDENT DIABETES MELLITUS WITH COMA E11.1 NON-INSULIN-DEPENDENT DIABETES MELLITUS 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

Exclude trauma diagnosis codes:

ICD-9-CM	ICD-10-WHO
8950 AMPUTATION TOE 8951 AMPUTATION TOE-COMPLICAT 8960 AMPUTATION FOOT, UNILAT 8961 AMPUT FOOT, UNILAT-COMPL 8962 AMPUTATION FOOT, BILAT 8963 AMPUTAT FOOT, BILAT-COMP 8970 AMPUT BELOW KNEE, UNILAT 8971 AMPUTAT BK, UNILAT-COMPL 8972 AMPUT ABOVE KNEE, UNILAT 8973 AMPUT ABV KN, UNIL-COMPL 8974 AMPUTAT LEG, UNILAT NOS 8975 AMPUT LEG, UNIL NOS-COMP 8976 AMPUTATION LEG, BILAT 8977 AMPUTAT LEG, BILAT-COMPL	S78.0 TRAUMATIC AMPUTATION AT HIP JOINT S78.1 TRAUMATIC AMPUTATION AT LEVEL BETWEEN HIP AND KNEE S78.9 TRAUMATIC AMPUTATION OF HIP AND THIGH, LEVEL UNSPECIFIED S88.0 TRAUMATIC AMPUTATION AT KNEE LEVEL S88.1 TRAUMATIC AMPUTATION AT LEVEL BETWEEN KNEE AND ANKLE S88.9 TRAUMATIC AMPUTATION OF LOWER LEG, LEVEL UNSPECIFIED S98.0 TRAUMATIC AMPUTATION OF FOOT AT ANKLE LEVEL S98.1 TRAUMATIC AMPUTATION OF ONE TOE S98.2 TRAUMATIC AMPUTATION OF TWO OR MORE TOES

	S98.3 TRAUMATIC AMPUTATION OF OTHER PARTS OF FOOT S98.4 TRAUMATIC AMPUTATION OF FOOT, LEVEL UNSPECIFIED T05.3 TRAUMATIC AMPUTATION OF BOTH FEET T05.4 TRAUMATIC AMPUTATION OF 1 FOOT AND OTHER LEG [ANY LEVEL, EXCEPT FOOT] T05.5 TRAUMATIC AMPUTATION OF BOTH LEGS [ANY LEVEL] T13.6 TRAUMATIC AMPUTATION OF LOWER LIMB, LEVEL UNSPECIFIED

PRIMARY CARE - PRESCRIBING (PR) INDICATORS

Indicators in the Prescribing indicator set include:

1. Adequate use of cholesterol lowering treatment in people with diabetes

2. First choice antihypertensives for people with diabetes

3. Long-term use of benzodiazepines and benzodiazepine related drugs in 65 years and over

4. Use of long-acting benzodiazepines in older people in 65 years and over

5. Volume of cephalosporines and quinolones as a proportion of all systemic antibiotics prescribed

6. Overall volume of antibiotics for systemic use prescribed

7. Any anticoagulating drug in combination with an oral NSAID

8. Proportion of 75 years and over who are taking more than 5 medications concurrently

9. Overall volume of opioids prescribed

10. Proportion of the population who are chronic opioid users

11. Proportion of 65 years and over prescribed antipsychotics

NOTES

Data are requested for prescribing undertaken in **PRIMARY CARE ONLY.** Please exclude, as far as possible, prescribing undertaken in specialist secondary care. Please specify on the Sources and Methods survey the health care sectors to which the data pertain.

Countries are requested to provide data only for the latest year available, preferably 2017 or nearest year. The preferred data are those based on DDDs but if not please provide data based on days.

Skip the worksheets for which you are not able to provide data for the numerator and / or denominator of the indicator.

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 2018. Oslo, Norway, 2017. https://www.whocc.no/filearchive/publications/guidelines.pdf

For questions please contact: HCQO.Contact@oecd.org

PR1) ADEQUATE USE OF CHOLESTEROL LOWERING TREATMENT IN PEOPLE WITH DIABETES
(See Glossary for definitions of italicized terminology)

Coverage: Population in the *prescribing database*

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 database
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 .

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For questions please contact: HCQO.Contact@oecd.org
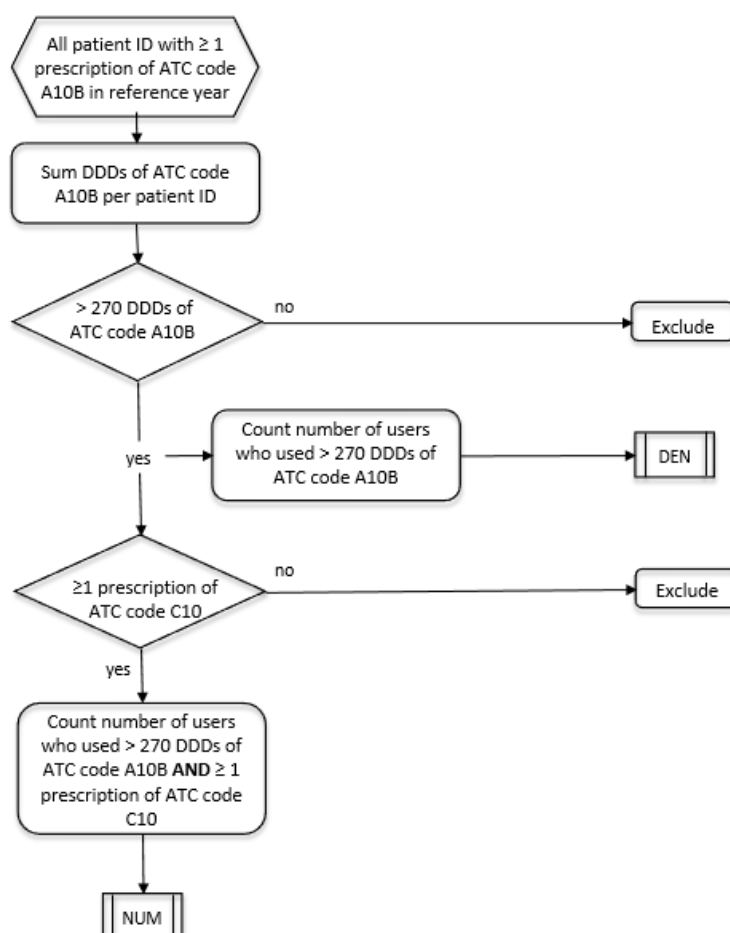
PR2) FIRST CHOICE ANTIHYPERTENSIVES FOR PEOPLE WITH DIABETES
(See Glossary for definitions of italicized terminology)

Coverage: Population in *prescribing database*

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

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.

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For questions please contact: HCQO.Contact@oecd.org
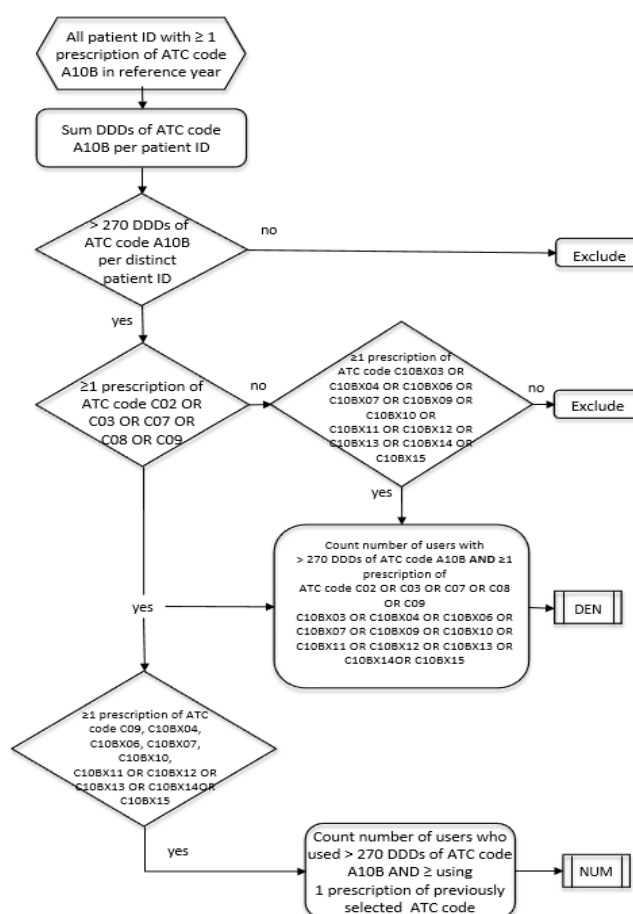
PR3) LONG-TERM USE OF BENZODIAZEPINES AND BENZODIAZEPINE RELATED DRUGS IN ≥ 65 YEARS OF AGE (> 365 DDD IN ONE YEAR)
(See Glossary for definitions of italicized terminology)

Coverage: Population aged 65 years and over in *prescribing database*

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

Denominator: Number of individuals ≥ 65 years of age at 1 January in database

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

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For questions please contact: HCQO.Contact@oecd.org

PR4) USE OF LONG-ACTING BENZODIAZEPINES IN ≥ 65 YEARS OF AGE
(See Glossary for definitions of italicized terminology)

Coverage: Population aged 65 years and over in *prescribing database*

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

Denominator: Number of individuals ≥ 65 years of age at 1 January in database

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For questions please contact: HCQO.Contact@oecd.org
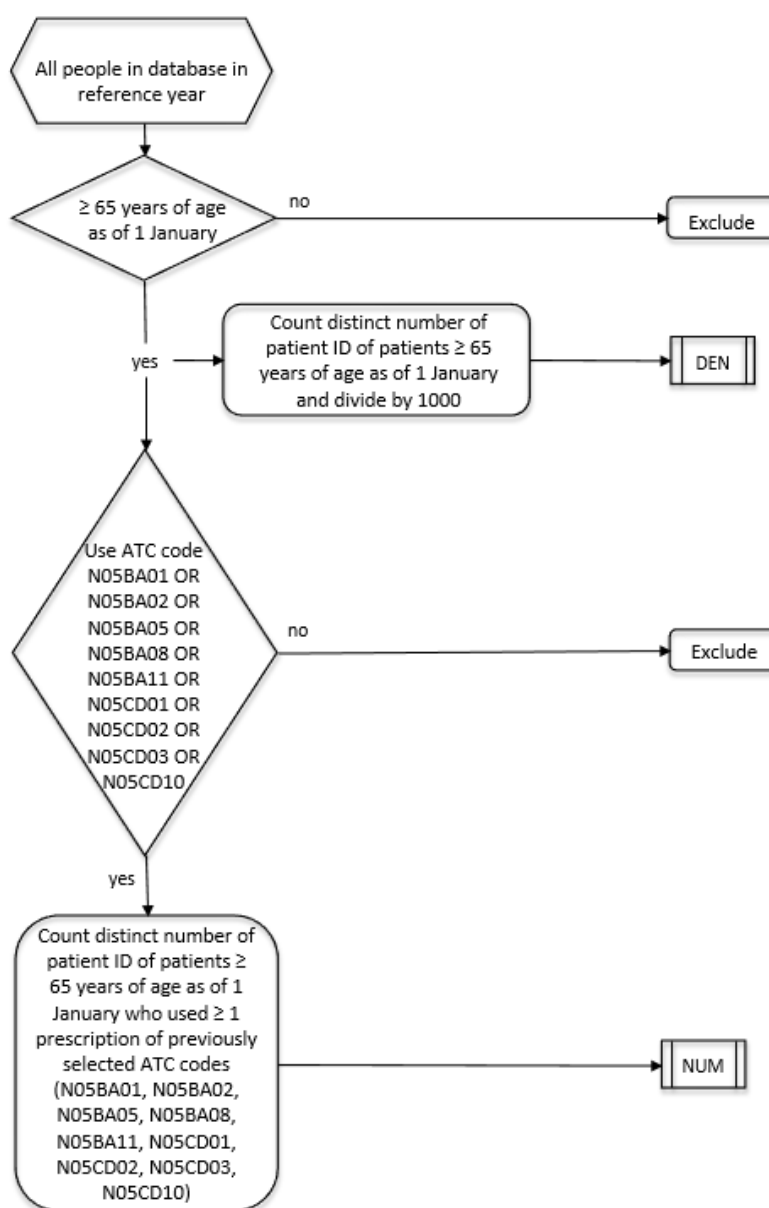
PR5) VOLUME OF CEPHALOSPORINES AND QUINOLONES AS A PROPORTION OF ALL SYSTEMIC ANTIBIOTICS PRESCRIBED (DDD)
(See Glossary for definitions of italicized terminology)

Coverage: Population in *prescribing database*

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

Denominator: Sum *DDD*s of all ATC J01 prescriptions in database

For questions please contact: HCQO.Contact@oecd.org
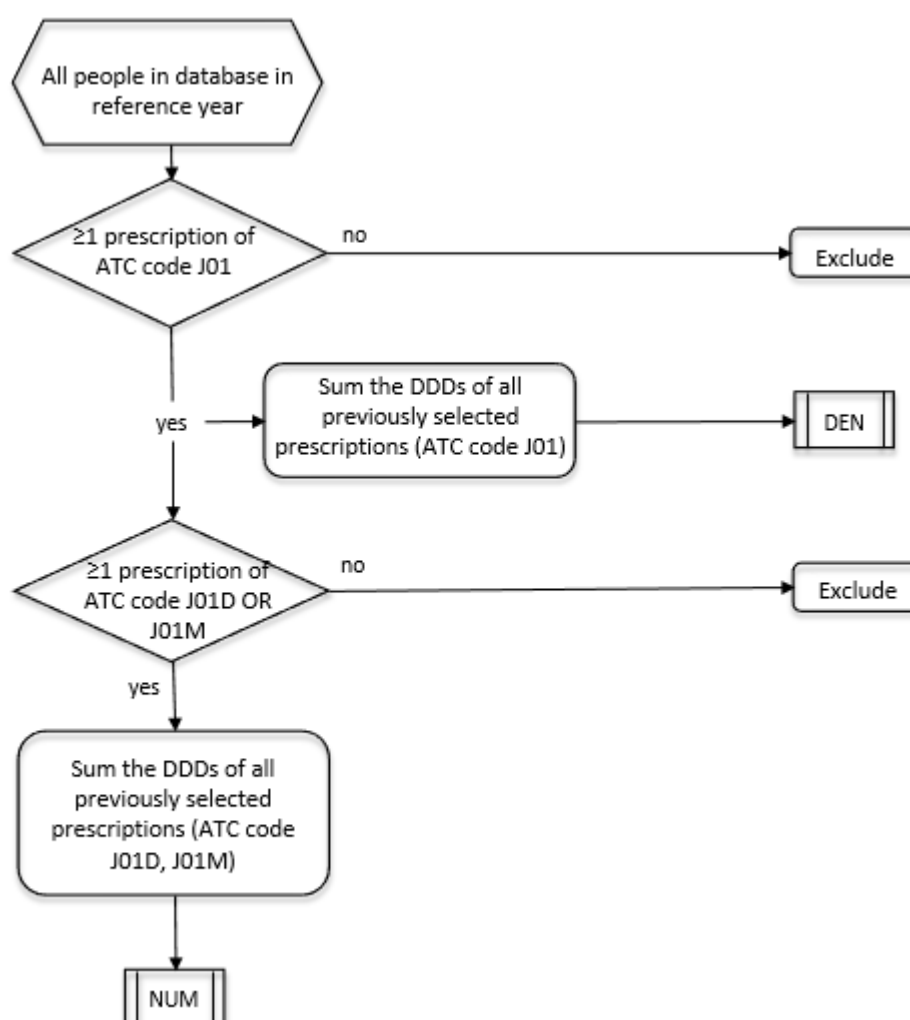
PR6) OVERALL VOLUME OF ANTIBIOTICS FOR SYSTEMIC USE PRESCRIBED (DDD)
(See Glossary for definitions of italicized terminology)

Numerator: Sum *DDD* of all ATC J01 prescriptions

Coverage: Population in *prescribing database*

Denominator: Population covered by database at 1 January.

For questions please contact: HCQO.Contact@oecd.org
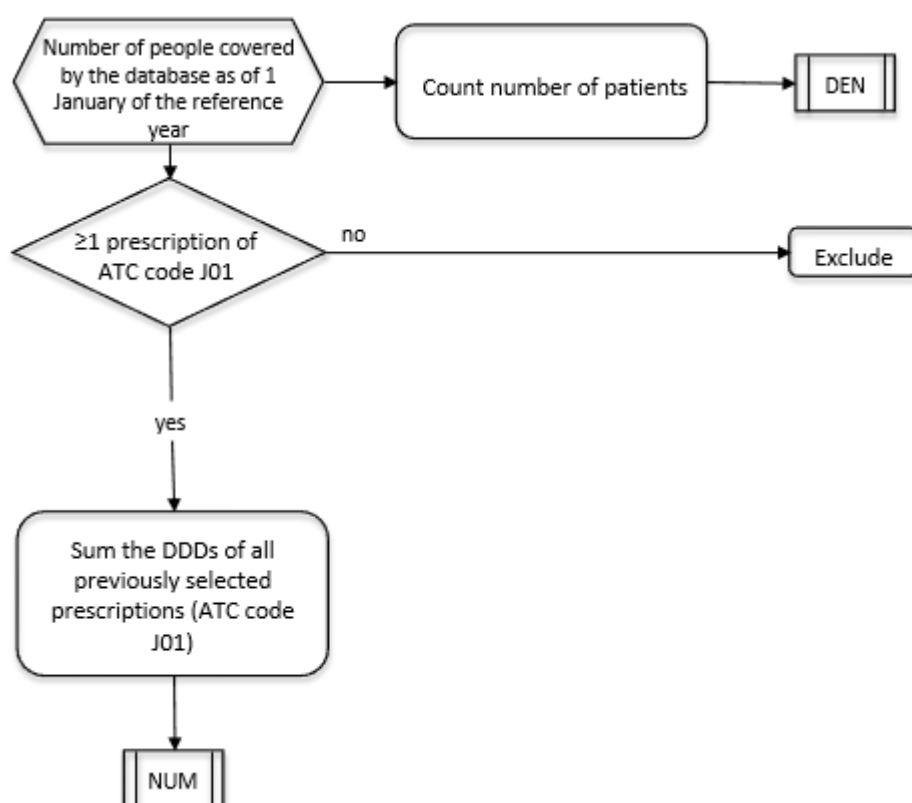
PR7) ANY ANTICOAGULATING DRUG (ACENOCOUMAROL, WARFARIN, PHRENPROCOUMON, DABIGATRAN, RIVAROXABAN OR APIXABAN) IN COMBINATION WITH AN ORAL NSAID
(See Glossary for definitions of italicized terminology)

Coverage: Population in *prescribing database*

Numerator: Number of individuals who are long-term users of anticoagulating drugs acenocoumarol (B01AA07) *or* warfarin (B01AA03) *or* phenprocoumon (B01AA04) *or* dabigatran (B01AE07) *or* rivaroxaban (B01AF01) *or* apixaban (B01AF02) with concomitant use of ≥ 1 prescription of NSAID (M01A *or* M01B)

Denominator: Number of individuals who long-term users of ATC-codes acenocoumarol (B01AA07) *or* warfarin (B01AA03) *or* phenprocoumon (B01AA04) *or* dabigatran (B01AE07) *or* rivaroxaban (B01AF01) *or* apixaban (B01AF02)
Note: individuals who are *l*ong-term users of anticoagulating drugs are defined as individuals who use >270 *Defined Daily Doses (DDD)* of the B01A codes listed above. If your database does not report *DDD*, please derive indicator using >270 *days* of the B01A codes listed above.

For questions please contact: HCQO.Contact@oecd.org
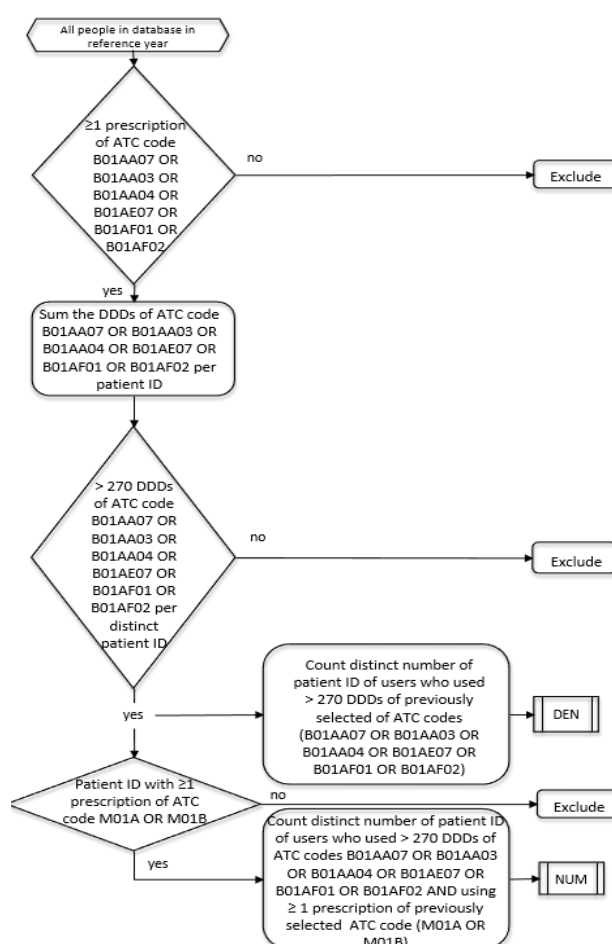
PR8) PROPORTION OF 75 YEARS AND OVER WHO ARE TAKING MORE THAN 5 MEDICATIONS CONCURRENTLY (>90 DAYS EXCLUDING DERMATOLOGICAL AND ANTIBIOTICS)
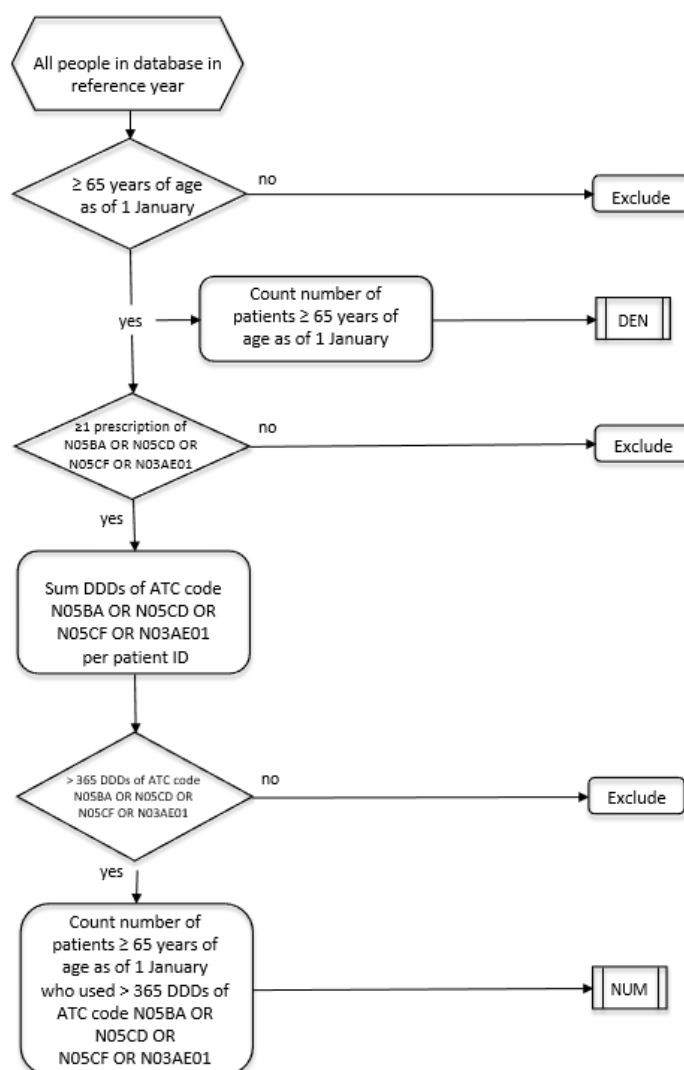*(See Glossary for definitions of italicized terminology)*

Coverage: Population aged 75 years and over in *prescribing database*

Numerator: Number of individuals ≥ 75 years of age as at 1 January in database with ≥ 5 chronically used medications with different ATC codes at the fourth level (e.g., A10BA) during the year.
Chronic usage is defined as medication prescribed for more than 90 days or four or more prescriptions of a medication in the year. A medication can be within a similar ATC codes at the fourth level.

Denominator: Number of individuals ≥ 75 years of age at 1 January in database

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.
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 questions please contact: HCQO.Contact@oecd.org
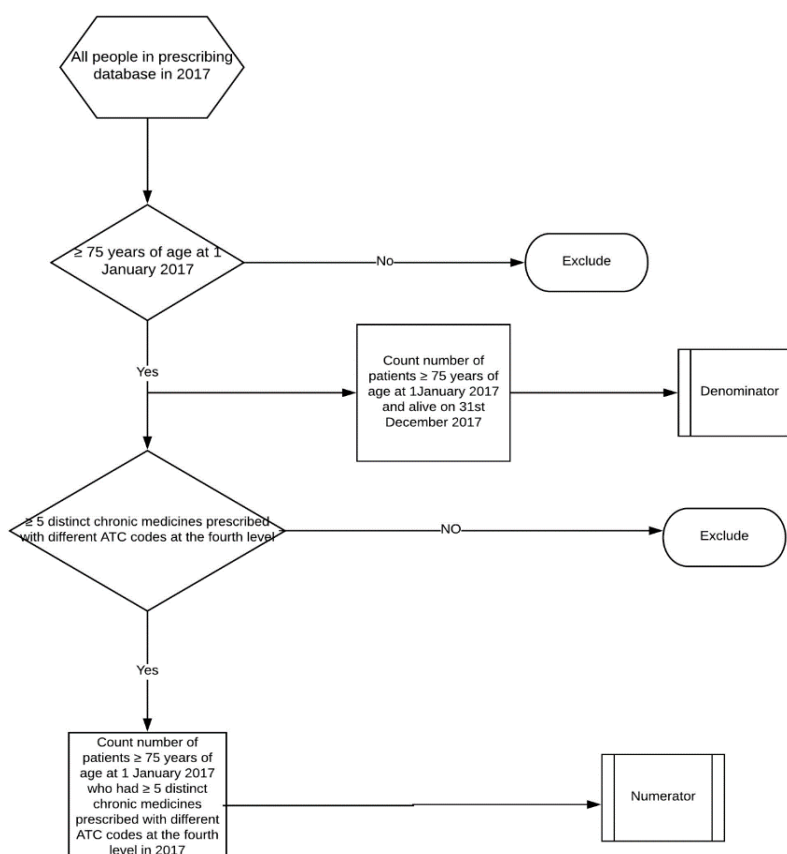
PR9) OVERALL VOLUME OF OPIOIDS PRESCRIBED (DDDs PER 1000 POPULATION PER DAY)

(See Glossary for definitions of italicized terminology)

Coverage: Population aged 18 years and over in *prescribing database*

Numerator: Sum *DDD* of all ATC N02A prescriptions

Denominator: Number of individuals ≥ 18 years of age at 1 January 2017 in database

NOTE:
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.

For questions please contact: HCQO.Contact@oecd.org
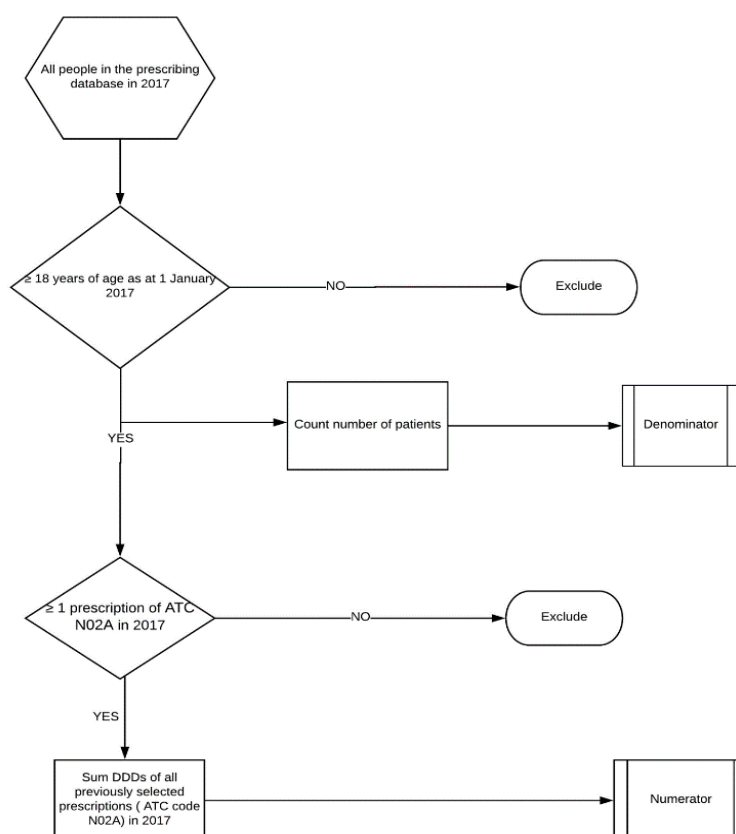
PR10) PROPORTION OF THE POPULATION WHO ARE CHRONIC OPIOID USERS (≥ 90 DAY'S SUPPLY IN A YEAR)

(See Glossary for definitions of italicized terminology)

Coverage: Population aged 18 years and over in *prescribing database*

Numerator: Number of individuals ≥ 18 years of age at 1 January in database with 2 or more prescriptions of opioids (N02A) prescribed for ≥ 90 days in the year.

Denominator: Number of individuals ≥ 18 years of age at 1 January 2017 in database

NOTE:
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.

For questions please contact: HCQO.Contact@oecd.org
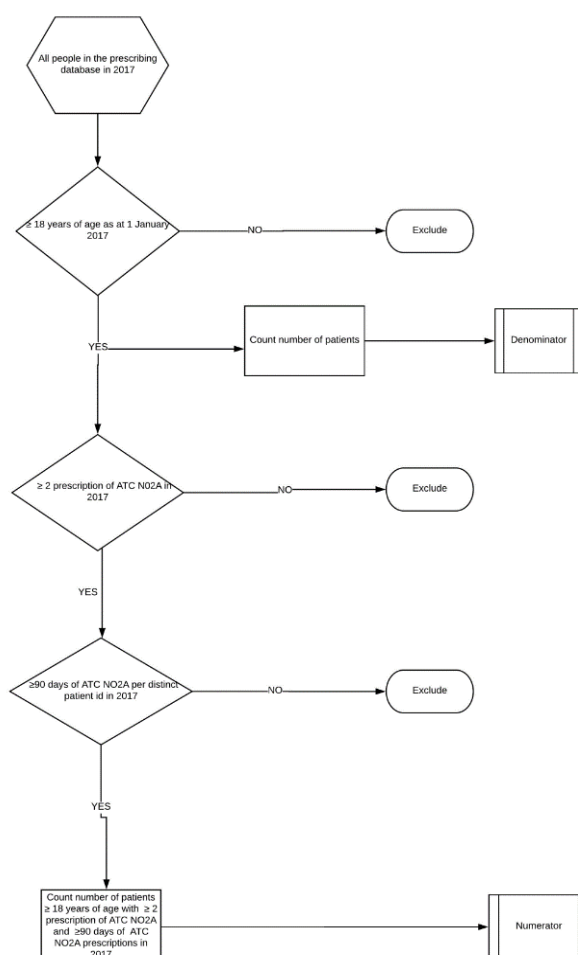
PR11) PROPORTION OF PEOPLE 65 YEARS AND OVER PRESCRIBED ANTIPSYCHOTICS
(See Glossary for definitions of italicized terminology)

Coverage: All persons 65 years and over (on the first day of the reference year) in the *prescribing database* (5 year age groups)

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.

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

For questions please contact: HCQO.Contact@oecd.org
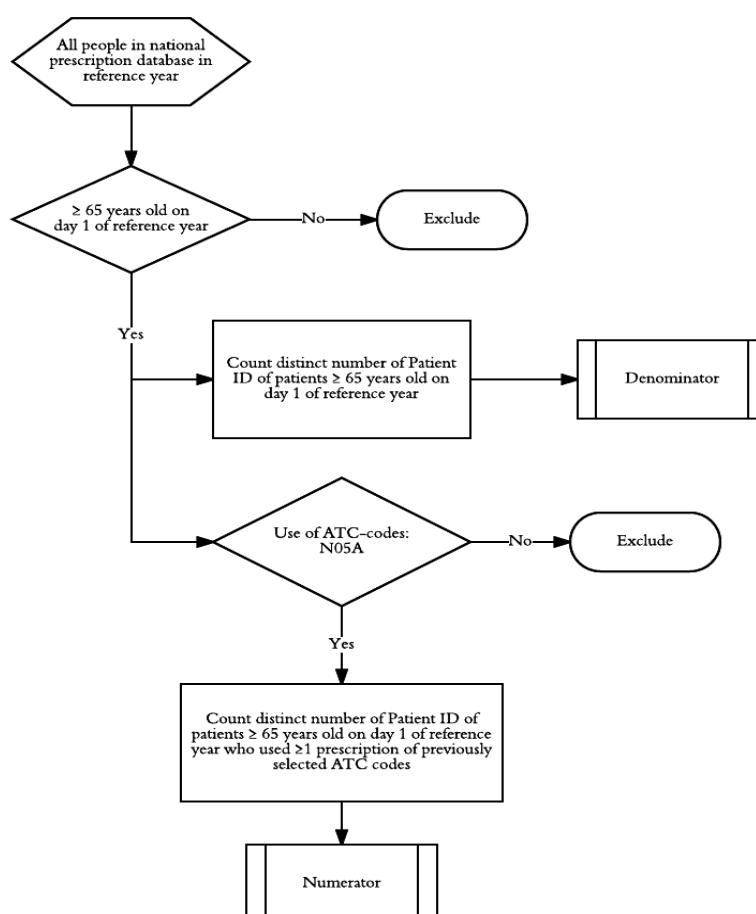
ACUTE CARE (AC) INDICATORS

Indicators in the acute care indicator set include:

1. AMI 30 day mortality - National level using linked data
2. AMI 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data
3. AMI 30 day mortality - Hospital level using linked data
4. AMI 30 day mortality - National level using unlinked data
5. AMI 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data
6. AMI 30 day mortality - Hospital level using unlinked data
7. AMI 30 day mortality after PCI - Hospital level using unlinked data
8. Hemorrhagic stroke 30 day mortality - National level using linked data
9. Hemorrhagic stroke 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data
10. Hemorrhagic stroke 30-day mortality - Hospital level using linked data
11. Hemorrhagic stroke 30 day mortality - National level using unlinked data
12. Hemorrhagic stroke 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data
13. Hemorrhagic stroke 30 day mortality - Hospital level using unlinked data
14. Ischemic stroke 30 day mortality - National level using linked data
15. Ischemic stroke 30 day mortality - National level - Age, sex, co-morbidity, previous AMI adjusted using linked data
16. Ischemic stroke 30-day mortality - Hospital level using linked data
17. Ischemic stroke 30 day mortality - National level using unlinked data
18. Ischemic stroke 30 day mortality - National level - Age sex, co-morbidity adjusted using unlinked data
19. Ischemic stroke 30 day mortality - Hospital level using unlinked data
20. Hip fracture surgery initiated within 2 calendar days after admission to the hospital
21. Prolonged length of stay in hospital in older patients (delayed discharge)

AC1) AMI 30 DAY MORTALITY - NATIONAL LEVEL USING LINKED DATA
(See Glossary for definitions of italicized terminology)

Coverage: Patients aged 15 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 acute non-elective (urgent) 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 <u>one</u> 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, which will require access to data in the calendar year following the specified year.

AC2) AMI 30 DAY MORTALITY - NATIONAL LEVEL - AGE, SEX, CO-MORBIDITY, PREVIOUS AMI ADJUSTED USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC3) AMI 30-DAY MORTALITY - HOSPITAL LEVEL USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC4) AMI 30 DAY MORTALITY - NATIONAL LEVEL USING UNLINKED DATA
(*See Glossary for definitions of italicized terminology*)

Coverage: Patients aged 15 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 acute non-elective (urgent) care with a *primary 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*).

- The numerator is calculated by following up all denominator cases for up to 30 days, which will require access to data in the calendar year following the specified year.

AC5) AMI 30 DAY MORTALITY - NATIONAL LEVEL - AGE SEX, CO-MORBIDITY ADJUSTED USING UNLINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC6) AMI 30 DAY MORTALITY - HOSPITAL LEVEL USING UNLINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC7) AMI 30 DAY MORTALITY AFTER PCI - HOSPITAL LEVEL USING UNLINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC8) HEMORRHAGIC STROKE 30 DAY MORTALITY - NATIONAL LEVEL USING LINKED DATA

(See Glossary for definitions of italicized terminology)

Coverage: Patients aged 15 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 acute non-elective (urgent) care with a *principal diagnosis* (PDx) of hemorrhagic stroke from 1 January to 31 December in the specified year. [Hemorrhagic stroke diagnostic codes upon separation: ICD-9 430-432 or ICD-10 I60-I62.]

Please note only <u>one</u> 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, which will require access to data in the calendar year following the specified year.

For questions please contact: HCQO.Contact@oecd.org

AC9) HEMORRHAGIC STROKE 30 DAY MORTALITY - NATIONAL LEVEL - AGE, SEX, CO-MORBIDITY, PREVIOUS AMI ADJUSTED USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC10) HEMORRHAGIC STROKE 30-DAY MORTALITY - HOSPITAL LEVEL USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC11) HEMORRHAGIC STROKE 30 DAY MORTALITY - NATIONAL LEVEL USING UNLINKED DATA

(See Glossary for definitions of italicized terminology)

Coverage: Patients aged 15 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 acute non-elective (urgent) care with a *primary diagnosis* of hemorrhagic stroke from 1 January to 31 December in the specified year. [Hemorrhagic 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*).

- The numerator is calculated by following up all denominator cases for up to 30 days, which will require access to data in the calendar year following the specified year.

AC12) HEMORRHAGIC STROKE 30 DAY MORTALITY - NATIONAL LEVEL - AGE SEX, CO-MORBIDITY ADJUSTED USING UNLINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC13) HEMORRHAGIC STROKE 30 DAY MORTALITY - HOSPITAL LEVEL USING UNLINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC14)   ISCHEMIC STROKE 30 DAY MORTALITY USING LINKED DATA
(*See Glossary for definitions of italicized terminology*)

Coverage: Patients aged 15 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 acute non-elective (urgent) 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 <u>one</u> 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, which will require access to data in the calendar year following the specified year.

For questions please contact: HCQO.Contact@oecd.org

AC15) ISCHEMIC STROKE 30 DAY MORTALITY - NATIONAL LEVEL - AGE, SEX, CO-MORBIDITY, PREVIOUS AMI ADJUSTED USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC16) ISCHEMIC STROKE 30-DAY MORTALITY - HOSPITAL LEVEL USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC17) ISCHEMIC STROKE 30 DAY MORTALITY - NATIONAL LEVEL USING UNLINKED DATA

(*See Glossary for definitions of italicized terminology*)

Coverage: Patients aged 15 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 acute non-elective (urgent) care with a *primary 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*).

- The numerator is calculated by following up all denominator cases for up to 30 days, which will require access to data in the calendar year following the specified year.

AC18) ISCHEMIC STROKE 30 DAY MORTALITY - NATIONAL LEVEL - AGE SEX, CO-MORBIDITY ADJUSTED USING UNLINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

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AC19)   ISCHEMIC STROKE 30 DAY MORTALITY - HOSPITAL LEVEL USING UNLINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

AC20) HIP FRACTURE SURGERY INITIATED WITHIN 2 CALENDAR DAYS AFTER ADMISSION TO THE HOSPITAL

(See Glossary for definitions of italicized terminology)

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.

Denominator: Number of people aged 65 years or older admitted to hospital for acute non-elective (urgent) 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 admission (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

Since procedure classifications vary between countries the procedures listed here are not coded. Countries are requested to map their procedure classification codes to these procedure descriptions and report any related issues in the comments box in the Sources and Methods section of the questionnaire.

For questions please contact: HCQO.Contact@oecd.org

AC21) PROLONGED LENGTH OF STAY IN HOSPITAL IN OLDER PATIENTS (DELAYED DISCHARGE)

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

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MENTAL HEALTH CARE (MH) QUESTIONNAIRE

Indicators in the mental care indicator set include:

1. In-patient death from suicide among patients at the hospital with a mental disorder

2. Death from suicide within 1 year after discharge among patients discharged with a mental disorder

3. Death from suicide within 30 days after discharge among patients discharged with a mental disorder

4. Excess mortality from schizophrenia

5. Excess mortality from bipolar disorder

6. Excess mortality from severe mental illnesses

NOTES

Excess mortality indicators include;
- Excess mortality from schizophrenia
- Excess mortality from bipolar disorder
- Excess mortality from severe mental illnesses

These 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, severe mental illness. **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 primary 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

MH1) IN-PATIENT DEATH FROM SUICIDE AMONG PATIENTS AT THE HOSPITAL WITH A MENTAL DISORDER

(See Glossary for definitions of italicized terminology)

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

Numerator: Number of patient discharges among denominator cases coded as suicide (ICD-10 codes: X60-X84) in the year. 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 with a *principal diagnosis* or first two listed *secondary diagnosis* code of mental health and behavioural disorders (ICD-10 codes F10-F69 and F90-99) in the year.

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MH2) DEATH FROM SUICIDE WITHIN 1 YEAR AFTER DISCHARGE AMONG PATIENTS DISCHARGED WITH A MENTAL DISORDER

(See Glossary for definitions of italicized terminology)

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 diagnosis* or first two listed *secondary diagnosis* code of mental health and behavioural disorders (ICD-10 codes F10-F69 and F90-99) in the year. 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).
NB: This indicator requires data that links hospital records with deaths after discharge.

For questions please contact: HCQO.Contact@oecd.org

MH3) <u>DEATH FROM SUICIDE WTIHIN 30 DAYS AFTER DISCHARGE AMONG PATIENTS DISCHARGED WITH A MENTAL DISORDER</u>
(See Glossary for definitions of italicized terminology)

Coverage: Patients aged 15 years and older (5 years 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 diagnosis* or first two listed *secondary diagnosis* code of mental health and behavioural disorders (ICD-10 codes F10-F69 and F90-99) in the year. 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).

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

For questions please contact: HCQO.Contact@oecd.org

MH4) EXCESS MORTALITY FROM SCHIZOPHRENIA
(See Glossary for definitions of italicized terminology)

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.

> **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.

> **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	F23.2 Acute schizophrenia-like psychotic disorder
295.4 Acute schizophrenic episode	F25.0 Schizoaffective disorders
295.5 Latent schizophrenia	F25.1 Schizoaffective disorder, depressive type
295.6 Residual schizophrenia	F25.2 Schizoaffective disorder, mixed type
295.7 Schizoaffective type of schizophrenia	F25.8 Other schizoaffective disorders
295.8 Other specified types of schizophrenia	F25.9 Schizoaffective disorder, unspecified
295.9 Unspecified schizophrenia	

For questions please contact: HCQO.Contact@oecd.org

MH5) EXCESS MORTALITY FROM BIPOLAR DISORDER

(See Glossary for definitions of italicized terminology)

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.

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.

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	

For questions please contact: HCQO.Contact@oecd.org

MH6) EXCESS MORTALITYI FROM SEVERE ILLNESSES
(See Glossary for definitions of italicized terminology)

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 prevalent population with Severe Mental Illness.

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 SMI 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.

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.

For questions please contact: HCQO.Contact@oecd.org

PATIENT EXPERIENCES (PE) QUESTIONNAIRE

Indicators in the patient experience indicator set include:

1. Consultation skipped due to costs

2. Medical tests, treatment or follow-up skipped due to costs

3. Prescribed medicine skipped due to costs

4. Waiting time of more than 4 weeks for getting an appointment with a specialist

5. Doctor spending enough time with patient during the consultation

6. Regular doctor spending enough time with patient during the consultation

7. Doctor providing easy-to-understand explanations

8. Regular doctor providing easy-to-understand explanations

9. Doctor giving opportunity to ask questions or raise concerns

10. Regular doctor giving opportunity to ask questions or raise concerns

11. Doctor involving patient in decisions about care and treatment

12. Regular doctor involving patient in decisions about care and treatment

NOTES

PE questionnaire collects weighted rates, and standard errors of the weighted rates by 4 age groups (16-24, 25-44, 45-65 and 65+) and also for the population aged 16 and over as a whole. 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 refer to different age groups or do not strictly comply with the definitions, please indicate this in the S&M 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) if your country has not done.

For questions please contact: HCQO.Contact@oecd.org

PE1) CONSULTATION SKIPPED DUE TO COSTS
(See Glossary for definitions of italicized terminology)

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

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 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).

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.

For questions please contact: HCQO.Contact@oecd.org

PE2) MEDICAL TESTS, TREATMENT OR FOLLOW-UP SKIPPED DUE TO COSTS
(See Glossary for definitions of italicized terminology)

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

> **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 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).

> **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.

PE3) PRESCRIBED MEDICINE SKIPPED DUE TO COSTS

(See Glossary for definitions of italicized terminology)

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

> **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 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).

> **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.

For questions please contact: HCQO.Contact@oecd.org

PE4) WAITING TIME OF MORE THAN 4 WEEKS FOR GETTING AN APPOINTMENT WITH A SPECIALIST

(See Glossary for definitions of italicized terminology)

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

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 reported having waited for four weeks or more for getting an appointment with a specialist.

Denominator: Number of survey respondents who reported having had an appointment with a specialist in the reference year and provided a duration of the waiting time.

For questions please contact: HCQO.Contact@oecd.org

PE5) DOCTOR SPENDING ENOUGH TIME WITH PATIENT DURING THE CONSULTATION
(See Glossary for definitions of italicized terminology)

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

> **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 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.

PE6) REGULAR DOCTOR SPENDING ENOUGH TIME WITH PATIENT DURING THE CONSULTATION

(See Glossary for definitions of italicized terminology)

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

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 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.

PE7) DOCTOR PROVIDING EASY-TO-UNDERSTAND EXPLANATIONS
(See Glossary for definitions of italicized terminology)

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

> **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 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.

PE8) REGULAR DOCTOR PROVIDING EASY-TO-UNDERSTAND EXPLANATIONS
(See Glossary for definitions of italicized terminology)

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

> **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 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.

For questions please contact: HCQO.Contact@oecd.org

PE9) DOCTOR GIVIGN OPPORTUNITY TO ASK QUESTIONS OR RAISE CONCERNS
(See Glossary for definitions of italicized terminology)

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

> **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 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.

For questions please contact: HCQO.Contact@oecd.org

PE10) REGULAR DOCTOR GIVING OPPORTUNITY TO ASK QUESTIONS OR RAISE CONCERNS

(See Glossary for definitions of italicized terminology)

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

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 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.

For questions please contact: HCQO.Contact@oecd.org

PE11) DOCTOR INVOLVING PATIENT IN DECISIONS ABOUT CARE AND TREATMENT
(See Glossary for definitions of italicized terminology)

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

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 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.

PE12) REGULAR DOCTOR INVOLVING PATIENT IN DECISIONS ABOUT CARE AND TREATMENT

(See Glossary for definitions of italicized terminology)

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

> **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 doctor 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.

For questions please contact: HCQO.Contact@oecd.org

PATIENT SAFETY (PS) QUESTIONNAIRE

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

1. Retained surgical item or unretrieved device fragment using unlinked data

2. Retained surgical item or unretrieved device fragment using linked data

3. Postoperative pulmonary embolism - hip and knee replacement discharges using unlinked data

4. Postoperative pulmonary embolism - hip and knee replacement discharges using linked data

5. Mortality among hip and knee replacement discharges with postoperative pulmonary embolism using linked data

6. Postoperative deep vein thrombosis - hip and knee replacement discharges using unlinked data

7. Postoperative deep vein thrombosis - hip and knee replacement discharges using linked data

8. Mortality among hip and knee replacement discharges with postoperative deep vein thrombosis using linked data

9. Hip and knee replacement discharges without postoperative pulmonary embolism or deep vein thrombosis using linked data

10. Mortality among hip and knee replacement discharges without postoperative pulmonary embolism or deep vein thrombosis using linked data

11. Postoperative sepsis - abdominal discharges using unlinked data

12. Postoperative sepsis - abdominal discharges using linked data

13. Post-operative wound dehiscence using unlinked data

14. Post-operative wound dehiscence using linked data

15. Obstetric trauma vaginal delivery with instrument

16. Obstetric trauma vaginal delivery without instrument

NOTES

The following abbreviations used in the indicator algorithms and questionnaire to denote specified data outputs for the 2014-15 HCQI data collection:

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

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For questions please contact: HCQO.Contact@oecd.org

Each indicator includes a flow chart to illustrate calculation steps which may be helpful for countries.

General PSI calculation approach

Figure 1 outlines the general approach to the calculation of PSIs, identifying the denominator population for each indicator.

Figure 9 GENERAL APPROACH TO CALCULTING PSIS
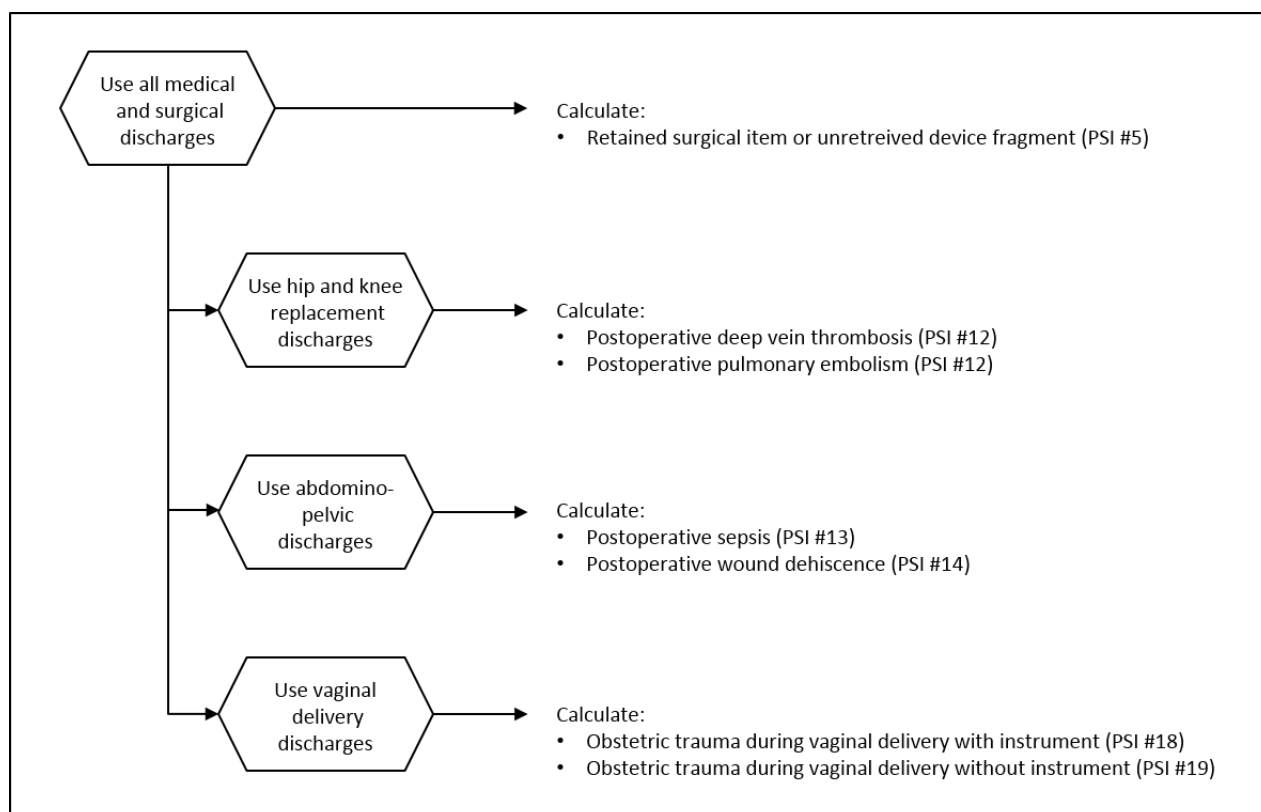
Exclusion Rules

Some countries have a time stamp on their coded procedures while others do not. In countries where a time stamp is available the following illustrative example may help guide surgical admission exclusions.

A surgical procedure 'A' to fix a post-operative complication (for example, PE or DVT) and another significant surgical procedure 'B' are both recorded during an admission. However, the date of procedure 'A' to fix the complication occurs *before* the significant procedure 'B'. In this situation, the surgical admission should be excluded. Clearly, procedure 'B' cannot be the cause of the complication under these circumstances, and should not be counted as a patient safety event.

Similarly, if the *only* surgical procedure recorded during the surgical admission is one to fix a post-operative PE or DVT, then this case should be excluded because it is unlikely to signal a patient safety event as having occurred during that admission.

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PS1) RETAINED SURGICAL ITEM OR UNRETRIEVED DEVICE FRAGMENT USING UNLINKED DATA

(See Glossary for definitions of italicized terminology)

Coverage: Surgical and medical discharges for patients aged 15 and older

Numerator: Discharges among cases defined in the denominator with ICD code for foreign body left in during procedure in a secondary diagnosis field during the surgical admission (see ICD codes below).

Denominator: All surgical and medical discharges for patients aged 15 and older.

For relevant procedure codes see Appendix A - Operating Room Procedure Codes, of the following document:

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V44/TechSpecs/PSI%20Appendices.pdf.

Exclude:

- **PDX** - with ICD- code for foreign body left in during procedure in a) the principal diagnosis field or b) secondary diagnosis present on admission (if known)**.**

- **LOS** - with a length of stay less than 24 hours (in those countries where a timestamp of admission or discharge is not available, cases with a length of stay of 0 days shall be excluded).

ICD-9-CM Retained surgical item or unretrieved device fragment diagnosis codes:

9984	Foreign body accidentally left during a procedure
9987	Acute reactions to foreign substance accidentally left during a procedure

Foreign body left in during:

| E8710	Surgical operation
E8711	Infusion or transfusion
E8712	Kidney dialysis or other perfusion
E8713	Injection or vaccination
E8714	Endoscopic examination
E8715	Aspiration of fluid or tissue, puncture, and catheterization
E8716	Heart catheterization
E8717	Removal of catheter or packing
E8718	Other specified procedures
E8719	Unspecified procedure

ICD-10-WHO Retained surgical item or unretrieved device fragment diagnosis codes:

T81.5	Foreign body accidentally left in body cavity or operation wound following a procedure

T81.6	Acute reaction to foreign substance accidentally left during a procedure
Y61.0	Foreign object accidentally left in body during surgical and medical care: During surgical operation
Y61.1	Foreign object accidentally left in body during surgical and medical care: During infusion or transfusion
Y61.2	Foreign object accidentally left in body during surgical and medical care: During kidney dialysis or other perfusion
Y61.3	Foreign object accidentally left in body during surgical and medical care: During injection or immunization
Y61.4	Foreign object accidentally left in body during surgical and medical care: During endoscopic examination
Y61.5	Foreign object accidentally left in body during surgical and medical care: During heart catheterization
Y61.6	Foreign object accidentally left in body during surgical and medical care: During aspiration, puncture and other catheterization
Y61.7	Foreign object accidentally left in body during surgical and medical care: During removal of catheter or packing
Y61.8	Foreign object accidentally left in body during surgical and medical care: During other surgical and medical care
Y61.9	Foreign object accidentally left in body during surgical and medical care: During unspecified surgical and medical care

Figure 10 RETAINED SURGICAL ITEM OR UNRETRIEVED DEVICE FRAGMENT

ALGORITHM FOR SURGICAL CALCULATION METHOD USING UNLINKED DATA
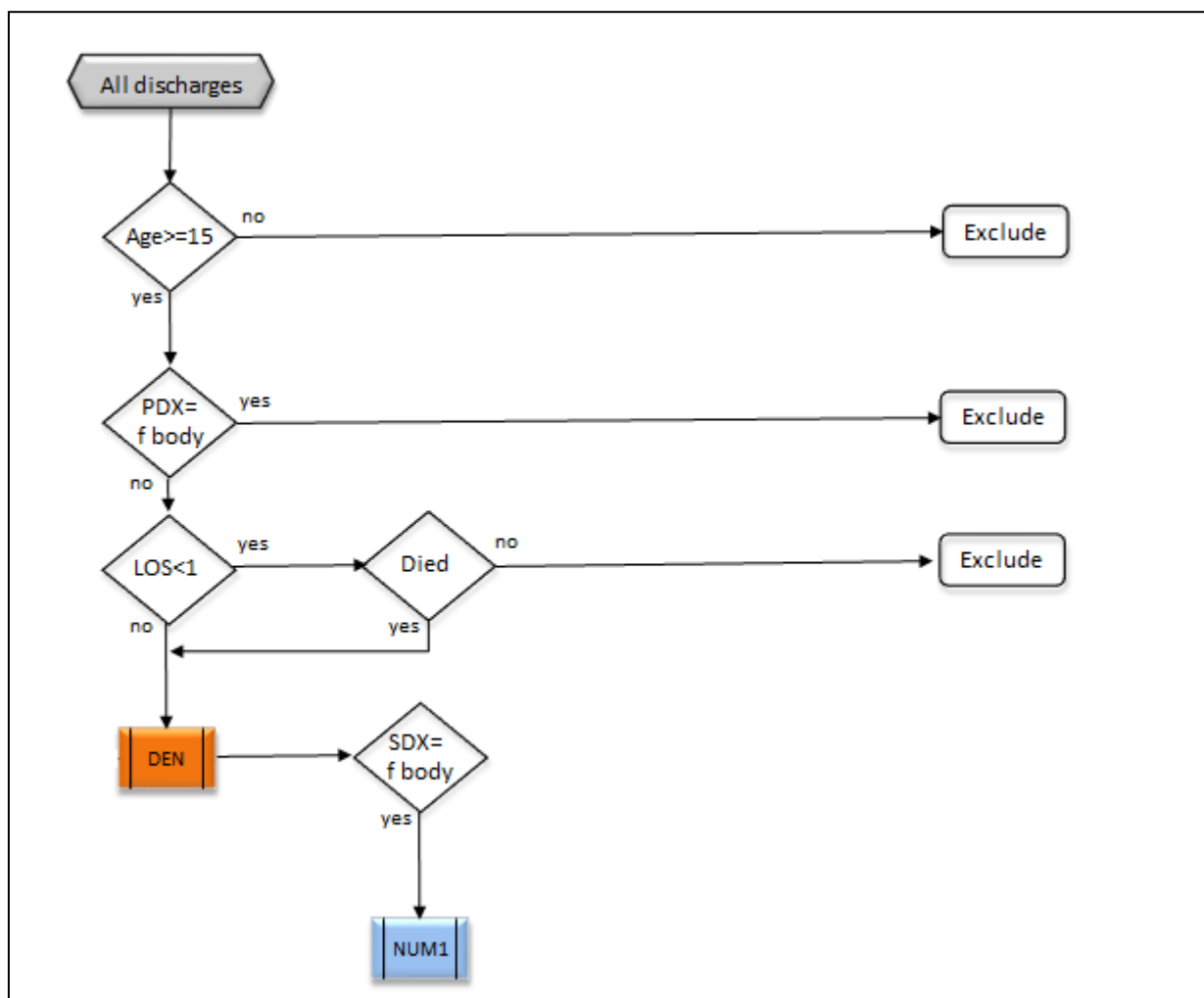
PDX: principal diagnosis, f body: foreign body, LOS: length of stay, DEN: denominator dataset, SDX: secondary diagnosis, NUM1: numerator cases based on surgical admission

For questions please contact: HCQO.Contact@oecd.org

PS2) RETAINED SURGICAL ITEM OR UNRETRIEVED DEVICE FRAGMENT USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

PS3) POSTOPERATIVE PULMONARY EMBOLISM USING UNLINKED DATA

(See Glossary for definitions of italicized terminology)

Coverage: Hip&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: Hip and knee replacement discharges, meeting the inclusion and exclusion rules with an ICD code for an operating room procedure (see figure 11 below).

Surgical discharges:

For relevant codes See Appendix A - Operating Room Procedure Codes#, of the following document:

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V44/TechSpecs/PSI%20Appendices.pdf.

Countries which make use of the ICD-10-AM (Australian modification) may consider using surgical DRGs and the following medical DRGs B60*, B61*, B82* (paraplegia, quadriplegia and spinal cord conditions) if these are reported with an operating room procedure.

Exclude:

- **MDC** - cases from the numerator and denominator for *MDC 14* (Pregnancy, childbirth, and puerperium) or principal diagnosis in Annex C (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- **IVC** - Cases from the numerator and denominator where a procedure for interruption of vena cava or insertion of inferior vena cava filter occurs before or on the same day as the first / main operating room procedure (hip/knee replacement and all surgical discharges) or where a procedure for interruption of vena cava is the only operating room procedure (all surgical discharges).

- **PDX** - case 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.

Hip and knee replacement discharges:

ICD-9-CM Total hip and knee replacement procedure code:

8151	Total hip replacement
8153	Revision of hip replacement
8154	Total knee replacement

8155	Revision of knee replacement

ICD-9-CM Pulmonary Embolism diagnosis codes:

4151	Pulmonary embolism
41511	Iatrogenic pulmonary embolism and infarction
41519	Pulmonary embolism and infarction, other
41513	Saddle embolism pulmonary artery

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-9-CM Interruption of Vena Cava procedure code:

387	Interruption of vena cava
	Percutaneous and open insertion of inferior vena cava filter

Note: Please search for percutaneous and open insertion of IVC filter codes in your country's version of procedure coding.

The Australian Classification of Health Interventions (ACHI) codes:

Block [726]	34800-00	Interruption of vena cava
Block [723]	35330-00	Percutaneous insertion of inferior vena cava filter
Block [723]	35330-01	Open insertion of inferior vena cava filter

Figure 11 POSTOPERATIVE PULMONARY EMBOLISM

ALGORITHM FOR CALCULATION METHOD USING UNLINKED DATA
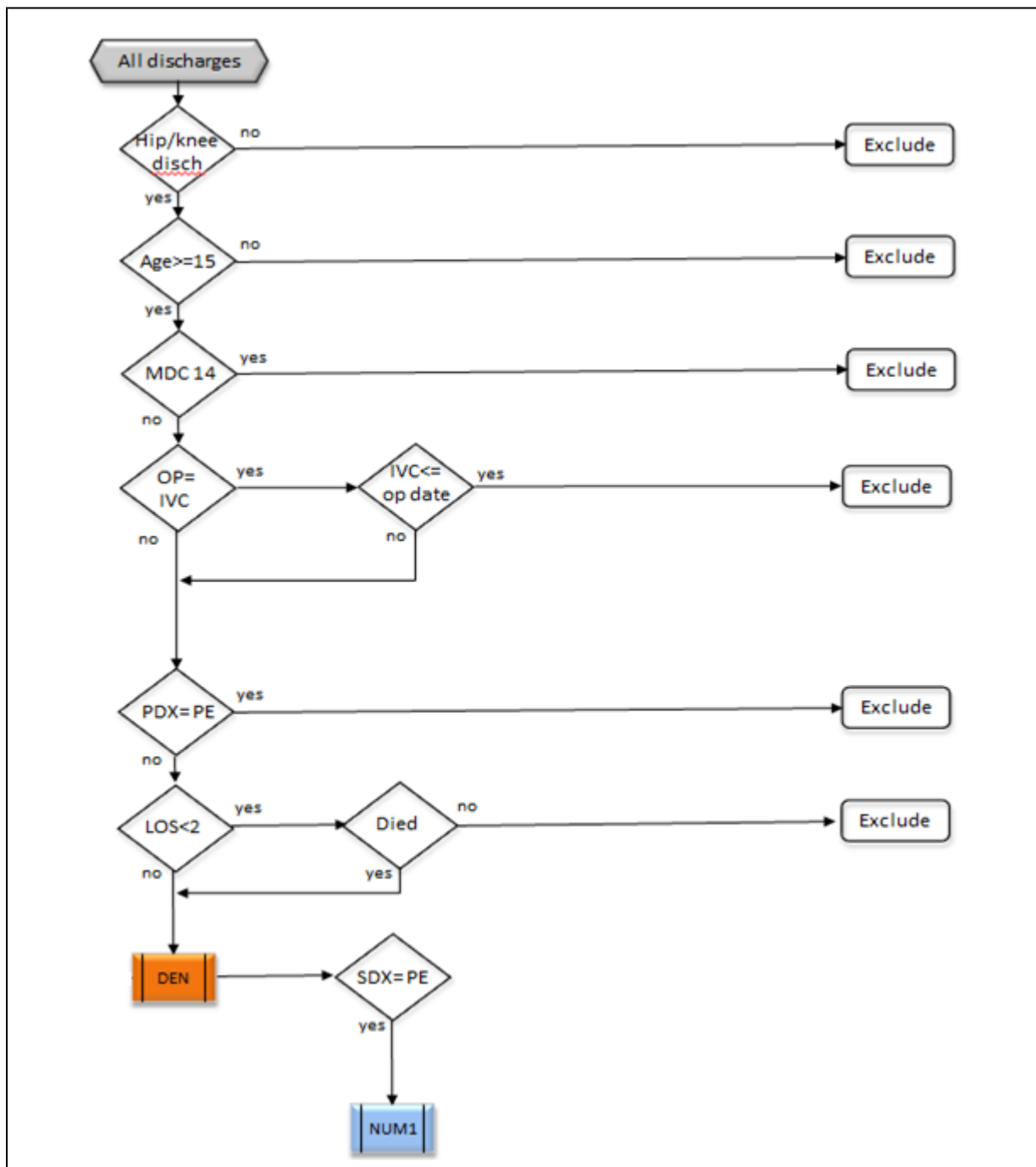
OP=IVC: operating procedure for vena cava, PDX: principal diagnosis, PE: pulmonary embolism, LOS: length of stay, DEN: denominator dataset, SDX: secondary diagnosis, NUM1: numerator cases based on surgical admission

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PS4) POSTOPERATIVE PULMONARY EMBOLISM USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

PS5) MORTALITY AMONG HIP AND KNEE REPLACEMENT DISCHARGES WITH POSTOPERATIVE PULMONARY EMBOLISM USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

PS6) POSTOPERATIVE DEEP VEIN THROMBOSIS USING UNLINKED DATA

(See Glossary for definitions of italicized terminology)

Coverage: Hip&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 (see figure 12 below).

Surgical discharges:

For relevant codes See Appendix A - Operating Room Procedure Codes#, of the following document:

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V44/TechSpecs/PSI%20Appendices.pdf.

Countries which make use of the ICD-10-AM (Australian modification) may consider using surgical DRGs and the following medical DRGs B60*, B61*, B82* (paraplegia, quadriplegia and spinal cord conditions) if these are reported with an operating room procedure.

Exclude:

- **MDC** - cases from the numerator and denominator for MDC 14 (Pregnancy, childbirth, and puerperium) or principal diagnosis in Annex C (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- **IVC** - cases from the numerator and denominator where a procedure for interruption of vena cava or insertion of inferior vena cava filter occurs before or on the same day as the first / main operating room procedure (hip/knee replacement and all surgical discharges)

- **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.

Hip and knee replacement discharges:

ICD-9-CM Total hip and knee replacement procedure code:

8151	Total hip replacement
8153	Revision of hip replacement

For questions please contact: HCQO.Contact@oecd.org

8154	Total knee replacement
8155	Revision of knee replacement

ICD-9-CM Deep Vein Thrombosis diagnosis codes:

45111	Phlebitis and thrombosis of femoral vein (deep) (superficial)
45119	Phlebitis and thrombophlebitis of deep vessel of lower extremities – other
4512	Phlebitis and thrombophlebitis of lower extremities
45181	Phlebitis and thrombophlebitis of iliac vein
4519	Phlebitis and thrombophlebitis of other sites – of unspecified site
45340	DVT-embolism lower ext nos (Oct 04)
45341	DVT-emb prox lower ext
45342	DVT-emb distal lower ext
4538	Other venous embolism and thrombosis of other specified veins

ICD-10-WHO Pulmonary Embolism and Deep Vein Thrombosis diagnosis codes:

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
I80.8	Phlebitis and thrombophlebitis of other sites
I80.9	Phlebitis and thrombophlebitis of unspecified site
I82.8	Embolism and thrombosis of other specified veins

ICD-9-CM Interruption of Vena Cava procedure code:

| 387	Interruption of vena cava
	Percutaneous and open insertion of inferior vena cava filter

Note: Please search for percutaneous and open insertion of IVC filter codes in your country's version of procedure coding.

The Australian Classification of Health Interventions (ACHI) codes:

Block [726]	34800-00	Interruption of vena cava
Block [723]	35330-00	Percutaneous insertion of inferior vena cava filter
Block [723]	35330-01	Open insertion of inferior vena cava filter

For questions please contact: HCQO.Contact@oecd.org

Figure 12 POSTOPERATIVE DEEP VEIN THROMBOSIS

ALGORITHM FOR CALCULATION METHOD USING UNLINKED DATA
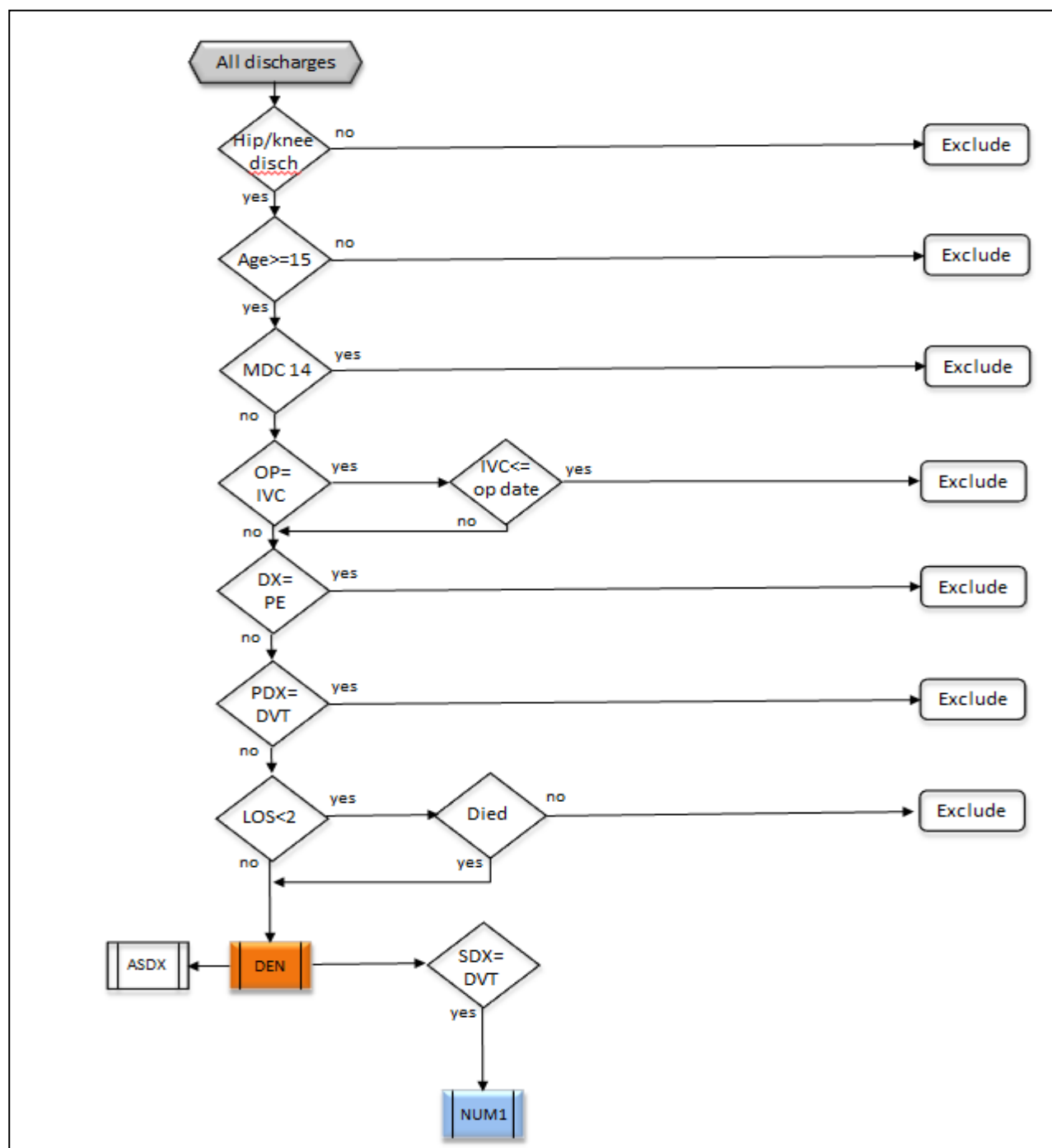
OP=IVC: operating procedure for vena cava, PDX: principal diagnosis, PE: pulmonary embolism, DVT: deep vein thrombosis, LOS: length of stay, DEN: denominator dataset, SDX: secondary diagnosis, NUM1: numerator cases based on surgical admission,

PS7) POSTOPERATIVE DEEP VEIN THROMBOSIS USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

PS8) MORTALITY AMONG HIP AND KNEE REPLACEMENT DISCHARGES WITH POSTOPERATIVE DEEP VEIN THROMBOSIS USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

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PS9) HIP AND KNEE REPLACEMENT DISCHARGES WITHOUT POSTOPERATIVE PULMONARY EMBOLISM OR DEEP VEIN THROMBOSIS USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

For questions please contact: HCQO.Contact@oecd.org

PS10) MORTALITY AMONG HIP AND KNEE REPLACEMENT DISCHARGES WITHOUT POSTOPERATIVE PULMONARY EMBOLISM OR DEEP VEIN THROMBOSIS USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

PS11) POSTOPERATIVE SEPSIS USING UNLINKED DATA
(See Glossary for definitions of italicized terminology)

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, meeting the inclusion and exclusion rules with an ICD code for an operating room procedure.

Surgical discharges: See Appendix A - Operating Room Procedure Codes#, of the following document:

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V44/TechSpecs/PSI%20Appendices.pdf

Abdominopelvic discharges: See Annex F (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

Exclude:

- **MDC** - cases from the numerator and denominator for MDC 14 (Pregnancy, childbirth, and puerperium) or principal diagnosis in Annex C (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

- **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.

ICD-9-CM Sepsis diagnosis codes:

0380	Streptococcal septicaemia
0381	Staphylococcal septicaemia
03810	Staphylococcal ependence, unspecified
03811	Methicillin susceptible Staphylococcus aureus septicaemia
03812	Methicillin resistant Staphylococcus aureus septicaemia

For questions please contact: HCQO.Contact@oecd.org

03819	Other staphylococcal septicaemia
0382	Pneumococcal ependence (streptococcus pneumoniale ependence)
0383	Septicaemia due to anaerobes
78552	Septic shock
78559	Other shock w/o mention of trauma
9980	Postoperative shock
99800	Postoperative shock, nos
99802	Postoperative shock, septic

Septicaemia due to:

03840	Gram-negative organism, unspecified
03841	Haemophilus influenza
03842	Escherichia coli
03843	Pseudomonas
03844	Serratia
03849	Septicaemia due to other gram-negative organisms
0388	Other specified septicaemias
0389	Unspecified septicaemia
99591	Systemic inflammatory response syndrome due to infectious process w/o organ dysfunction
99592	Systematic inflammatory response syndrome due to infectious process w/organ dysfunction

ICD-10-WHO Sepsis diagnosis codes:

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
R57.2	Septic shock
R57.8	Other shock
R65.0	Systemic Inflammatory Response Syndrome of infectious origin without organ failure
R65.1	Systemic Inflammatory Response Syndrome of infectious origin with organ failure

T81.1	Shock during or resulting from a procedure, not elsewhere classified

Immunocompromised state codes:

- ICD-9-CM: See Appendix I – Immunocompromised state diagnosis and procedure codes, of the following document:

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V44/TechSpecs/PSI%20Appendices.pdf

- ICD-10-WHO: See **Annex G** (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I). Please note the related procedure codes (see ICD-9-CM codes above) are not specified and countries are requested to search for the relevant codes in their procedure classification systems.

Cancer codes:

- ICD-9-CM: See *Appendix H – Cancer diagnosis codes,* of the following document:

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V44/TechSpecs/PSI%20Appendices.pdf

- ICD-10-WHO: See **Annex H** (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I).

Infection codes:

- ICD-9-CM: See Appendix F –Infection diagnosis codes, of the following document:

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V44/TechSpecs/PSI%20Appendices.pdf

- ICD-10-WHO: See **Annex I** (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I).

For questions please contact: HCQO.Contact@oecd.org

Figure 13 POSTOPERATIVE SEPSIS

ALGORITHM FOR CALCULATION METHOD USING UNLINKED DATA
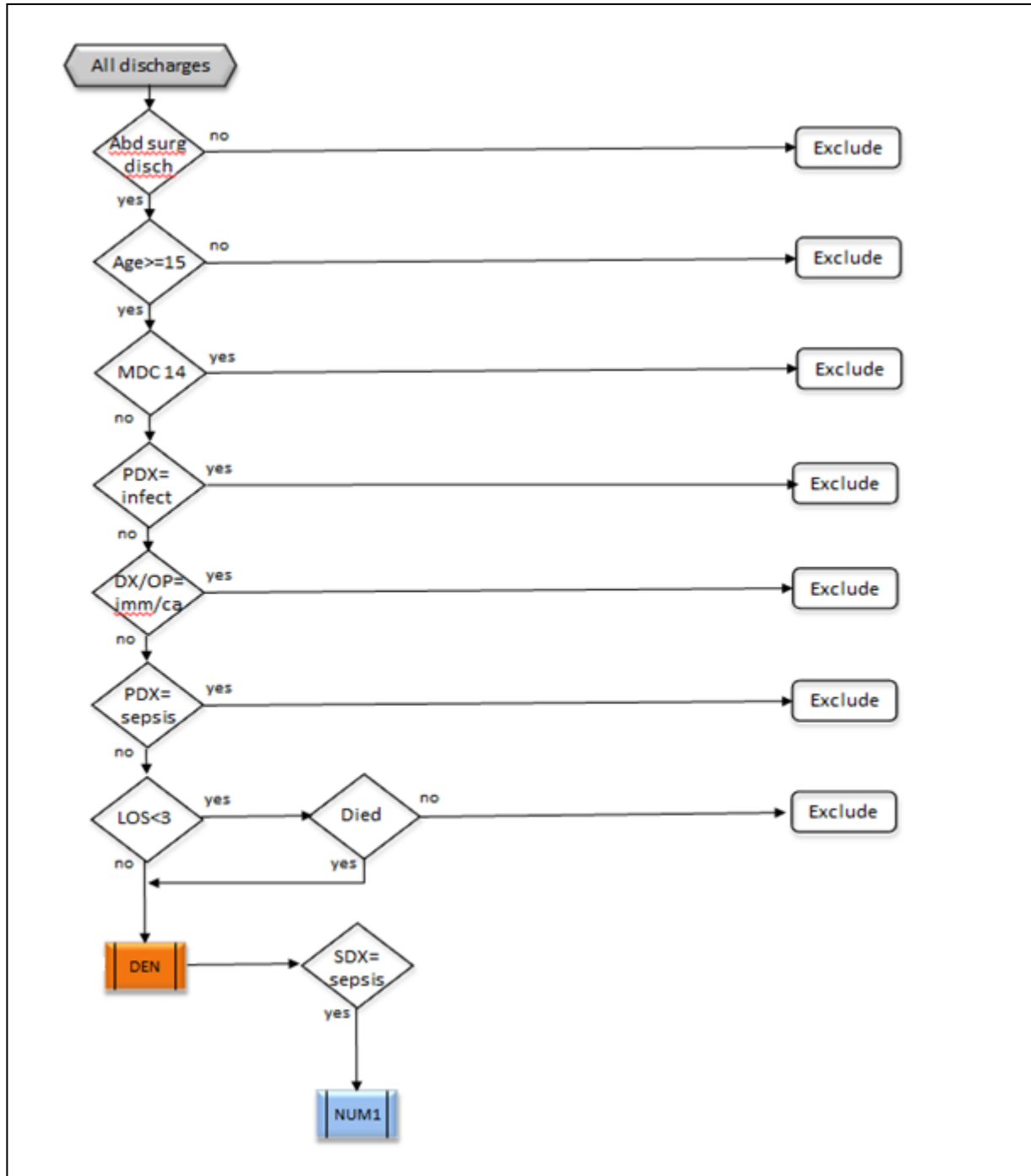
DX/OP=imm/ca: diagnosis or operating procedure immunocompromised satate or cancer, PDX: principal diagnosis, LOS: length of stay, DEN: denominator dataset, SDX: secondary diagnosis, NUM1: numerator cases based on surgical admission,

For questions please contact: HCQO.Contact@oecd.org

PS12) POSTOPERATIVE SEPSIS USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

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PS13) POSTOPERATIVE WOUND DEHISCENCE USING UNLINKED DATA
(See Glossary for definitions of italicized terminology)

Coverage: Abdominal discharges for patients aged 15 and older

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Numerator: Discharges among cases defined in the denominator with procedure code for reclosure of postoperative disruption of abdominal wall (see procedure code below)

Denominator: All abdominopelvic surgical discharges meeting the inclusion and exclusion rules.

- See Annex F (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I)

Exclude:

- **MDC** - MDC 14 (Pregnancy, childbirth, and puerperium) or principal diagnosis in Annex C (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I) from the numerator and denominator.

- **IMM** - Cases from the numerator and denominator with any diagnosis or procedure code for immunocompromised state –see ICD codes below,

- **REC** - Cases from the numerator and denominator where a procedure for reclosure of postoperative disruption of abdominal wall occurs before or on the same day as the first abdominopelvic surgery procedure (Reclos<=date$^+$)

- **LOS -** surgical admissions (NUM1) where length of stay is less than 2 days

---

ICD-9-CM Reclosure procedure code:

| 5461	Reclosure postoperative disruption

Immunocompromised state codes:

- ICD-9-CM: See Appendix I – Immunocompromised state diagnosis and procedure codes, of the following document:

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V44/TechSpecs/PSI%20Appendices.pdf,

- ICD-10-WHO: See Annex G (Excel sheet - HCQO 2018_19 Data Collection_Annex A-I).

Figure 14 POSTOPERATIVE WOUND DEHISCENCE

ALGORITHM FOR CALCULTATION METHOD USING UNLINKED DATA
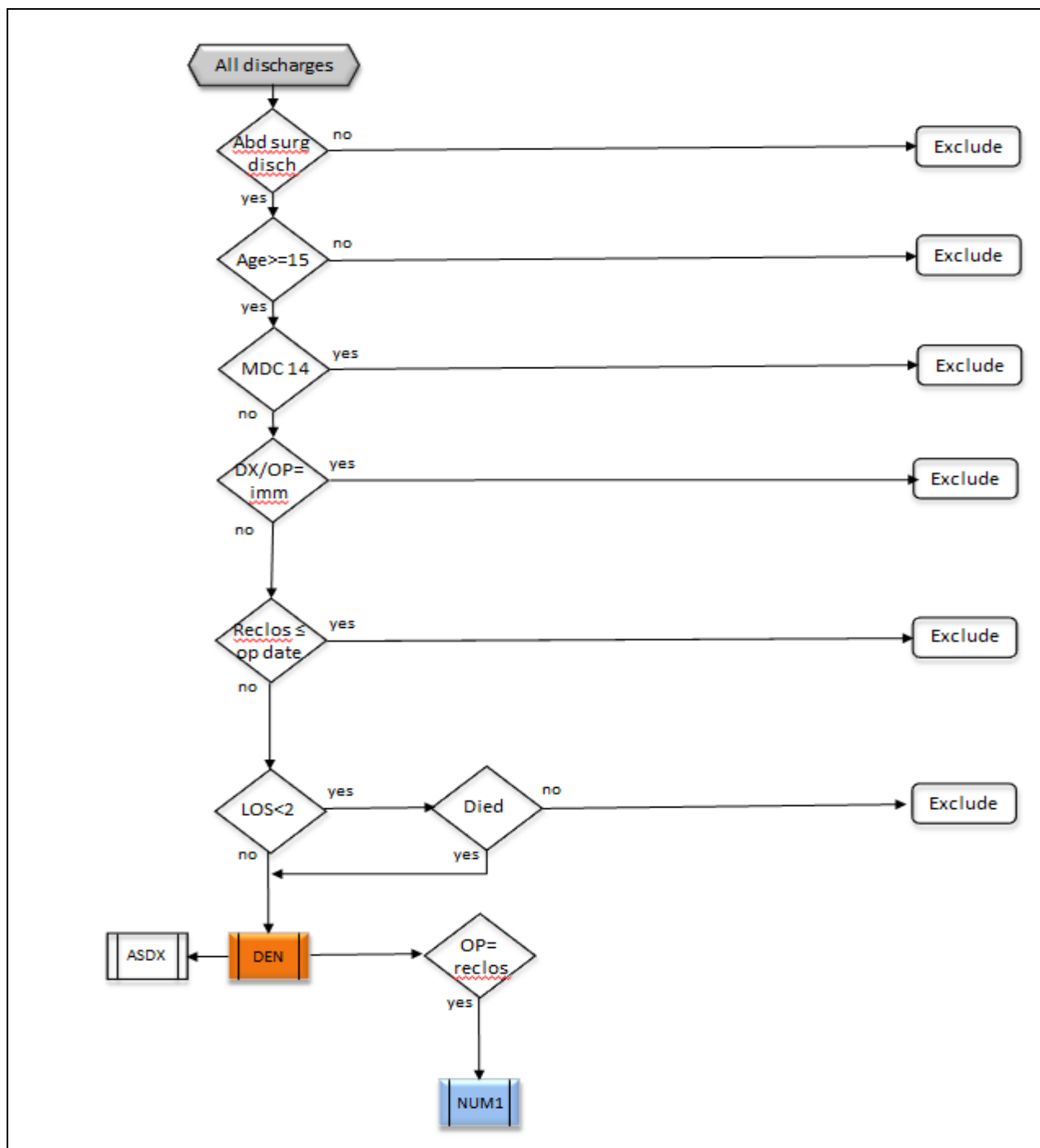
DX/OP=imm: diagnosis or operating procedure immunocompromised state, PDX: principal diagnosis, LOS: length of stay, DEN: denominator dataset, SDX: secondary diagnosis, NUM1: numerator cases based on surgical admission

For questions please contact: HCQO.Contact@oecd.org

PS14) POSTOPERATIVE WOUND DEHISCENCE USING LINKED DATA

NOTE:
No calculation information is available for this indicator in the data collection guidelines. This indicator should be calculated only using SAS code provided by the OECD as part of Method II. Please see Table 4 for relevant SAS programs.

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For questions please contact: HCQO.Contact@oecd.org

PS14) OBSTETRIC TRAUMA DURING VAGINAL DELIVERY WITH INSTRUMENT

(See Glossary for definitions of italicized terminology)

Coverage: Vaginal delivery discharges for patients aged 15 and over.

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

Denominator: All vaginal delivery discharges with any procedure code for instrument-assisted delivery (see procedure codes below).

ICD-9-CM Obstetric Trauma diagnosis codes:

66420	Delivery with third degree laceration, unspecified
66421	Delivery with third degree laceration, during delivery
66424	Delivery with third degree laceration, postpartum condition or complication
66430	Trauma to perineum and vulva during delivery, fourth degree perineal laceration
66431	Trauma to perineum and vulva during delivery, fourth degree perineal laceration
66434	Trauma to perineum and vulva during delivery, fourth degree perineal laceration

ICD-9-CM Obstetric Trauma procedure codes:

7561	Repair of current obstetric lacerations of bladder and urethra
7562	Repair of current obstetric lacerations of rectum and sphincter

ICD-10-WHO Obstetric Trauma diagnosis codes:

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

ICD-9-CM Instrument-Assisted Delivery procedure codes:

720	Low forceps operation
721	Low forceps operation w/ episiotomy
7221	Mid forceps operation w/ episiotomy
7229	Other mid forceps operation
7231	High forceps operation w/ episiotomy
7239	Other high forceps operation
724	Forceps rotation of fetal head
7251	Partial breech extraction w/ forceps to aftercoming head
7253	Total breech extraction w/ forceps to aftercoming head
726	Forceps application to aftercoming head

For questions please contact: HCQO.Contact@oecd.org

7271	Vacuum extraction w/ episiotomy
7279	Vacuum extraction delivery nec
728*	Other specified instrumental delivery
729*	Unspecified instrumental delivery

* Failed vacuum extraction, failed forceps, assisted breech delivery, episiotomy, incision of cervix and symphysiotomy procedures are to be excluded from this code in the Instrument Assisted Delivery Procedures code list.

ICD-9-CM Outcome of delivery codes:

Note: This category is intended for the coding of the outcome of delivery on the mother's record (Department of Health and Human Services, 2007)

V27.0	Single liveborn
V27.1	Single stillborn
V27.2	Twins, both liveborn
V27.3	Twins, one liveborn and one stillborn
V27.4	Twins, both stillborn
V27.5	Other multiple birth, all liveborn
V27.6	Other multiple birth, some liveborn
V27.7	Other multiple birth, all stillborn
V27.9	Unspecified outcome of 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, 2006)

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 15 OBSTETRIC TRAUMA DURING VAGINAL DELIVERY WITH INSTRUMENT ALGORITHM
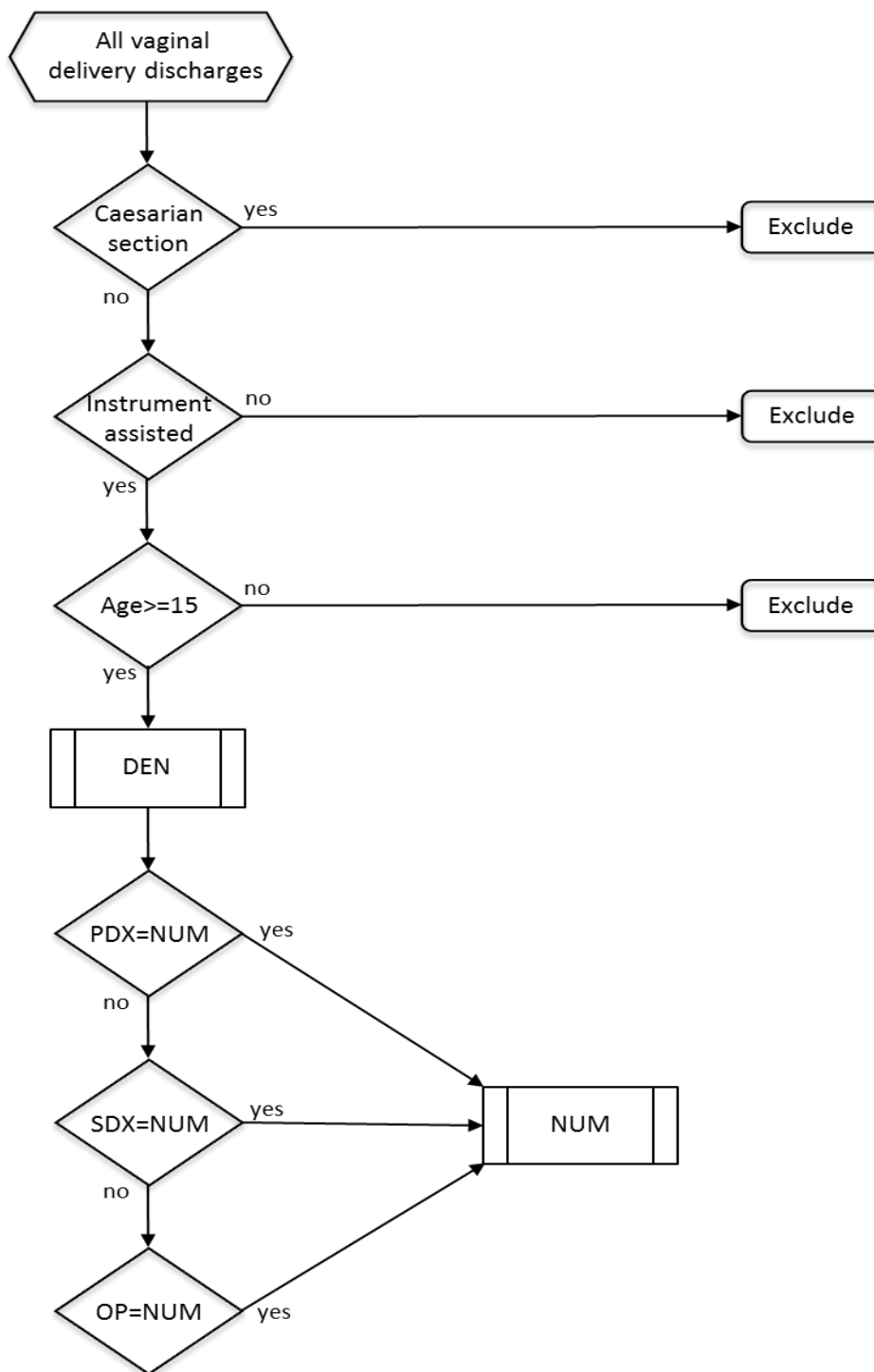
PDX: principal diagnosis, DEN: denominator dataset, SDX: secondary diagnosis, NUM: numerator cases, OP: procedure code.

For questions please contact: HCQO.Contact@oecd.org

PS16) OBSTETRIC TRAUMA DURING VAGINAL DELIVERY WITHOUT INSTRUMENT
(See Glossary for definitions of italicized terminology)

Coverage: Vaginal delivery discharges for patients aged 15 and over.

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

Denominator: All vaginal delivery discharge patients.

Exclude cases: with instrument-assisted delivery.

ICD-9-CM Obstetric Trauma diagnosis codes:

66420	Delivery with third degree laceration, unspecified
66421	Delivery with third degree laceration, during delivery
66424	Delivery with third degree laceration, postpartum condition or complication
66430	Trauma to perineum and vulva during delivery, fourth degree perineal laceration
66431	Trauma to perineum and vulva during delivery, fourth degree perineal laceration
66434	Trauma to perineum and vulva during delivery, fourth degree perineal laceration

ICD-9-CM Obstetric Trauma procedure codes:

7561	Repair of current obstetric lacerations of bladder and urethra
7562	Repair of current obstetric lacerations of rectum and sphincter

ICD-10-WHO Obstetric Trauma diagnosis codes:

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

ICD-9-CM Instrument-Assisted Delivery procedure codes

720	Low forceps operation
721	Low forceps operation w/ episiotomy
7221	Mid forceps operation w/ episiotomy
7229	Other mid forceps operation
7231	High forceps operation w/ episiotomy
7239	Other high forceps operation
724	Forceps rotation of fetal head
7251	Partial breech extraction w/ forceps to aftercoming head

For questions please contact: HCQO.Contact@oecd.org

7253	Total breech extraction w/ forceps to aftercoming head
726	Forceps application to aftercoming head
7271	Vacuum extraction w/ episiotomy
7279	Vacuum extraction delivery nec
728*	Other specified instrumental delivery
729*	Unspecified instrumental delivery

* 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 <u>included</u> in the definition of the 'without instrument' indicator.

ICD-9-CM Outcome of delivery codes:

Note: This category is intended for the coding of the outcome of delivery on the mother's record. (Department of Health and Human Services, 2007)

V27.0	Single liveborn
V27.1	Single stillborn
V27.2	Twins, both liveborn
V27.3	Twins, one liveborn and one stillborn
V27.4	Twins, both stillborn
V27.5	Other multiple birth, all liveborn
V27.6	Other multiple birth, some liveborn
V27.7	Other multiple birth, all stillborn
V27.9	Unspecified outcome of 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, 2006).

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

For questions please contact: HCQO.Contact@oecd.org

Figure 16 OBSTETRIC TRAUMA DURING VAGINAL DELIVERY WITHOUT INSTRUMENT ALGORITHM
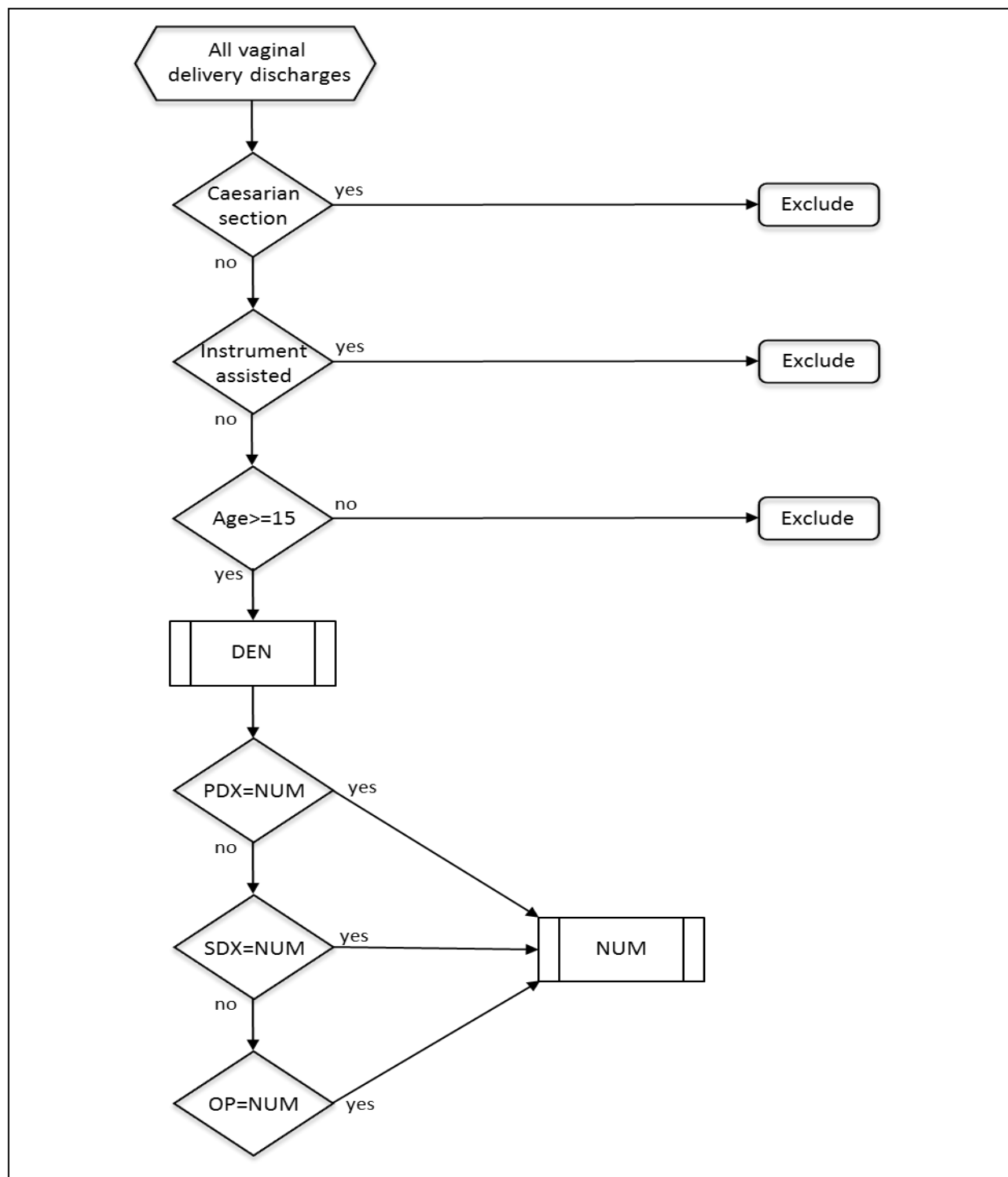
PDX: principal diagnosis, DEN: denominator dataset, SDX: secondary diagnosis, NUM: numerator cases, OP: procedure code.

AGE-(SEX) STANDARDISATION

To enable comparability across countries, the crude rates/means for many of the indicators are standardised (or adjusted) by age and sex in order to remove the confounding effect of different population/patients structure that we know differ in OECD countries. Confidence intervals for the standardised rates are also calculated.

The method used is direct standardisation: an overview of the calculation of standardised rates and confidence interval is provided in Box 1.

As for excess mortality for people diagnosed with a mental disorder in the MH questionnaire, mortality rates provided for both numerator and denominator are standardised, and then the standardised rates are used to calculate the ratio.

Box 1. 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 2010 OECD population, which has been selected as standard population** (please refer to Table 4).

Table 5. 2010 OECD standard population (15+)

	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	41779971	42510958	43903155	43267382	44525464	43904781	43687912
Female		39928651	41007212	42600096	42366599	43907385	43659988	44012322
Total		81708622	83518170	86503251	85633981	88432849	87564769	87700234
	50-54	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-84**	**85+**
Sex								
Male	40224853	36052966	32284843	24545544	20135366	15164034	10097920	6845013
Female	41214826	37679220	34385226	27359105	24076627	20333960	16238522	15563267
Total	81439679	73732186	66670069	51904649	44211993	35497994	26336442	22408280

$$SR_j = \frac{\sum_i (ASR_{ij} \times POP_i)}{POP_{TOT}}$$

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

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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 2010 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 PC, AC 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 MH 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:

$$Lower\ value = SR_j - 1.96 \times Se(SR_j)$$
$$Upper\ value = SR_j + 1.96 \times Se(SR_j)$$

AC questionnaire

Please note that the range of ages for which raw data is requested **exceeds the range of ages used for standardisation in the AC questionnaire**. Data for younger age groups will be used by the OECD to assess the suitability of creating a disease-specific standard population for age and sex adjustment.

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ENABLING MACROS

How to enable macros varies slightly depending on the Excel version used:

- In Excel 1997-2003, go to Tools, then Options. In the Options window, go to Security tab and click on "Macro Security". Select Medium security level and click OK. Close Excel and then re-launch Excel application. If you did it correctly, you will be prompt to choose whether to enable macro or not (see Figure 6). Click on the button labelled "Enable macros".

Figure 17.   Enabling macros in Excel XP 2003
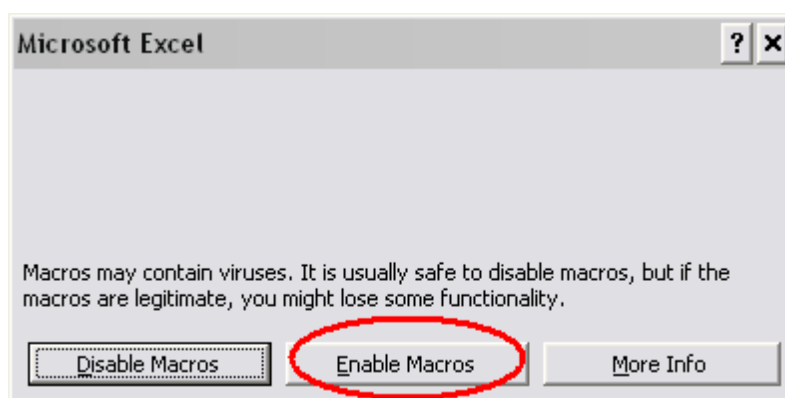
- In Excel 2007, the "Security Warning" (see Figure 7) will appear *as soon as* the file is opened. To enable the use of macros, you will need to select the "Options" box (see Figure 7, left). This will open the dialog box "Security Alert - Macro" (see Figure 9, right). Select the "Enable this content" option and click OK.

Figure 18.   Enabling macros in Excel 2007 or 2010

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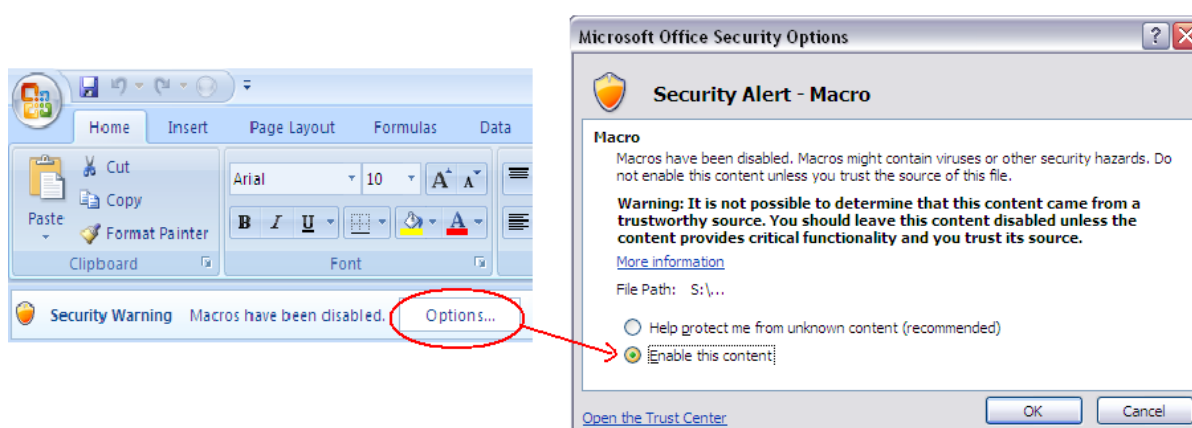
- In Excel 2010 or if the Security Warning does not appear in Excel 2007, first click on file Menu and select Options. In Options, select "Trust Center" from the left side bar and click "Trust Center Settings" button on the main window (see Figure 8, top). In the "Trust Center Settings" dialog window, select "Macro Settings" from the left side bar (see Figure 8, bottom), choose the "Enable All macros" option and click OK.

Figure 19.   Enabling macros in Excel 2007 or 2010