OECD Health Statistics 2023
Definitions, Sources and Methods

Surgical procedures (shortlist)

Surgical procedures are medical interventions involving an incision with instruments usually performed in an operating theatre and normally involving anaesthesia and/or respiratory assistance. Surgical procedures can be performed either as inpatient cases, day cases or, in certain instances, as outpatient cases. Procedures performed on an inpatient case and day case should be reported for all the procedures on the shortlist. For two procedures, the number of outpatient cases in hospitals and outside hospitals should also be reported where possible.

Notes:
- The method to count procedures should be based on a count of the *number of patients* who have received a given procedure or on a count of *only one code per procedure category for each patient*, in order to avoid double-counting procedures for which more than one code may be used in certain national classification systems. (For example, if a percutaneous coronary intervention with a coronary stenting is recorded as two separate codes, it should be reported as only one patient/procedure. Another example: if a cataract surgery is performed on the two eyes, only one patient/procedure should be counted. However, if a patient gets the same procedure at two different moments in a given year, then this procedure should be counted twice.)
- Access the mapping with ICD-9-CM codes.

   a) Inpatient cases: Procedures on patients who are *formally admitted* into a hospital and who stay for a *minimum of one night*.

   b) Day cases: Procedures on patients who are *formally admitted* in a hospital for receiving *planned* surgeries, and who are discharged *on the same day*.

   c) Outpatient cases *(collected only for cataract surgery and tonsillectomy)***:**

   Procedures on patients who are *not formally admitted* in hospital or in any other healthcare facility.

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

   Exclusion
   - Day cases
   - Inpatient cases

Sources and Methods

Australia

Source of data:

- **Australian Institute of Health and Welfare**, analysis of the AIHW National Hospital Morbidity Database (NHMD).
- Data are derived using AIHW analysis of the AIHW National Hospital Morbidity Database (NHMD). Please see http://meteor.aihw.gov.au for the data quality statements for the Admitted Patient Care National Minimum Data Set. For each reference year, these data are based on hospital separations from 1 July to 30 June (e.g. the 2019-20 data are reported in year 2019).
With the exception of:
- Data for *Caesarean sections* are sourced from the AIHW perinatal data collection. For data from 2009 onwards, see AIHW (2022) Australia's mothers and babies, AIHW, Australian Government, accessed 10 February 2023. Also at https://www.aihw.gov.au/reports-data/population-groups/mothers-babies/reports. For previous years, please see Australia's mothers and babies 2018—in brief. Cat. no. PER 108. Canberra: AIHW (and previous editions).
- Data up to 2004 for *Coronary angioplasty and bypasses* are sourced from the **AIHW/NHF National Cardiac Surgery and Coronary Angioplasty Registers**. See: AIHW: Davies J 2003. Coronary revascularisation in Australia 2000. Bulletin No. 7. AIHW Cat. No. AUS 35. Canberra: AIHW (and previous versions).
- Data for *bone marrow transplants* prior to 2000 are sourced from ABMTRR 2011. Australasian Bone Marrow Transplant Recipient Registry. Annual Data Summary 2009. Sydney: ABMTRR (and previous issues). Bone marrow and peripheral blood stem cell: Includes both allogeneic and autologous transplants.
Coverage:
- Please refer to Data Quality Statement noting NHMD includes records for all separations from essentially all Australian public and private hospitals. NHMD covers admitted patient activity from essentially all public and private hospitals in Australia.
Classification changes:
- From 1993-94 to 1997–98, procedures were recorded using the ICD-9-CM. From 1998-99, procedures were recorded using the Australian Classification of Health Interventions (ACHI), with the ACHI 8th edition being used in 2013-14. For 2015-16 and 2016–17, procedures were recorded using the ACHI 9th edition. Data for 2017-18 and 2018–19 principal diagnoses were recorded using the ACHI 10th edition. Data for 2019-20 principal diagnoses were recorded using the ACHI 11th edition.
Method:
- Data exclude separations with a care type of newborn (without qualified days) and records for hospital boarders and post humous organ procurement.
Break in time series:
- Data for 2012 (2012–13) onward - same-day separations where the mode of separation included death, or a discharge/transfer to an(other) acute hospital, residential aged care service (unless this is a usual place of residence), an(other) psychiatric hospital or other healthcare accommodation (including mothercraft hospitals) were considered an inpatient case to better align with the OECD definition; in previous years, these separations are considered day cases.
- Data for 2000-01 onward were calculated/revised based on a new methodology, using 'count distinct' by hospital separation to ensure that counts for multiple procedures on the same patient in a given episode were not duplicated.
- Counts for coronary artery bypass graft, open prostatectomy, laparoscopic hysterectomy, hip replacement, secondary hip replacement and total knee replacement are presented as a total for 2000 onward and not split by inpatient and day cases. This is because there was a very small number of day cases in each of these categories.
Notes: **Impact of COVID-19 on admissions from elective surgery waiting lists**:
- **2019–20**: Between February and the end of June 2020, a range of restrictions were introduced to prevent and reduce the spread of coronavirus (COVID-19). Although initiatives varied between Australia's federal and state/territory governments, overall these measures aimed to reduce the spread of the virus and maintain adequate capacity of the healthcare system to deal with the pandemic.
During this period, a number of initiatives impacted on the provision of healthcare services and reduced the flow of patients seeking in-hospital care, including:
- patients being re-directed to other healthcare services if they had symptoms consistent with COVID-19 or have been a close contact of someone who had been infected
- establishment of new modes of delivering healthcare services (e.g. telehealth services and 'virtual' care models) that could re-direct patients seeking non-urgent care
- changes in patient behaviours, including changes in healthcare seeking behaviours

- restricted activities that might reduce risks for some kinds of healthcare issues, such as injuries that could result in an emergency admission.

In addition, following a decision by Australia's National Cabinet, in the context of ensuring the health system maintained adequate capacity to deal with the COVID-19 pandemic, restrictions were applied to selected elective surgeries from 26 March 2020. Under these restrictions, only Category 1 and exceptional Category 2 procedures could be undertaken. These restrictions were eased (but not fully lifted) from 29 April 2020, allowing all Category 2 and some important Category 3 procedures to be performed. These restrictions led to an overall decrease in admissions from elective surgery waiting lists of 9.2% between 2018–19 and 2019–20 and impacted waiting times for elective surgery.

This range of measures impacted on the number of people being seeking hospital care, including to emergency departments and being admitted for elective surgery.

- **2020-21**: Many of the restrictions were eased in 2020, leading to an increase in hospitalisations in 2020–21. Following the easing of restrictions put in place on elective surgery in 2019–20, many jurisdictions implemented programs to fast-track elective surgeries and provided increased funding for surgeries which were delayed because of the Australian Government's response to the COVID-19 pandemic.

- Further information: Admitted patient activity - Australian Institute of Health and Welfare (aihw.gov.au).

Austria

Source of data: **Austrian Ministry of Social Affairs, Health, Care and Consumer Protection,** Diagnosis and Performance Reporting.
Reference period: 1st January to 31st December.
Coverage:
- Every single procedure is counted, even if the same procedure is performed repeatedly during the same hospital stay. For example, if a PTCA is performed two times during a hospital stay, it is counted two times. But if a single PTCA is performed AND a coronary stenting is recorded, this is counted only once in the PTCA data.
- According to the Austrian DRG-system, procedures to be performed in a day-clinic setting are cataract surgery, repair of inguinal hernia, laparoscopic repair of inguinal hernia, partial excision of mammary gland. All other procedures of the surgical procedures shortlist have to be performed during inpatient stays.
- Privately paid examinations carried out in private hospitals or in the ambulatory sector are not included.
- *Inpatients*: Procedures on patients who are formally admitted in hospital as inpatients (inpatient discharges include discharges to home, other inpatient-institutions and deaths in hospitals; they exclude day cases).
- *Day cases*: Planned same-day intervention on patients who are formally admitted as a day case (day cases are defined by the same admission and discharge dates (before midnight) with discharge-type "discharged")
- *Outpatients* (for cataract surgery and tonsillectomy): Procedures performed in outpatient or emergency departments in hospitals, or performed in the ambulatory sector (excluded are day ad inpatient cases in hospitals).
Break in time series:
- 2009: Data were initially not coded by ICD-9-CM, but by a particular Austrian catalogue of procedures, compiled by the Austrian Ministry of Health. In 2009, a new catalogue of procedures came into force. Data have been converted by an expert from the Ministry of Health.
- 2017: In 2017 a new scoring model for outpatient services in hospitals has been implemented gradually. After a transition period for 2017/2018 the effect will become fully visible with mandatory application in 2019. Data already show a first shift to outpatient care in 2017. The new scoring model applies to a specific segment of medical services (including tonsillectomy). However, most of these services have been provided in a day clinic setting so far.

Belgium

Source of data: The **Federal Public Service of Health, Food Chain Safety and Environment**, DG1 Organisation and Planning, Data management. Also available at **INAMI** (Institut National d'Assurance Maladie-Invalidité).
Reference period: During the year.
Coverage:
- Only one procedure code for each procedure category counted during each stay.
- Data based on ICD-9-CM until 2014, and on ICD-10-PCS from 2016 onwards.
Break in time series: 2009 and 2016.

- *Laparoscopic repair of inguinal hernia*: till 2007, data obtained on the basis of the procedure code 54.21 (laparoscopy) with 53.0 and 53.1. From 2009: based on the procedure codes 17.1 and 17.2 which didn't exist before this year. No codes 17.1 or 17.2 yet in our database for the year 2008. Notice that the year 2008 is a year of new registration system for Belgium. The increase in 2009 is explained by a better registration with the new codes 17.1 and 17.2 specific for the pathology.
- Since 2015 Belgium works with the ICD-10-BE codification for procedures. As 2015 is a transition year there is no information about the diagnoses or procedures. Data from 2016 are based on ICD-10-PCS codes.

Canada

A) Inpatient surgeries
Source of data:
- **Statistics Canada**, *Hospital Morbidity Database* until 1993-94.
- **Canadian Institute for Health Information**, *Discharge Abstract Database* and *Hospital Morbidity Database* starting in 1994-95 for all surgical procedures except for kidney transplantation. *Canadian Organ Replacement Register* (CORR) for kidney transplantation.
Coverage:
- The data are for acute care hospitals only.
- Data are on a fiscal year basis (April 1st to March 31st).
- All ten Canadian provinces are included for all years. In 1994/95 one territory is included while from 1995/96 onwards all territories are included, except in 2002/03 when the territory of Nunavut is excluded.
- The data are reported as per the Canadian Classification of Procedures (CCP) until 2000/01. In 2001/02, five provinces and one territory provided their data, for the first time, according to the Canadian Classification of Interventions (CCI), and in 2002/03 two more provinces and two more territories reported according to CCI. In 2003/04, only Manitoba and Quebec did not submit their data according to CCI. In 2004/05, Manitoba adopted the CCI, and Quebec did the same in 2006/07. The total count in provinces that still reported according to CCP, for each procedure, was added to the count for the provinces and territories that reported according to CCI. In general, CIHI does not recommend adding CCP and CCI data due to comparability issues related to changes in code definitions and coding directives. However, the surgical categories were deemed broad enough by CIHI classification specialists for their addition to result in fairly accurate national totals.
- In addition to interventions performed at the hospital where an inpatient was admitted, percutaneous coronary intervention (transluminal coronary angioplasty) also includes interventions performed outside the hospital where a patient was admitted. Such an intervention is recorded by the admitting hospital as an out-of-hospital (OOH) intervention. For example, when the patient of a non-cardiology hospital is sent to a cardiology hospital for a percutaneous coronary intervention, the intervention is recorded by the non-cardiology hospital as an OOH intervention.
- Except for transluminal coronary angioplasty, out-of-hospital interventions are specifically excluded from all categories starting in 2001/02. Data before 2001/02 may include some out-of-hospital interventions as there was no OOH indicator in the Hospital Morbidity Database prior to 2001/02.
- There are no counts for laparoscopic appendectomy, laparoscopic repair of inguinal hernia and laparoscopic hysterectomy for 1999/2000 to 2000/01 as data on 'Intervention Suffix' was not captured in the Hospital Morbidity Database before 2001/02.
- There is no count for secondary hip replacement before 2000/01 as CCP codes for this category did not exist.
- Interventions that were invalid, cancelled, abandoned, or performed outside of the reporting hospital were excluded.
- Records with invalid length of stay were included. Records with invalid/unknown gender and/or age were included.
- Kidney transplantations include transplantations in combination with other organs.
Break in time series due to a difference in methodology:
- There is a break in the series in **1994/95**. Until 1993/94, only the principal intervention was counted (the most significant surgery during the patient's stay). Starting 1994/95 and until 1998/99, all surgical interventions are counted, including secondary interventions. From 1994/95 to 1998/99, an intervention does not need to be the most significant surgery during the patient's stay in order to be counted. An intervention is counted if it is recorded as any of up to ten interventions listed on the discharge abstract in CCP and up to twenty procedures in CCI. Therefore,

when two interventions or more were performed during a patient's stay, two or more interventions were counted (up to a maximum of ten in CCP and up to a maximum of twenty in CCI).

- There is a break in the series in **1999/2000**, due to a revised method of counting interventions. Starting in 1999/2000, for all provinces/territories, counts for each intervention category are based on the number of abstracts (hospital medical records of patients) that have at least one intervention of the selected category listed on the abstract.

- There is a break in the series in **2001/02**. Inpatient cases before 2001/02 may include out-of-hospital cases as there was no out-of-hospital indicator in the Hospital Morbidity Database before 2001/02. Starting in 2001/01, out-of-hospital cases are specifically excluded from the submission.

- In 2013, data were updated since 1999/2000.

B) Day surgeries
Source of data:
- **Canadian Institute for Health Information**, *Discharge Abstract Database* (DAD), 1999/2000 to 2021/2022, for all provinces and territories except Quebec and Alberta in all years, Nunavut in 2002/03, Ontario starting in 2003/04, and two facilities in Nova Scotia starting in October 2003 and a third facility starting in April 2005. *Hospital Morbidity Database* (HMDB) for Quebec data starting in 2006/07. *Alberta Ambulatory Care Reporting System* (AACRS) for Alberta data from 2006/07 to 2009/10. *National Ambulatory Care Reporting System* (NACRS) for Ontario data starting in 2003/04 and Alberta starting in 2010/11, and for two facilities in Nova Scotia starting in October 2003 and a third facility starting in April 2005.
- **Ministère de la Santé et des Services sociaux du Québec** for Quebec data before 2006/2007.
- **Alberta Department of Health and Wellness** for Alberta data before 2006/2007.
Coverage:
- Number of day surgeries in acute care hospitals. Alberta Department of Health and Wellness, AACRS and NACRS also capture data from clinics.
- Counts for each intervention category are based on the number of abstracts (hospital medical records of patients) that have at least one intervention of the selected category listed on the abstract.
- Interventions that were invalid, cancelled, abandoned, or performed outside of the reporting hospital were excluded.
- Records with invalid/unknown gender and/or age were included.
- Starting in 2001/02, data for Alberta also include day surgeries, mostly cataract surgeries, in clinics (outside hospitals). In 2001/02, there were 7647 non-hospital based cataract surgeries in Alberta. The data were reported as per the Canadian Classification of Procedures (CCP) until 2000/01.
- In 2001/02, five provinces and one territory provided their data, for the first time, according to the Canadian Classification of Interventions (CCI), and in 2002/03 two more provinces and two more territories reported according to CCI. In 2003/04, only Manitoba and Quebec did not submit their data according to CCI. In 2004/05, Manitoba adopted the CCI, and Quebec did the same in 2006/07. The total count in provinces still reporting according to CCP, for each procedure, was added to the count for the provinces and territories that reported according to CCI. In general, CIHI does not recommend adding CCP and CCI data due to comparability issues related to changes in code definitions and coding directives. However, the surgical categories were deemed broad enough by CIHI classification specialists for their addition to result in fairly accurate national totals.
- In fiscal year 2001/02, one day-surgery facility in Prince Edward Island did not submit discharge data to CIHI. This facility submits approximately 7000 day-surgery discharges to the DAD each year.
- The day surgery data for Manitoba before 2004/05 are not fully comprehensive as only the major hospitals in that province reported data. The national total before 2004/05 is therefore slightly under-estimated.
- Effective April 1st, 2003, the Ontario Ministry of Health and Long Term Care mandated a NACRS abstract be submitted for every ambulatory care patient receiving service from a select list of Management Information System (MIS) Functional Centers considered surgical day/night care. Prior to this date, Ontario's day surgery cases were reported to the DAD. This change has an impact on longitudinal analyses by making it difficult to compare Ontario's surgical day/night care cases in NACRS with Ontario's day surgery cases in the DAD.
- The reported NACRS data on day surgeries are meant to include only interventions in day/night care functional centers. However, before 2009/2010, intervention codes 1.IJ.50 (Dilation, coronary arteries) and 3.IP (Diagnostic Imaging Interventions on the Heart with Coronary Arteries) were incorrectly coded by some Ontario hospitals under the surgical day care MIS functional center rather than under the cardiac catheterisation (transluminal coronary

angioplasty) functional centre. For example, in 2008/2009, one hospital in Ontario submitted 1,743 records with intervention code 3.IP.10.VX (Combined left and right heart catheterisation) coded under surgical day care. This problem may also have existed in earlier fiscal years. As of 2009/2010, these CCI codes are correctly coded under the cardiac catheterisation functional center by all Ontario hospitals.
- On October 1st, 2003, two facilities in Nova Scotia also began reporting their day surgery cases to NACRS. Hence, for the first six months of fiscal year 2003/04, day surgery data from these facilities were extracted from the DAD, while for the rest of the fiscal year day surgery data were extracted from NACRS. A third facility in Nova Scotia began reporting to NACRS in April 2005.
- Alberta started reporting to NACRS in 2010–2011.
- Day surgery data for the new categories introduced in the 2013 update are shown only starting in 2006/2007 as comprehensive national day surgery data are only available since 2006/2007 in the clinical administrative databases of CIHI.
- Counts lower than 5 are shown as 0 as per the privacy standards of the Canadian Institute for Health Information.

C) Outpatient surgeries
- Data are not available.

Chile

Source of data: **Ministry of Health (MINSAL)**, Department of Health Statistics and Information (DEIS). Administrative registry from public health sector through the Monthly Statistical Summary (REM, Resumenes Estadísticos Mensuales). REM are consolidated at a central level in DEIS in the MINSAL.
The source for the private sector information is the **Health Superintendence** (http://www.supersalud.cl).
Coverage:
- Data coverage is nationwide.
- Annual periodicity.
- Data include both public and private sectors.
- All procedures are coded following the payment-code established by the National Health Fund called "arancel FONASA".
- Only one code is reported per procedure category for each patient (e.g. a cataract surgery performed on the two eyes is counted as one procedure).
- From 2010, figures not available yet for Stem cell transplantation.
- From 2010, data for Hospital discharges in public and private centers for Cataract surgery, Tonsillectomy, Appendectomy, Cholecystectomy, Laparoscopic cholecystectomy, Kidney transplantation, Hysterectomy, Caesarean section, Hip replacement, Total knee replacement, Partial excision of mammary gland and Total mastectomy.
- From 2010, data for Hospital discharges in public and private centers and REM for Transluminal coronary angioplasty, Coronary artery bypass graft, Repair of inguinal hernia and Open prostatectomy.
- For Transurethral prostatectomy, data from 2010 onwards refer to surgical interventions in the public sector.
Note for 2016 data: Data are reported for procedures whose source of information corresponds to hospital discharges. Data are not available for procedures whose source of information is Monthly Statistical Record (REM, aggregated data: no information for 2016 yet).
Cataract surgery: In 2019, the source has been modified and the data have been recalculated from 2009 to 2015. The source from 2019 is "hospital discharges" and Registros Estadísticos Mensuales "REM".
Note: The year 2021 is preliminary, so it is subject to modifications.

Colombia

Data not available.

Costa Rica

Source of data: Área de Estadística en Salud, **Caja Costarricense de Seguro Social** (Health Statistics Unit, National Social Insurance Fund).
Coverage: It includes data coming only from public facilities belonging to the Social Insurance.

Czech Republic

Source of data: **Institute of Health Information and Statistics of the Czech Republic**.

Cataract surgery
Source of data: **National Registry of Reimbursed Health Services**.
Coverage: Patients operated on both eyes in one day are counted once. Patients operated on both eyes but on different days are counted twice.
- In 2020, newly created codes for cataract surgery have been added
Deviation from the definition: Inpatient cases refer to all discharged from bed care departments due to difficulties to separate day cases (the percentage of cases with the same date of admission and discharge was about 4 % on average with huge fluctuation between years).

Tonsillectomy
Source of data: **National Registry of Reimbursed Health Services**.
Coverage: population-based data, number of procedures.

Transluminal coronary angioplasty
Source of data: **National Cardiovascular Interventions Register**.
Coverage: Number of carried out percutaneous coronary interventions. Only one code per procedure is counted (an angioplasty with the placement of a stent is counted as one procedure).

Coronary artery bypass graft
Source of data: **National Cardiosurgical Register**.
Coverage:
- Number of carried out Aortocoronary bypasses (ACB).
- Until 1997, combined procedures were included except ACB+valve. Since 1998, all procedures combined with ACB have been included. In the case of combined procedures (e.g. ACB+valve), only one procedure is counted.

Stem cell transplantation
Source of data:
- **Czech National Hematopoietic Stem Cell Transplantation Registry**.
- **European Group for Blood and Marrow Transplantation** (EBMT): Annual EBMT activity survey
(https://www.ebmt.org/registry/transplant-activity-survey).
Coverage:
- Data from all 10 transplant centres in the Czech Republic.
- Data available annually since 1993.
- Include bone marrow (BM) transplants and transplants of hematopoietic stem cells collected from peripheral blood (PBSC). The numbers are counts of all transplants of BM or PBSC performed in the year (allogeneic + autologous transplants, first transplants, additional transplants and re-transplants together).
- From 1993 until 1996, additional transplants and re-transplants were not explicitly stated in surveys.

Appendectomy, Laparoscopic appendectomy
Source of data:
- Until 2009: **National Registry of Hospitalised Patients**.
- Since 2010: **National Registry of Reimbursed Health Services (NRRHS)**.
Coverage: Until 2009, number of hospitalisations during which an appendectomy was performed as the main surgical procedure. Since 2010, number of all appendectomies is reported.
Break in time series: 2010. In 2019, the estimated numbers of appendectomies in 2010–2016 were updated based on NRRHS data.

Cholecystectomy, Laparoscopic cholecystectomy
Source of data: **National Registry of Reimbursed Health Services**.
Coverage: population-based data, number of procedures.

Repair of inguinal hernia, Laparoscopic repair of inguinal hernia
Source of data: **National Registry of Reimbursed Health Services**.
Coverage: population-based data, number of procedures.

Transurethral prostatectomy, Open prostatectomy
Source of data: **National Registry of Hospitalised Patients**.
Coverage: Number of hospitalisations during which a transurethral prostatectomy/open prostatectomy was performed as the main surgical procedure.

Hysterectomy, Laparoscopic hysterectomy
Source of data: **National Registry of Hospitalised Patients**.
Coverage: Estimate of number of hospitalised women with hysterectomy reported at least once among the observed procedures.

Caesarean section
Source of data:
- Until 1993, statistical statement **"Ambulatory and Bed Care of Woman"**.
- From the year 1994, **National Registry of Mothers at Childbirth** (from 1994 to 2001 called Information System on Mothers at Childbirth).
Break in time series: 1994, due to different mode of data collection.
- Only estimate for the year 1992.

Hip replacement, Knee replacement
Source of data:
- Until 2018: **National Registry of Hospitalised Patients**.
- Since 2019: **National Registry of Reimbursed Health Services**.
Coverage: Number of hospitalisations during which a total or partial hip/knee replacement or revision of the hip/knee replacement was performed as the main operation procedure. New DRG codes were used to identify cases.
Break in time series: 2019. Data for hip and knee arthroplasties are not estimated from 2019 and are taken from another registry National Registry of Reimbursed Health Services where new diagnostic markers are reported for these operations.

Partial excision of mammary gland, Total mastectomy
- Numbers are not reported due to ambiguous coding system. It is not possible to distinguish partial mastectomy from total mastectomy.

Denmark

Source of data: **The Danish Health Data Authority**, The National Patient Register.
Coverage:
- Surgical procedures in Denmark are translated from the Nordic Classification Codes (NOMESCO codes).
- Only surgical procedures carried out in hospitals (private and public, inpatient or ambulatory) are included, which means that surgical procedures carried out by specialists in the primary sector are excluded.
- Only one code is reported per procedure category for each patient.
- The decrease in the number of surgical procedures in 2008 was caused by a national strike which lowered the number of procedures that could be performed.
- Data on hysterectomy only cover vaginal hysterectomy. (Only code KLCD10 is used).
- *Inpatients*: From 2010 an inpatient is defined as a stay with a duration of minimum 12 hours.
- *Day cases*: A day case is defined as a stay that starts and ends the same day.
Break in time series:
- The coding system was changed to a new version in 1996, which explains the break for certain series in 1996.
- 2010. From 2010 an inpatient is defined as a stay with a duration of minimum 12 hours. Furthermore, a day case is defined as a stay that starts and ends the same day.

- From 2019 there was a transition to a new database system; in 2022, data were therefore updated from 2010 onwards to improve comparability across time.
- 2021: The number of Hysterectomies now include all hysterectomies and not just Vaginal Hysterectomy. Previous years are only number for Vaginal Hysterectomies.

Estonia

Source of data:
- *All procedures* (except caesarean sections): Mostly **National Institute for Health Development (NIHD)**, Annual statistical report of healthcare providers. www.tai.ee.
For stem cell transplantation, coronary artery bypass graft, hip replacement, total knee replacement, **the Health Insurance Fund (EHIF)** data is used.
For tonsillectomy, laparoscopic appendectomy, laparoscopic repair of inguinal hernia, laparoscopic hysterectomy, estimations both NIHD and EHIF data is used.
- *Caesarean sections*: **Estonian Medical Birth Registry, National Institute for Health Development**.
Reference period: Calendar year.
Coverage:
- Both public and private sector are included. Foreigners are included. EHIF's data covers insured persons and emergency surgery.
Deviation from the definition:
- The list of procedures used may differ from needed procedures.
- The Estonian version of NOMESCO Classification of Surgical Procedures v 1.6 (NCSP-EE) was in use for 2003-2009, the 2010 version since 2010, 2016 version since 2016, 2018 version since 2018. Influence of the deviations is assessed based on the Estonian Health Insurance Fund surgical procedures statistics. Data with detected deviation more than 10% are marked with 'D'.
Cataract surgery: Distribution between day cases and outpatient cases depends on the financing agreements and should be analysed together.
Repair of inguinal hernia: Overestimation is about 3-4% (from bilateral operations) in 2015. Since 2017 not overestimated.
Hysterectomy: Overestimation because of larger selection of codes is about 1% in 2015 data. Not overestimated since 2017.
Caesarean section: data are from **Estonian Medical Birth Registry** and not registered by NCSP.
Partial excision of mammary gland: HAB40, 99. Only Wedge excision of mammary gland is included, this causes underestimation about 3-5% of inpatient cases and approximately 10% of day care cases in 2015 data. Since 2017 overestimation does not exist.
Break in time series for day cases: 2005.
- Before 2005, only hospital's day care (or day surgery) departments were included; day cases in hospital policlinics were excluded.
- Since 2005, "day cases" include all day cases of HP1 (Cataract and tonsillectomy- all HP).
- In 2003 and 2004, outpatient cases (i.e. outpatient cases and day care cases of ambulatory institutions – including hospital policlinics) for cataract surgery are presented as day care cases together with hospitals day surgery departments' data.

Finland

Source of data: **THL Finnish Institute for Health and Welfare**, Care Register for Institutional Healthcare and **Social Insurance Institute** (KELA): Reimbursements on the use of private healthcare services (since 2006).
- 1990-1996: Nordic short list of surgical operations (1989) and Finnish classification of surgical operations (1983).
- From 1997 onwards: NOMESCO classification of surgical operations (1996).
- *Caesarean section*: **THL** data from the Medical Birth Register since 1990.
- *Coronary angioplasty*: **Finnish Heart Association**, Heart Operation Register, 1998.
Coverage:
- Data include both in-patient and day surgeries.
- Data include all procedures, but only one code per procedure category is counted for each patient.

- Reimbursements on the use of private healthcare services: Cases treated in private healthcare, mainly outpatient care outside hospital (*cataract surgery* and *tonsillectomy*).
<u>Break in time series</u>:
- "Cataract surgery": 2000 (inclusion of outpatient cases); 2002 (exclusion of outpatient cases).
- "Cataract surgery" and "Tonsillectomy": 2006 (inclusion of outpatient cases).

France

<u>Source of data</u>: **Ministère des Solidarités et de la Santé - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques** (DREES), Sous-Direction de l'Observation de la Santé et de l'Assurance maladie, Bureau des Établissements de santé. National discharges databases from the "programme de médicalisation des systèmes d'information (PMSI)" managed by the national agency called « ATIH ». Calculations were performed by the French **Ministère des Solidarités et de la Santé**, **DREES** (Direction de la recherche, des études, de l'évaluation et des statistiques).
In PMSI, surgical procedures are coded according to the French procedures classification:
- From 2006 onwards: Classification commune des actes médicaux "CCAM".
- 2001-2005: CdAM96 and CCAM.
- 1997-2001: CdAM96.
<u>Reference period</u>: calendar year.
<u>Coverage</u>:
- The French data cover residents in metropolitan France and DOM/overseas departments (Guadeloupe, Martinique, French Guyana and Réunion Island and from 2015 Mayotte), who were hospitalised in public and private hospitals of the same area. Residents of foreign countries are excluded except in 1997.
- The statistical unit is the stay. Stays include complete and day-care hospitalisation, excluding patients coming for iterative treatments sessions.
- The number of surgical procedures corresponds to the number of **acute care stays** involving such procedures in public and private health establishments in France (metropolitan and DROM, i.e. overseas departments). These procedures are realised in units delivering acute care in medicine, medical specialties, surgery, surgical specialties, gynaecology and obstetrics (MCO).
- When the same procedure is carried out several times during the same hospital stay, it is counted only once. (But when different procedures have been performed during the same hospital stay, this stay is counted for each distinct procedure category.)
- Surgical procedures are coded in accordance with the French procedures classifications: **Classification commune des actes médicaux** (CCAM) since 2006.
- For each of the procedures, day cases were collected only when they represented 0.5% or more of the total. Below that threshold, they were considered as coding errors and deleted.
- Outpatient cases are not allowed in France for cataract surgery and tonsillectomy, and thus are equal to 0.
<u>Deviation from the definition</u>: *Knee replacement* includes uni, bi and tri compartmental knee prostheses.
<u>Break in time series</u>:
- As of 2009, army hospitals have been included.
- From 2015, Mayotte has been included.

Germany

<u>a) and b) Inpatient cases and day cases</u>

2005-2021:
<u>Source of data</u>: **Federal Statistical Office**, DRG-statistics 2021 (Diagnosis Related Groups, diagnoses and procedures of full-time patients in hospitals), special evaluations by the Federal Statistical Office.
See http://www.destatis.de or http://www.gbe-bund.de.
<u>Reference period</u>: During the year.
<u>Coverage</u>:
- DRG-statistics extend to all hospitals, which settle accounts according to the DRG-compensation system and which are subject to the scope of application of §1 KHEntgG. Facilities typically outside of the field of application

of the new pay programme are primarily psychiatric and psychotherapeutic facilities, providing care to patients who undergo psychiatric and psychotherapeutic treatment.

- Hospitals are to code all significant operational interventions and medical procedures which are made from the time of the admission of a patient up to the time of the discharge and which are represented in the official code of operations and procedures (OPS). A significant procedure is a procedure that is either surgical in nature, involves an interventional or anaesthetic risk, or requires special facilities, special equipment or special training. For the illustration of complex procedures and partial measures a coding of operations with multiple codes is provided in different areas. Furthermore, the provision of intraoperative complications is to encrypt separately.

- For the purpose of international comparisons, the Federal Statistical Office has developed a new method for counting procedures in the DRG-Statistics. According to this it is possible to count only *one code per procedure category* for each patient. This applies to inpatients cases as well as to day cases.

- The official version of the operations and procedures key valid in the respective reporting year is relevant (OPS). The classification is published and provided by the German Institute of Medical Documentation and Information (DIMDI) pursuant to §§ 295 and 301 SGB V on behalf of the Federal Ministry of Health. In the data evaluation for reporting year 2021 the following OPS Version 2021 codes were considered:

ICD-9 CM (1996/2006/2013)	Common surgical procedures	OPS Version 2021
13.1--13.8	Cataract surgery	5-142--5-147; 5-149
28.2--28.4	Tonsillectomy	5-281; 5-282
36.01, 36.02, 36.05 (1996), 00.66 (2006)	Transluminal coronary angioplasty	8-837.0, .1, .k, .m, .p, .q, .u, .v, .w
36.1	Coronary artery bypass graft	5-361; 5-362; 5-363.4
41.0	Stem cell transplantation	5-411; 8-805
47.0, 47.1	Appendectomy	5-470; 5-471; 5-479.1
47.01, 47.11	Laparoscopic appendectomy	5-470.1; 5-471.1
51.22, 51.23	Cholecystectomy	5-511
51.23	Laparoscopic cholecystectomy	5-511.1; 5-511.5
53.0, 53.1	Repair of inguinal hernia	5-530
17.1, 17.2 (2013)	Laparoscopic repair of inguinal hernia	5-530.31, .32, .71, .72, .90, .91, .9x
55.6	Transplantation of kidney	5-555
60.3--60.6	Open prostatectomy (excludes transurethral)	5-603; 5-604
60.2	Transurethral prostatectomy	5-601
68.3--68.7; 68.9	Hysterectomy	5-682; 5-683; 5-685
68.31, 68.41, 68.51, 68.61, 68.71 (2006)	Laparoscopic hysterectomy	5-682.02, .12, .21, .x2; 5-683.03, .13, .23, .43, .x3
81.51--81.53	Hip replacement	5-820; 5-821.1--5-821.6, .f, .g, .j
74.0--74.2; 74.4; 74.99	Caesarean section	5-740; 5-741; 5-749.1
00.70--00.77, 81.53 (2006)	Secondary hip replacement	5-821.1--5-821.6, .f, .g, .j
81.54	Total knee replacement	5.822.0, .9, .f, .g, .h, .j, .k; 5-823.1, .2, .4, .b, .f, .h, .k
85.20--85.23	Partial excision of mammary gland	5-870
85.33--85.36; 85.4	Total mastectomy	5-872; 5-874; 5-877

- Additional data on the ambulatory sector are not counted in official statistics.

- Data before 2005 is not available.

Break in time series: 2010, for cataract surgery and tonsillectomy. As of reporting year 2010, the inpatient cases for these two procedures include not only the data from the DRG- statistics but also inpatient treatment cases of affiliated doctors, which are received as a special evaluation from the National Association of Statutory Health Insurance Physicians.

Additional information:

- In the German DRG-statistics, all accomplished operations and procedures are counted (including several operations and procedures per patient). Therefore the total number of operations and procedures in German publications is higher.

1991-2004 (caesarean section):
Source of data: **Federal Statistical Office**, Hospital Statistics (basic data of hospitals), Statistisches Bundesamt, *Fachserie 12, Reihe 6.1.1*, table 2.15.1.
See http://www.destatis.de or http://www.gbe-bund.de.
Reference period: During the year.
Coverage: Number of deliveries by caesarean section in general hospitals. Data on caesarean section include only inpatient cases; day cases are excluded.

c) Outpatient cases

Source of data: **National Association of Statutory Health Insurance Physicians**, EBM statistics, special evaluations by the National Association of Statutory Health Insurance Physicians.
Reference period: During the year.
Coverage:
- The outpatient cases are about the number of outpatient cases accounted for by SHI-accredited physicians.
- The evaluation of the National Association of Statutory Health Insurance Physicians was aligned with the data which it has submitted to the International Association for Ambulatory Surgery (IAAS).
- Data before 2010 are not available.

Additional information:
For Germany no data is available for:
- privately insured outpatient cases,
- for patients treated in hospitals for ambulatory procedures according to §115b SGB V,
- for cosmetic surgery and
- for patients treated in specialised hospitals for work accidents which are insured in the Statutory Accident Insurance.

Greece

Source of data: **National Statistical Service of Greece**. **Ministry of Health, Welfare,** and **The Hellenic Transplant Service**.
- Transluminal coronary angioplasty: data for the years 2006-2009 are derived from **Hellenic Cardiological Society** (**WWW.HCS.GR**) through a National Web Base Record.
Reference period: calendar year.
Coverage:
- Data include both inpatient and day surgeries.
Break in time series: 2013. The data process was sampled until 2012 due to the large amount of data and limited resources, leading to an overestimation. Moreover, from 2013 has changed from sampling to census.

Hungary

Source of data:
- From 2004 to 2020: **National Healthcare Service Center** (ÁEEK in Hungarian), based on itemized data of the inpatient care finance report submitted by the health insurance fund. www.aeek.hu.
- From 2021, **National Directorate General for Hospitals** (OKFŐ in Hungarian), based on itemized data of the inpatient care finance report submitted by the health insurance fund. www.okfo.gov.hu.
Coverage:
- Number of **hospital cases** at which an intervention belonging to the given medical intervention group had been reported.

- Only one code is reported per procedure category for each patient.
- In the number of surgeries, all types of surgeries - like major surgeries, additional surgeries and surgeries due to complications - are included.
- *Day case*: Hospital case where the date of admission and the date of discharge are identical, and where the medical intervention performed during the stay appears on the list of allowed day case interventions. Patients who passed away on the day of admission are always counted among inpatient cases.
Estimation method: The data are calculated from the itemised data of the inpatient care finance report submitted by the health insurance fund.

Iceland

Source of data: **Directorate of Health and Icelandic Health Insurance**.
- Inpatient cases in hospitals, except cataract surgery: Hospital Discharge Register.
- Day cases in hospitals, except cataract surgery: Hospital Discharge Register.
- Day cases in private practice, except cataract surgery: Icelandic Health Insurance (IHI).
- Cataract surgery: Special data request carried out by the Directorate of Health.
Coverage:
- As of 2011: Data cover procedures performed on inpatients and outpatients at all state-funded facilities which correspond to SHA category HP.1.1, as well as procedures carried out at private clinics (SHA HP.3.1) with contracts with Icelandic Health Insurance.
- Before 2011: Data cover procedures performed on inpatients at all state-funded facilities corresponding to SHA category HP.1.1.
- Classification system: NOMESCO Classification of Surgical Procedures (NCSP) used as of 1997.
Break in time series:
a) 2011: Previously only figures for inpatient procedures were submitted. Figures submitted in 2019 contain updates all the way back to 2011 and these consist of figures both for inpatients and outpatient/day cases.
b)2009. Up to 2008 data were limited to main procedures. From 2009 onwards, the following principles are used to count procedures:
    (1) All procedures per stay are counted, not only main procedures.
    (2) If there is more than one procedure code for the same stay (patient) from the same group of procedures, only one is counted. If those codes come from separate procedure groups then both are counted (one for each group).
    (3) If a patient has more than one stay within the year and has the same codes on both occasions, both are counted.
Note:
- The count is based on the number of procedures, i.e. if a patient has two procedures from a specific procedure category in one year then both procedures are counted.
- Data on **cataract** operations come from a special data request. Figures for years 2015 and 2016 refer to 12 month periods 1.2.2015 - 31.1.2016 and 1.2.2016 - 31.1.2017 respectively.

Ireland

Source of data:
- The data presented for all listed procedures are derived from the HIPE (Hospital In-Patient Enquiry) data set, which records data on discharges from all publicly funded acute hospitals. HIPE is operated by the **Healthcare Pricing Office** (www.hpo.ie). Refer to following section for information on Caesarean Section procedure.
- From 2020, data from private hospitals is sourced from a self-completion survey issued to acute private hospitals in Ireland.
Reference period: Calendar year.
Coverage:
- HIPE data cover all in-patient and day cases receiving curative and rehabilitative care in publicly funded acute hospitals in the state.
 - For historical reasons, a small number of non-acute hospitals are included in HIPE. This activity represents less than 0.5% of total activity in HIPE.

- The NHDDB does not include private hospitals. Detailed activity data for private hospitals is not available, however based on the Health Ireland Survey 2018 it is estimated that approximately 25 % of all hospital inpatient activity in Ireland is undertaken in private hospitals. It should be emphasized that this is an estimate only and so should be interpreted with caution.
- Data for Psychiatric in-patients and day-cases receiving curative and rehabilitative care in specialist psychiatric hospitals (HP.1.2) have not been included. They are maintained on a separate database which uses ICD 10 for coding diagnosis and also includes long-stay patients. This activity accounts for approximately 2% of all Irish hospital activity. Psychiatric patients in acute general hospitals are recorded in HIPE.
Estimation method:
- A day case is defined as a patient who is formally admitted with the intention of discharging the patient on the same day, and where the patient is in fact discharged as scheduled (i.e. excluding deaths and emergency transfers) on the same day. Patients who are admitted or discharged as emergencies on the same day are considered inpatients.
- In accordance with the guidelines, only one code per procedure category for each patient is reported.
- Up to four procedures may be recorded in HIPE for data to the end of 2001. From 2002-2004, records may contain up to 10 procedures. HIPE data for 2005 onwards may contain up to 20 procedures.
- The Hospital Data Project 2 provided a mapping of the procedure shortlist to ICD-10-AM ACHI, which we have used to report the data above.
- Data are not available for Laparoscopic repair of inguinal hernia and Laparoscopic hysterectomy prior to 2005, as the versions of the ICD-9-CM classification used during this time did not include specific codes for these procedures.
- Data are not available for Laparoscopic Appendectomy prior to 1999 as October 1994 version of ICD-9-CM did not include specific codes for this procedure.
- Note that in ICD-10-AM it is not possible to distinguish between bone marrow and stem cell transplants. Therefore, the data supplied for bone marrow transplants from 2005 also include stem cell transplants.
- Note that in public hospitals, all cataract and tonsillectomy procedures would involve the patient being formally admitted to the hospital as either an inpatient or a day case. Therefore there are no outpatient cases for these procedures.
Break in time series:
- From 2020, data includes procedures carried out in acute private hospitals in Ireland, based on a self-completion survey.
- Data for 1995-2004 were classified using ICD-9-CM. All HIPE discharges from 2005 are now coded using ICD-10-AM (the Australian Modification of ICD-10 incorporating the Australian Classification of Health Interventions). The change from ICD-9-CM to ICD-10-AM has resulted in some minor changes in the classification of diagnoses and procedures. This means for certain categories comparisons of data between years can be difficult.

***Caesarean Sections*:**
Source of data: Data on Caesarean Sections are derived from the HIPE from 2014. Previous to this information was reported from the **National Perinatal Reporting System** (https://www.hiqa.ie/areas-we-work/health-information/data-collections/national-perinatal-reporting-system-nprs).
Reference period: Calendar year.
Coverage:
- All public acute hospitals in Ireland.
- Pre-2014: The figures reported are based on the number of maternities with caesarean section delivery. In accordance with WHO reporting criteria births weighing less than 500 grams are excluded. Further information can be found on www.hpo.ie.
Break in time series:
- From 2020, data includes procedures carried out in acute private hospitals in Ireland, based on a self-completion survey.

Israel

Source of data: Data reported are based on various data sources in the Ministry of Health:
   (a)   The **National Hospital Discharge Database,** maintained by **Health Information Division in the Ministry of Health.** It includes most acute care hospitals as well as some special hospitals. The diagnoses

and procedures are coded according to the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM). Patients who were admitted and discharged on the same date were defined as day cases.

(b)   The Perinatal Database, maintained by **Health Information Division in the Ministry of Health.** It includes all live births in Israel.

(c)   Outpatient procedures are based on specific reports from community clinics.

Coverage: The data include most (97%) of acute care hospitalisations. Day cases include patients admitted to hospital and discharged on the same day and patients in day-care wards in hospitals. The information reported is the absolute number of discharges from hospitals who had at least one procedure in each category.

- *Caesarean sections*: The **National Hospital Discharge Database** was used to calculate the proportion of all births by caesarean section, and the Perinatal Database provided the number of births to estimate the total number of sections.

- *Kidney transplants*: Data extracted from the database of the **National Dialysis Registry** at the **Israel Center for Disease Control** (ICDC), **Ministry of Health**. All kidney transplants are performed as inpatient cases.

Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Italy

Source of data:
- **Ministry of Health** - General Directorate of digitalisation, health information system and statistics.
- **Office of Statistics** and **Office of National Healthcare Information System**.
- **Ministry of health – General Directorate of Health Planning**.
- National Hospital Discharge Data Base (NHDDB); Information system for outpatient care monitoring.

Reference period: Year.

Coverage:

Inpatients and day cases:
- The national hospital discharge database (NHDDB) covers all public and private hospitals.
- The number of surgical procedures is calculated by considering both main procedures and secondary procedures. Until 2016 the NHDDB recorded for each discharge up to five secondary procedures; since 2017 the NHDDB records for each discharge up to ten secondary procedures. Data refer to discharges carried out in public and private hospitals (HP.1.1 and HP.1.3 excluding Military hospitals).
- According to the definition, the number of procedures is based on a count of only one code per procedure category for each patient.
- The decreasing trend in the number of cataract surgeries (performed as inpatient or day cases) can be explained by the fact that this kind of surgical procedure can be performed as an ambulatory activity without a formal admission in hospital, neither as an inpatient case nor as a day case.

Outpatients (for cataract surgery and tonsillectomy):
- Data refer to procedures performed in outpatient facilities both public and private accredited by the National Health Service. Procedures provided by private facilities (not accredited by the National Health Service) are not available.
- The following cataract procedure has been considered: 13.19.1 cataract extraction with or without intraocular lens; 13.70.1 Insertion of intraocular lens prosthesis at time of cataract extraction, one-stage; 13.72 Secondary insertion of intraocular lens prothesis; 13.8 Removal of implanted lens.
- In the Italian health system, tonsillectomy is not performed in outpatient setting.

Note: The sharp decrease in the number of surgical procedures for the year 2020 reflects the impact of the COVID-19 pandemic. In 2020, most surgical procedures were performed only for urgent admissions, while planned and non-urgent surgical procedures were postponed.

Deviation from the definition: None

Estimation method:
- Laparoscopic repair of inguinal hernia: National Guidelines about the usage of the ICD-9-CM, adopted in 2010, suggest to use combination of codes for some laparoscopic procedures having no specific codes in ICD-9-CM. In

order to identify Laparoscopic repair of inguinal hernia, the combination of the following codes has been used: "53.0" and "53.1", for repair of inguinal hernia and "54.21" for the laparoscopic surgery.

Break in time series:

- The classification system used for diagnoses and medical/surgical treatments is the ICD-9-CM. Along the time the Ministry of Health has adopted different versions of ICD-9-CM. Since 2001 until 2005, the 1997 version was used; since 2006 until 2008, the 2002 version was used; starting in 2009, the 2007 version was used.

In particular, the following modifications have been introduced:

- Laparoscopic hysterectomy: accounted with reference to codes in ICD-9-CM (2007) since 2009.
- Cataract surgery 2011: National health policies for the period 2010-2012 ("Patto per la salute 2010/2012"), established that outpatient care is a more appropriated setting for cataract procedures. The use of outpatient surgical procedures started in Italy even before official recommendations by National Guidelines; this is possible because Constitutional Law allows Regions to manage health services within their own area of jurisdiction. On the other hand, data collection of procedures at national level, was possible only after National Guidelines adoption. This causes a break in times series of data, between 2006 and 2011, because some part of the activities, provided in this period as outpatient, is not covered in the data. Also, due to the progressive induction in outpatient setting, in 2011 and 2012 there is a partial data coverage for some Regions.

Japan

Stem cell transplantation:

Source of data: Hematopoietic Cell Transplantation in Japan. Annual Report of Nationwide Survey 2021. **The Japanese Data Center for Hematopoietic Cell Transplantation/The Japanese Society for Transplantation and Cellular Therapy**. Further information at http://www.jdchct.or.jp/data/.

Korea

Source of data:

- From 2006: **National Health Insurance Service**, Main Surgery Statistical Yearbook.
- 2004: **National Health Insurance Service**, Unpublished data.

Coverage:

- Surgical procedures in Korea are translated from the medical fee schedule of the National Health Insurance as below.
- Only one code per procedure category for each patient is counted. (Example: in the case of cataract surgery, the removal and insertion of a lens is counted as one procedure).

Break in time series: Due to the re-classification of medical fee schedule by surgery item, there are breaks in time series as noted in the table below.

Changes of Medical Fee Schedule by Surgical Items

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018–2020	2021
1	Cataract Surgery	S5110, S5111, S5112, S5116, S5117, S5118, S5119 (DRG codes: C051, C052, C053, C054)													
2	Tonsillectomy	Q2300, Q2310 (DRG codes: D111)													
3	Transluminal Coronary Angioplasty	M6551, M6552, M6571, M6572, M6561, M6562, M6563, M6564											M6551, M6552, M6571, M6572, M6561, M6562, M6563, M6564, M6565, M6566,	M6551, M6552, M6571, M6572, M6553, M6554, M6561, M6562, M6563, M6564, M6565, M6566, M6567

No.	Procedure					
					M6567	
4	Coronary Artery Bypass Graft	O1641, O1642, O1647, OA641, OA642, OA647, O1640, OA640			O1641, O1642, O1647, OA641, OA642, OA647, O1640, OA640, O1648, OA648, O1649, OA649	
5	Appendectomy	Q2861, Q2862, Q2863 (DRG codes: G081, G082, G083, G084)				
6	Cholecyst–ectomy	Q7380, Q7410				Q7380
7	Repair of inguinal hernia	Q2721, Q2722, Q2731, Q2732, Q2740, Q2753, Q2754, Q2755, Q2756, Q2757, QA753, QA754, QA755, QA756	Q2753, Q2754, Q2755, Q2756, Q2757, QA753, QA754, QA755, QA756 (DRG codes: G095, G096, G097, G098)			
8	Transurethral Prostatectomy	R3975	R3975, R3977			R3975, R3977, R3976, R3516
9	Open Prostatectomy	R3516, R3950, R3960	R3950, R3960	R3950, R3960, RZ512		R3950, R3960, RZ512, RS566
10	Hysterectomy	R4073, R4074, R4143, R4144, R4145, R4146, R4154, R4155, R4183, R4202, R4203, R4221, R4223, R4250, R4427, R4428, R4482	R4073, R4074, R4130, R4143, R4144, R4145, R4146, R4154, R4155, R4183, R4202, R4203, R4221, R4223, R4250, R4427, R4428, R4482 (DRG codes: N041, N042)		R4073, R4074, R4130, R4143, R4144, R4145, R4146, R4154, R4155, R4183, R4202, R4203, R4221, R4223, R4250, R4427, R4428, R4482, R4147, R4148, R4149, R4140, R0141, R0142 (DRG codes: N041, N042)	
11	Cesarean Section	R4507, R4508, R4509, R4510, R5001, R5002, R4514, R4516, R4517, R4518, R4519, R4520	R4514, R4516, R4517, R4518, R4519, R4520	R4514, R4516, R4517, R4518, R4519 R4520, R4507, R4508, R4509, R4510, R5001, R5002 (DRG codes: O016, O017)		
12	Hip Replacement	N0711, N1711, N1721	N0711, N1711, N0715, N1715, N2070, N2710, N3710, N4710			

#	Procedure						
13	Knee Replacement	N0712, N1712, N1722	N2072,N3712,N3722		N2072, N3712, N3722	N2072, N2077, N3712, N3717	N2072, N2077
14	Partial excision of mammary gland			N7121, N7122, N7132, N7133, N7134	N7121, N7122, N7133, N7134		N7121, N7122, N7133, N7134, N7136, N7137
15	Total Mastectomy	N7121, N7122, N7131, N7133, N7134			N7131, N7132, N7135		N7131, N7132, N7135, N7130, N7138, N7139

Note: The DRG codes presented are the latest classification criteria.

Latvia

Source of data: **Centre for Disease Prevention and Control**; Statistical Report.
Reference period: 1st January to 31st December.
Coverage: All hospitals and day care institutions, all procedures.
- *Cataract surgery* includes from 2017: 1) Day cases (data include the number of operations rather than patients); 2) Outpatient cases (data include the number of operations rather than patients).
- *Cholecystectomy* and *laparoscopic cholecystectomy* from 2005 Inpatient cases data include the number of operations. From 2020 all data include the number of patients.
- *Hysterectomy* from 2005 Inpatient cases data include the number of operations. From 2020 all data include the number of patients.
- *Hip replacement* from 2005 Inpatient cases data include the number of operations. From 2020 all data include the number of patients.
- *Total knee replacement* from 2005 Inpatient cases data include the number of operations. From 2020 all data include the number of patients.
- Only one operation/procedure is counted even if in some national classifications it is recorded as two procedures.
Break in time series:
- Starting from 2009 a reform of the healthcare system takes place. The aim of the reform is to facilitate the development of the outpatient sector, widening the range of services provided and their quality. As a result the sector witnesses reorganisation or re-profiling, as well as structural reforms inside enterprises or institutions. E.g., part of hospital beds is changed to day stationary beds.
- Besides, from 2010 payment procedures for out-patient services provided in the day stationary were specified and services provided only in day stationary were determined. Cataract surgery and laparoscopic cholecystectomy is included in this list. Just more specific or complicated cases are treated in hospital as in-patients cases.
- From 2020, all data include the number of patients (except for cataract surgery which refers to the number of operations). Before 2020, data include the number of operations (for cholecystectomy, hysterectomy, hip and knee replacement).

Lithuania

Source of data: **Lithuanian Health Information Centre**, since 2010: **Health Information Centre of Institute of Hygiene**. Report "Health Statistics of Lithuania", available from http://www.hi.lt/health-statistic-of-lithuania.html. Available on Official Statistics Portal of Statistics Lithuania http://osp.stat.gov.lt/en.
- Number of procedures: up to 2005, data from annual summary reports of healthcare institutions; since 2006, data from the Compulsory Health Insurance Fund Information System.
- Number of procedures for day cases: since 2001, data from the Compulsory Health Insurance Fund Information System; up to 2009, the national list of surgical operations was used. Since 2010, the Australian Classification of Health Interventions is used.

Coverage: All procedures (in public or private hospitals) paid by Compulsory Health Insurance Fund (more than 99%). Only one code per procedure category is counted for each patient.
- In 2014 the number of *cataract procedures* as day cases has decreased as more cataract procedures were performed outside hospitals (as outpatient cases).
Estimation method: Since 2001 the number of procedures for day cases (patients admitted and discharged to home on the same day) are calculated from Compulsory Health Insurance Fund Information System.
Break in time series: 2010.
- Break in 2010 due to the change of classification used.
- *Cataract surgery*: the number of outpatient cases is included as of 2010.

Luxembourg

Source of data: **Fichiers de la sécurité sociale**. Data prepared by **Inspection générale de la sécurité sociale**.
Coverage:
- Procedures based on the national classification system "Nomenclature des actes et services des médecins et médecins-dentistes". An attempt was made to come as close as possible to procedures classified in ICD-9-CM.
- Data refer only to the resident population covered by the statutory health insurance scheme and to medical acts performed in Luxembourg and reimbursed by the health insurance.
- Data for 2021 are preliminary.
- It is not possible to discern whether an operation was performed laparoscopically or by conventional surgery. The data for appendectomy, cholecystectomy, hernia, hysterectomy and prostatectomy therefore include all interventions regardless the method of operation.
Break in time series:
- 2002: After revision of the procedures selection and methodological development. Before 2002, the selection includes a number of non-invasive procedures.
- 2020: Total mastectomies for male patients have been included. Data has been revised until 2009.

Caesarean section
Source of data: **Perinatal health monitoring system** in Luxembourg – Directorate of Health and Luxembourg Institute of Health.
Coverage: The number indicated is the total number of caesarean sections for all resident patients where the procedure was performed in Luxembourg and which does not indicate whether the child is born alive.
- The rate should be interpreted carefully seeing as numerator and denominator do not cover exactly the same population: denominator (from STATEC) include all live births from all residents even those that occurred abroad.
Break in time series: 2011. Before 2011, data refer to cases reimbursed to resident patient by the statutory national health insurance.

Mexico

Source of data:
- **National Population Council.** Mexico 2006: Population Projections 2005-2050.
- **National Health and Nutrition Survey** 2006. Ministry of Health. National Institute of Public Health.
- **National Reproductive Health Survey** 2003. Ministry of Health.
- **National Health Survey** 2000. Ministry of Health. National Institute of Public Health.
- **Bulletin of Statistical Information. Ministry of Health** from 1994 onwards.
- 2015-2021 data: Procedures are estimated due to the fact that information is only available from the Ministry of Health.
Coverage:
- The Bulletin of Statistical Information, National Health System, includes all procedures in the ICD-9-CM. 01.01-99.99.
- Data include information on public institutions (MOH, IMSS-Bienestar, Services of the Federal District, IMSS, ISSSTE, PEMEX, SEMAR).
- Data do not include information on private hospitals, state (local) hospitals, university hospital and the Red Cross.
- All hysterectomies are included (68.3), not only vaginal (68.5).

- Counting method: single procedure counted.

Estimation method:

- ***Caesarean section***: An estimation was performed for caesarean sections using data from regular statistics (regular information or regular register) and figures obtained by National Health Surveys. Estimations are made in order to improve recording of C-sections performed in private facilities due to the level of under-reporting of this procedure's data. Comparing both sources of information shows that under-reporting is evident and that C-sections in the private sector represent approximately 33% of the total percentage of caesarean sections in Mexico. Using this figure, the absolute number of caesarean sections in the private sector was estimated and was subsequently added to the number of C-sections performed in public institutions. The result was then divided by the total number of childbirths, as estimated by the National Population Council. For 2007, the absolute number of cesarean sections was estimated using the tendency by series (1994-2006). The data of SEDENA for years 2005 and 2006 were omitted because the last real year available was 2004. The data on Caesarean Section per 1000 live births from 1994 to 2007 have been changed in 2010 because of new estimations of live births from National Council of Population, as a result of the National Count in 2005. From 2008, it was decided to use live birth certificates **(SINAC)** as the source of data, and this was implemented throughout the country starting in September 2007. The implementation involves using the same format (certificate) of live births in all states and in both public and private institutions. The certificate includes information about mother, new born, birth and certifier. SINAC's coverage in relation to the new estimations of live births from National Council of Population for 2008 was 100%.

Break in time series: Data collected until 2000 did not include National Institutes of Public Health.

Netherlands

Figures from 2016 onwards

Source of data:

- From 2016 onwards, the Diagnosis Treatment Combinations Somatic Specialist Care register (DTC-SSC) data used for the figures on surgical procedures are from another source than the DTC-SSC data used for 2012-2015. From 2016 onwards, the DTC-SSC data of the health insurance companies are used (collected by Vektis), because complete datasets are available earlier from this source and because this source now also contains the necessary health activity data for deriving the surgical procedures figures. The type of data is the same as described below for the 2012-2015 figures based on the DTC-SSC data of the Dutch Healthcare Authority. Here only the differences between the two data sources are mentioned.

Coverage:

- The figures include the surgical treatments in Dutch hospitals to both residents and non-residents with a Dutch basic healthcare insurance (compulsory for residents).
- The DTC-SSC data of the health insurance companies (collected by Vektis) have the same coverage as the DTC-SSC data of the Dutch Healthcare Authority except that the Vektis data do not include some small groups with special insurances (military, prisoners and asylum seekers), which comprise approximately 0,3% of the total of DTCs. In addition, DTC-SSC care that is not reimbursed by the Dutch basic healthcare insurance and care to foreigners that do not have a Dutch healthcare insurance is not covered in the Vektis data and may partly be included in the data of the Dutch Healthcare Authority. However, in general the number of surgical procedures that are not covered in the Vektis data compared to the data of the Dutch Healthcare Authority are estimated to be very low.

Deviation from the definition:

- *Hip replacement*: The previously delivered figures for 2016 and 2017 erroneously excluded secondary hip replacements. These figures have been corrected in 2022 and now include all hip replacements.

Estimation method:

- The Vektis data used are approximately complete, so no correction for incompleteness of the register is applied. To derive case types for the surgical procedures the same procedure is used as described below for the DTC-SSC data of the Dutch Healthcare Authority.

- *Total knee replacement*: For the years 2016 and 2017 the number of total knee replacements is estimated. A total knee replacement is defined by the combination of the procedure code for 'prothesis implantation knee joint' and the code for the prosthesis material for a total knee replacement. However, the latter code is not included in the Vektis DTC-SSC data that are used for 2016 and 2017. Previously the figures for 2016 and 2017 were therefore based on the code for 'prothesis implantation knee joint' only, which includes partial knee replacements too. These figures are

now corrected: an estimation of the number of total knee replacements is made by correcting the number of 'prothesis implantation knee joint' procedures in the Vektis data with a factor derived from the DTC-SSC data of the Dutch Healthcare Authority in which both procedure codes are included. From 2018 onwards this correction is not necessary anymore as both procedure codes are then also registered in the Vektis data.

- Transurethral prostatectomy: For all years the derived case-types were corrected: the small number of day cases (derived by the algorithm used) were added to the inpatient cases and the number of day cases was set to zero.

Break in time series: 2005, 2012, 2014.

- The figures up to 2004 originate from previous OECD data deliveries. From 2005 onwards, the figures are based on the present Eurostat/OECD Joint Questionnaire definitions of the surgical procedures. Because of differences with previous OECD definitions, there is a break in most series in 2005. Especially for *hysterectomy* the difference in definition (all hysterectomies from 2005 onwards; and up to 2004 vaginal hysterectomy only) causes a large break in 2005. For *coronary artery bypass graft, cholecystectomy, laparoscopic cholecystectomy, open prostatectomy, caesarean section and total mastectomy*, there is no break in series.

- Figures up to and including 2010 were derived from the HDR and included mainly information received from general and university hospitals. Data from semi-private clinics (independent treatment clinics), most specialised hospitals and rehabilitation centres were not included. The present 2012 figures derived from DTC-SSC, also include the latter establishments. So for procedures that are provided in these establishments (e.g. cataract surgery) a higher number of procedures is counted in the DTC-SSC. Furthermore, the HDR included only information about inpatient and day-care procedures. The DTC-SSC also contains information about outpatients, which Eurostat requests for cataract surgery and tonsillectomy. Lastly, the DTC-SSC includes both main and secondary procedures, while the HDR figures were only based on main procedures. This implies that for procedures that are often non-main procedures a higher number of procedures is counted in the DTC-SSC.

- The new figures from 2012 onwards thus entail a break in time series compared to the previous data, both in terms of methodologies and source. More information about effects on specific procedures can be found in previously provided documents (Action on Health Care Non-Expenditure Statistics, 2015, Annex D Metadata the Netherlands, ESTAT Grant Agreement 07154.2015.002-2015.734).

- There was another break in time series in 2014, because of some changes in the method to assign case type to a procedure (see (1) and (6) above). In general this causes only few differences in case type distribution, with few small shifts to a 'lighter' case type. However, when the percentage of missing case types changes significantly from year to year the distribution of the case types may also change, resulting from the used imputation method. This is for instance the case with cataract surgery that had 4% missing case types in 2014 and 24% in 2015, which caused a large increase in (imputed) outpatient case types, and less day cases. Formerly these records would have been assigned to day case (as this is the most prevalent setting), but with the imputation procedure the most likely case type is assigned for these records.

- Furthermore, the surgical procedure figures for 2014 are also slightly different from the figures delivered earlier because a more recent version of the register has been used.

Figures for 2012-2015:

Source of data:

- From 2012 onwards, data regarding procedures are based on the Diagnosis Treatment Combinations Somatic Specialist Care register (DTC-SSC). Diagnosis Treatment Combinations SSC (DTC-SSC) are DRG-like units that form the payment system of somatic specialist care that is reimbursed by the compulsory basic health insurance. DTCs provide information on diagnosis, specialism, costs, and detailed data on the healthcare activities provided, including surgical procedures and codes indicating in-, day- and outpatient care. One DTC may consist of several case types and several surgical procedures.

- For the years 2012-2015 DTC-SSC data collected by the Dutch Healthcare Authority were used. From 2016 onwards DTC-SSC data of the health insurance companies are used, collected by Vektis (see above).

Coverage:

- Type of hospitals not covered:

  - Military hospitals and private clinics that deliver specialist care that is not covered by the basic health insurance: no data available. The number of inpatients and day cases estimated to be relatively small in these clinics. An indication is the expenditure on specialist-medical care (excluding specialist dental care): from the total of 22.5 billion Euro in 2012 around 0.3 billion euro is to be found in private clinics and the military hospital.

- Independent centres for radiotherapy, haemodialysis and audiology, as they do not register inpatient and day-case settings (chronic haemodialysis is not registered as inpatient or day care, but as a separate activity), and they are not relevant for the surgical procedures concerned.

- The figures include the surgical treatments in Dutch hospitals to both residents and non-residents of the Netherlands.

Deviation/compliance with the definition:

Age

- Age is calculated as age at the 31st of December of the reporting year (2012).

Procedures

- The Eurostat/OECD definitions of the requested procedures are in ICD-9CM procedure codes. However, surgical procedures in the DTC-SSC system are defined in healthcare activity codes according to a national (non-hierarchical) classification system (in Dutch). This classification was previously directly used for financial declaration and is now used to derive – in combination with the diagnosis - the correct DTCs for a certain treatment. For this purpose the healthcare activity codes are often revised.

- The healthcare activities consist of all sorts of activities (for example a registration of day care, blood analysis, a surgical procedure) and for each the date of the activity is registered. For most surgical procedures requested there are several codes available. In cooperation with the Dutch Healthcare Authority the requested ICD-9CM codes for a certain surgical procedure have been translated to the most appropriate equivalents in the DTC-SSC activity codes. This was based on a thorough investigation of all possible DTC-SSC codes, supported by empiric data analyses. As each year codes can be added to or removed from the DTC-SSC system, this translation is checked (and if necessary, updated) each year.

- Open prostatectomy / transurethral prostatectomy: The definitions are interpreted as follows (for all years): 'Open prostatectomy' includes all prostatectomies except transurethral prostatectomies. Laparascopic prostatectomies are therefore grouped under 'Open prostatectomy'.

- The group of ICD-9CM codes of a certain procedure is translated to a group of DTC-SSC activity codes (operation group). A procedure is counted if one (or more) of the activity codes of the respective operation group is registered in a DTC on day 'x'. If more than one code of an operation group is registered on the same day (e.g. several parts of the same procedure, or multiple procedures, e.g. cataract surgery on both eyes in one day) only one procedure is counted. If multiple codes of an operation group are registered on two different days, then these are counted as two procedures. In this way all procedures of a patient are counted per year.

Date of procedure instead of date of discharge

- In the Eurostat definitions, the procedure is defined on the day of discharge. However, discharges are not registered as such in the DTC-system, but the date of the procedure is. Therefore, the surgical procedures performed in 2012 are based on procedures registered in the DTC-SSC with a date in 2012. There will be very little difference between the procedure counts based on discharge dates and the counts based on procedure dates on a yearly basis.

Case type: inpatient-, day- and outpatient cases

- Inpatient-, day- and outpatient cases are not registered as such in the DTC-SSC system. Also for a surgical procedure the case type is not specifically registered. An algorithm has been developed to derive case types from the several healthcare activities registered in a DTC and to link the right case type to a procedure.

- Some surgical procedures are also performed in outpatient setting. The joint questionnaire covers outpatient cataract surgery and tonsillectomy, but for transluminal coronary angioplasty (PTCA) only inpatients and day cases are covered in the questionnaire. However, in the Netherlands approximately 5% of the PTCAs have an outpatient case type, and thus are not included in the figures.

Estimation method:

- To produce the figures required, specific methods are used to process the DTC-SSC data. Estimation methods have been used to correct for incompleteness of the register and to derive case types from the DTC databases. Because of the estimation methods used, the resulting figures should be regarded as estimates. The figures are therefore rounded to tens. The result of this rounding is that case types may not add up exactly to the total numbers.

Correction for incompleteness of register

- The DTC-SSC register from DIS has some degree of non-response. Incompleteness of the register is solved by weighing the number of DTC-SSCs from DIS to the number of DTCs delivered to the insurance companies. The number of surgical procedures within the DTC-SSCs are weighted with the same factor as the corresponding DTC-SSC, as up to 2015 we do not have specific data from insurance companies of the number of surgical procedures. The level of incompleteness of the DIS dataset varies per year, depending on system changes and the date of

extraction of the dataset from DIS (later extractions are more complete). In 2012 the completeness was relatively low (ca. 87% on DTC-SSC level), because a major change in the DTC-SSC system was introduced. In 2013 the completeness was 90%, in 2014 95% and in 2015 92%.

Derivation of case types: inpatient cases, day cases, and outpatient cases.

- As case types are not registered as such within the DTC-SSC-system, these are derived from specific healthcare activities registered in the same DTC-SSC where the surgical procedure is registered. Healthcare activity codes indicating inpatient, outpatient and day-care are used to derive case types. The codes used can differ per reporting year, depending on changes in the DIS registration rules.

- An algorithm has been developed to construct the best fit for the case type at the day of the surgical procedure. This is done by looking at the different healthcare activities (indicating case types) and their dates registered in the DTC where the surgical procedure is registered. Registration of the date of healthcare activities that indicate case type is not always correct and sometimes even missing. Therefore, to link the best fitting case type to each procedure, a set of rules has been developed. The rules applied are, in order:

1. The case type is first based on the healthcare activities (indicating inpatient-, day- or outpatient care) registered on the day of the procedure. If multiple case types are found on the day of the procedure, inpatient is preferred above all and day case is preferred above the outpatient case type. The list of healthcare activities used to indicate case type has been slightly revised for the figures of 2014 and later years.
2. If on the day of the procedure a single inpatient (bed-)day is registered (so no inpatient healthcare activities on the day before or after the procedure) and on the same day there is also a healthcare activity registered indicating day care, then a day case is assigned.
3. The case type is inpatient when an inpatient healthcare activity is registered on the day after the procedure, regardless of the case type(s) registered on the day of the procedure.
   (it is assumed that in these cases the surgical procedure has led to an inpatient stay).
4. For diagnostic procedures (diagnostic bronchoscopy and colonoscopy): if after steps 1-3 no case type is found yet, then the case type outpatient is assigned.
5. For other procedures: if no case type is found yet, then a case type is assigned based on the healthcare activity whose date is closest to the date of the procedure. If multiple case types are found on the closest day, inpatient is preferred above all and day case is preferred above the outpatient case type.
6. If no case type is found yet, then for the figures of 2012 and 2013 the most prevalent case type of the procedure concerned was assigned. From 2014 onwards a more precise method was used to determine the case type for the missing values: the case type was imputed from similar records (which do have a case type) that have the same procedure code, specialism, and product code of the DTC, using a hot deck imputation algorithm.
7. Editing data: when an impossible case type is assigned to a certain procedure (e.g. day case for a pulmectomy or outpatient for a cholecystectomy), these are corrected to the most prevalent case type of the procedure concerned.

Figures up to and including 2010:

Source of data: The **Hospital Discharge Register** (HDR, the 'Landelijke Medische Registratie' of Dutch Hospital Data) was used as the basic source of data on procedures performed in hospitals. All reported procedures were based on the HDR, with the following exceptions:

- the number of *transluminal coronary angioplasty* procedures and *stem cell transplantations* are based on figures of the **Dutch Healthcare Authority** ('Nederlandse ZorgAutoriteit').

Coverage:

- In the Netherlands, medical procedures were registered in the Hospital Discharge Register (HDR) using a Dutch Extension of the ICPM (ICPM-DE, Prismant, version 1.7). The requested ICD-9CM codes have therefore been translated in the codes of the Dutch ICPM.

- During an admission of a patient more than one surgical procedure may have been performed. Of these, the most important procedure performed during the admission is registered in the HDR (i.e. the principal procedure); the registration of other surgical procedures during the same admission is less complete. The figures up to 2010 therefore include the number of principal procedures only. All principal procedures were counted; in case a patient had undergone the same (principal) procedure more than once during a year (in separate admissions), the procedure was counted more than once too.

- The HDR includes inpatient and day-care procedures only.

- The figures include the surgical treatments in Dutch hospitals to non-residents of the Netherlands.

- From 2005 onwards, the HDR in the Netherlands suffered from a substantial degree of non-response, especially for the reporting of surgical procedures. Therefore, we raised the figures by imputation of data for the non-responding hospitals. This results in less accuracy of the figures. The inaccuracy is higher for surgical procedures than for hospital diagnoses, because from 2005 onwards, some hospitals register diagnoses, but do not report procedures. In 2004, for only 1% of the discharges the surgical procedures had to be imputed, but in 2005 13%, in 2006 26%, and from 2007 – 2009 around 30%. In 2010, we had to impute a surgical procedure for 35% of the discharges. The figures from 2005 onwards are much less accurate because of the high levels of non-response in these years. This is also the reason why Statistics Netherlands decided to terminate the statistics on procedures based on the HDR from 2011 onwards, as the non-response in that year had further increased to 40%.
- The HDR covers only short-stay hospitals. The hospitals included are all general and university hospitals, one specialized eye hospital and one cancer hospital. Up to 2012 also one orthopaedics/rehabilitation clinic is included. The register therefore does not cover all hospitals of the HP.1 category. The differences are:
  - o   Category HP.1.2 (mental health and substance abuse hospitals) is not included at all.
  - o   Category HP.1.3 (specialty hospitals other than hospitals for mental health and substance use):
    - Excluded are epilepsy and asthma/lung clinics, rehabilitation centres and hemodialysis centres. From 2013 onwards also one orthopaedics/rehabilitation hospital is excluded.
    - Excluded are also semi-private hospitals (independent treatment centres); these hospitals mainly have outpatients and day cases.
    - Excluded is the military hospital and private clinics. The number of inpatients and day cases are estimated to be relatively small in these clinics.

Some treatments in category HP.1. hospitals are excluded:
- Part-time psychiatric treatments in general or university hospitals with a psychiatric ward are not recorded in the HDR.
- Cases of rehabilitation day-treatment are not registered in the HDR.
- Non-inpatient admissions for normal deliveries (mother planned to be in hospital for less than 24 hours) are not registered in the HDR.

Estimation method: The data of the Dutch Healthcare Authority and the annual hospital survey do not distinguish between procedures performed in day care and inpatient procedures. Consequently the following adaptations were made:
- for *stem cell transplantations*, it is assumed that these are all inpatient procedures.
- The *transluminal coronary angioplasty* procedures performed in day care are for the largest part actually transfers of patients from one hospital to another hospital (the latter being certified to perform this procedure; the first hospital not). So most of these 'day-cases' are transferred inpatients. As we could not give reliable estimations of the proportion of real day cases (we estimate this proportion to be less than 10%), we counted the transferred patients as day cases.

New Zealand

Source of data: Data extracted from the **National Minimum Data Set** (NMDS), maintained by the **Ministry of Health** (National Collections & Reporting – NCR).
Coverage:
- Data present a count of the number of discharges for a performed procedure.
- Data are based on publicly-funded hospital discharges. Private hospital stays are included where they are publicly funded; excluded otherwise.
- New Zealand started coding hospital data using ICD-10-AM in 1999. The data supplied to the OECD for 1999 was mapped back to ICD-9-CMA-II. From 2000, the ICD-10-AM procedure codes were used for collation purposes. The ICD-10 codes used include all the codes that map back to the supplied ICD-9 codes with two exceptions:
- Transluminal coronary angioplasty was identified using the ICD-10 block codes for *Tranluminal coronary angioplasty* and *Transluminal coronary angioplasty with stenting blocks.*
- *Total knee replacement* does not include partial knee replacements.
- Day cases in the NZ definition do not include out-patient cases in hospitals or outside of hospitals. The New Zealand definition of day cases requires:
  - LOS = 0, plus Event_End_Type code = DR only (ie. routine discharge).
  - LOS denotes (Discharge_Date - Admission_Date) - Leave_Days.

- In NZ, outpatient and emergency department (ED) events are captured by the NNPAC administrative collection (National Non-Admitted Patient Collection). Clinical data on diagnoses and procedures is not captured by NNPAC. The distinction between day cases and out-patients in the NZ healthcare context is made by reference to the '3 hour admission rule': if a patient is treated for more than 3 hours or has a general anaesthetic, they are admitted and recorded on the NMDS. Otherwise, the event is captured by NNPAC.
Break in time series: 2019 for *Prostatectomy*.
- In July 2019, the New Zealand Ministry of Health switched to the 11th edition of ICD-10-AM. This removed the transurethral specific prostatectomies. When the new code (*3722403 Endoscopic resection of prostate*) is mapped back to the earlier versions it is being counted as an open prostatectomy (the specific code is *3720006 Other closed prostatectom*y this was based on the ICD-9 codes that the OECD originally supplied). This new code essentially combines a number of different codes (some open, some transurethral) into a single code which doesn't allow to separate them out. This means that now there are no valid codes which can be used to identify transurethral prostatectomies, and from 2020 onwards these will be 0. The volumes that were found for 2019 relate to the first 6 months (coded in 8th edition).

Norway

Source of data:
- 2000-2012: **Norwegian Patient Register (NPR)**, published in the publication *Health Statistics in the Nordic Countries* (NOMESCO).
- From 2013: NPR uses a bridge coding, made by the Norwegian Directorate of Health, between the Nordic Classification of Surgical Procedures (NCSP) and ICD-9-CM.
Coverage:
- From 2008 onwards, "Inguinal and Femoral Hernia" refer to "Repair of Inguinal Hernia" (53.0, 53.1); Knee replacement refers to Total knee replacement (81.54).
- Data for percutaneous coronary interventions include both inpatient cases and day cases. In 2009, day cases represented 17% of PCIs.
- From 2015 onwards there has been a number of changes to the definitions of surgical procedures:
     - Tonsillectomy: Inclusion of EMB 12 and EMB 15.
     - Repair of inguinal hernia: removal of JAC10, JAC11, JAC30, JAC40.
          - Of which: Laparoscopic repair of inguinal hernia: removal of JAC11.
     - Hysterectomy
          - Of which: Laparoscopic hysterectomy: Removal of LCD40; inclusion of LCD04, LCD31, LCD97.
     - Total Knee replacement: inclusion of NGB70.
- From 2016 the following changes in definitions of surgical procedures are done:
     - Transluminal coronary angioplasty: Inclusion of FNP02B, FNQ05B
     - Kidney transplantation: KAS01 is included in addition to KAS00
     - Laparoscopic hysterectomy: LCC01, LCC11, LCC97 is included, in addition to LCD04, LCD11, LCD31, LCD97
     - Open prostatectomy: Inclusion of NCSP-code KEC01 until 2015; removal of KEC01 from 2016 onwards.
Break in time series: 2013, 2016.

Poland

Source of data: **National Institute of Public Health-National Institute of Hygiene** (NIPH-NIH); General Hospital Morbidity Study (GHMS).
Reference period: Patients discharged in period January 1 to December 31.
Coverage:
- Data for General (non-psychiatric) Hospital Morbidity Study were provided by 85% of all hospitals in 2003, 87% in 2004, 91% in 2005, 93% in 2006, 92% in 2007, 88% in 2008, 93% in 2009 and 92% in 2010. Data presented in the tables are actual and are not estimated to eliminate underreporting. Psychiatric, Military and Ministry of Internal Affairs hospitals are not included. The number of procedures, especially minor procedures, is considered to be underreported.

- The data do follow the definition: for a coronary angioplasty including a coronary stenting, *only one procedure is reported*. Similarly, for cataract surgeries the removal and insertion of a lens are counted as one procedure only.

Portugal

Source of data:
- *Caesarean sections*: **Statistics Portugal** - Health statistics (published annually).
- *Other procedures*: **Ministry of Health**, Central Administration of the Health System (ACSS), National Hospital Morbility database.
Coverage:
Caesarean sections:
- National coverage.
- Data available for caesarean sections made in hospitals (public and private sector).
Other procedures:
- Data based on all public hospitals in mainland until 2009. For 2010, includes data on all public hospitals in mainland and 4 public hospitals in Região Autónoma dos Açores and in Região Autónoma da Madeira. For 2015, includes data on all public hospitals in mainland and 5 public hospitals in Região Autónoma dos Açores and in Região Autónoma da Madeira. Since 2016, data include all public hospitals in the mainland and all public hospitals in Região Autónoma dos Açores and in Região Autónoma da Madeira.
- The data on surgical procedures consider only one code per procedure category for each patient.
- *Inpatient cases*: Includes stays with less than 24 hours with overnight, and stays with more than 24 hours.
- *Day cases*: Includes same day discharges
Break in time series: 2017. Up to 2015, the ICD-9-CM classification was used. From 2017 onwards, the ICD-10-PCS classification is used in exclusive (2016 was a transition year with the use of both classifications – ICD-9-CM and ICD-10-PCS).

Slovak Republic

Source of data:
- *Cataract Surgery, Tonsillectomy, Coronary artery bypass graft, Appendectomy, Cholecystectomy, Repair of inguinal hernia, Open prostatectomy, Hysterectomy, Partial excision of mammary gland, Total mastectomy*: **National Health Information Center (NHIC)**. The data for Cataract surgery, Tonsillectomy (day cases), Hysterectomy (inpatient cases) were revised in 2019 for the years 2009-2016.
- *Stem cell transplantation*: **The National Registry of Bone Marrow Donors, Faculty Hospital of Bratislava**.
- *Hip replacement, Total knee replacement*: **NHIC, The Slovak Arthroplasty Register (SAR)**, http://sar.mfn.sk/pracoviska.
- *Caesarean section*: **NHIC**, Mothers (childbearing women) and newborn database in the relevant year.
Coverage:
- *Stem cell transplantation*: The data represent the total number of Hematopoietic Stem Cell Transplants, including Bone Marrow Transplants as well as Peripheral Blood Stem Cell Transplants and Cord Blood.
- *Appendectomy, Inguinal and femoral hernia, and Mastectomy*: Total number of surgical operations which were performed at bed departments of surgical departments/hospital wards.
- *Caesarean section*: Total number of deliveries finished by caesarean section, regardless of delivery of a live or a still-born child. Procedures performed at gynaecology and obstetrics bed departments in hospitals.

Inpatient cases: Surgical procedures in bed wards annual report.
- The data represent the total number of patients undergoing a given type of operation during one hospitalisation at the appropriate bed ward.
- To identify the operation in the report the own procedures code list created for statistical purposes is used. ICD-9-CM is not used in Slovakia.
- Some requested operations are not monitored in the report. Tonsillectomy and Transluminal coronary angioplasties are not monitored at the level of defined particular performance in the subject of the report.

Day cases: Day care annual report.

- The data represent the total number of patients undergoing surgical intervention according to the procedures code list of day care healthcare.
- The code list is given by the professional guidance of the Ministry of Health.
- In the Slovak Republic, day care healthcare procedures are surgical medical interventions, procedures which are performed in selected specialty departments, and that can be performed without subsequent institutional, inpatient healthcare, i.e. in institutional healthcare facilities and day care healthcare facilities.

Deviation from the definition:
- *Appendectomy* and *Laparoscopic appendectomy*: Inpatient cases do not include incidental appendectomy.
Notes:
- For the years 2009-18 following data: *Repair of inguinal hernia* (total cases, day cases) were revised in 2020. Number of inpatient cases relating to *Repair of inguinal hernia* and *Laparoscopic repair of inguinal hernia* were updated for the year 2018.
- For the year 2018 following data: *Appendectomy* (total cases, day cases) as well as *Laparoscopic appendectomy* (total cases, day cases) were revised in 2020.
- Data on *Hip replacement* and *Total knee replacement* for the year 2019 were revised in 2022.

Slovenia

Inpatient cases, day cases
Source of data: **National Institute of Public Health, Slovenia**; e-DRG system database.
Reference period: during the year.
Coverage:
- e-DRG system database: e-DRG statistics extends to all hospitals, which reports data through e-DRG application from April 2004 (all public acute hospitals and some acute private hospitals).
- Because of the different methodology between EUROSTAT and OECD in previous years we followed the requested methodology of OECD/Eurostat/WHO-Europe Joint Questionnaire on Non-Monetary Health Care Statistics and corrected also the previous data for 2005 - 2012.
- All e-DRG discharges from April 2004 - Dec 2012 were coded using classification ICD-10-AM / ACHI 2nd Edition for procedures and discharges from January 2013 are now coded using classification ICD-10-AM/ACHI (6th Edition). Data for 2005-2021 may contain up to 20 procedures per case. The method to count procedures is based on a count of the number of patient discharges.
- ACHI codes selection is made on the base of cross-mapping between ICD-9 and ACHI codes, developed within the project Hospital Data Project 2 (procedure shortlist). The ACHI codes using for 2005-2021 data are as follows:
Cataract surgery: 2005-2012: 4269800, 4269801, 4269802, 4269803, 4269804, 4269805, 4270100, 4270101, 4270200, 4270201, 4270202, 4270203, 4270204, 4270205, 4270206, 4270207, 4270208, 4270209, 4270210, 4270211, 4270300, 4270400, 4270700, 4271000, 4273101. 2013-2021: Blocks 193, 194, 195, 196, 197, 198, 199, 200.
Tonsillectomy: 2005-2012: 4178900, 4178901. 2013-2021: 4178900, 4178901.
Transluminal coronary angioplasty: 2005-2012: 3530400, 3530401, 3530500, 3530501, 3531000, 3531001, 3531002, 3531003, 3531004, 3531005. 2013-2021: Blocks 670, 671.
Coronary artery bypass graft: 2005-2012: 3849700, 3849701, 3849702, 3849703, 3849704, 3849705, 3849706, 3849707, 3850000, 3850001, 3850002, 3850003, 3850004, 3850300, 3850301, 3850302, 3850303, 3850304, 9020100, 9020101, 9020102, 9020103. 2013-2021: Blocks 672, 673, 674, 675, 676, 677, 678, 679.
Appendectomy: 2005-2012: 3057100, 3057200, 3957200. 2013-2021: Block 926,
Of which: Laparoscopic appendectomy: 2005-2012: 3057200. 2013-2021: 3057200.
Cholecystectomy: 2005-2012: 3044300, 3044500, 3044600, 3044800, 3044900, 3045401, 3045500. 2013-2018: Block 965,
Of which: Laparoscopic cholecystectomy: 2005-2012: 3044500, 3044800, 3044900. 2013-2021: 3044500, 3044800, 3044900.
Repair of inguinal hernia: 2005-2012: 3060902, 3061402, 3060903, 3061403. 2013-2021: Block 990,
Of which: Laparoscopic repair of inguinal hernia: 3060902, 3060903. 2013-2021: 3060902, 3060903.
Transurethral prostatectomy: 2005-2012: 3720300, 3720301, 3720302, 3720303, 3720304, 3720305, 3720306, 3720700, 3720701. 2013-2021: Blocks 1165, 1166.

Open prostatectomy: 2005-2012: 3720003, 3720004, 3720005, 3720900, 3721000, 3721100. 2013-2021: Block 1167x.
Hysterectomy: 3565300, 3565301, 3565302, 3565303, 3565700, 3566100, 3566400, 3566401, 3566700, 3566701, 3567000, 3567300, 3567301, 3575000, 3575300, 3575301, 3575600, 3575601, 3575602. 2013-2021: Blocks 1268, 1269,
Of which: Laparoscopic hysterectomy: 2005-2012: 3575000, 3575300, 3575301. 2013-2021: 3575000, 3575302, 3575600, 3575603.
Hip replacement: 2005-2012: 4752200, 4931200, 4931500, 4931800, 4931900, 4932400, 4932700, 4933000, 4933300, 4933900, 4934200, 4934500, 4934600. 2013-2021: Blocks 1489, 1492.
Total knee replacement: 2005-2012: 4951800, 4951900, 4952100, 4952101, 4952102, 4952103, 4952400, 4952401, 4953400. 2013-2021: 4951800, 4951900, Block 1519.
Partial excision of mammary gland: 2005-2012: 3034200, 3034600. 2013-2018: Block 1744.
Total mastectomy: 2005-2012: 3035600, 3035601, 3035602, 3035603, 3033800, 3033801, 3033802, 3033803. 2013-2021: Blocks 1747, 1748.

Stem cell transplantation:
Source of data: **Slovenia Transplant, Slovenia.**
Reference period: Calendar year.

Caesarean section
Source of data: **National Institute of Public Health, Slovenia**, *Perinatologic information system (PIS).*
Reference period: Calendar year.
Definition: Number of all births performed with Caesarean section.
Coverage: All Hospitals reporting data to PIS.

Cataract surgery - Outpatient cases
Source of data: **The Health Insurance Institute of Slovenia** – HIIS (Surveys of healthcare providers and contracts with healthcare providers).
Reference period: Calendar year.
Coverage: Healthcare providers of outpatient care (covered by compulsory health insurance) - Clinics in Public Hospitals, Organizations licensed to practice and Healthcare professionals licensed to practice.

Tonsillectomy - Outpatient cases
- No day cases or outpatient cases of surgical procedures of Tonsillectomy are performed in Slovenia. ALOS of inpatients is 3 days for children and adults.

Spain

Source of data:
- **Ministerio de Sanidad** (Ministry of Health). **Subdirección General de Información Sanitaria**
http://www.sanidad.gob.es/estadEstudios/estadisticas/estHospiInternado/inforAnual/homeESCRI.htm.
- *Stem cell transplantation*: **Ministerio de Sanidad** (Ministry of Health). **Organización Nacional de Trasplantes** (National Transplants Organisation), several issues. See at: http://www.ont.es/.
- *Caesarean section*: **Ministerio de Sanidad** (Ministry of Health).
- Up to 2009: Data from **Estadística de Establecimientos Sanitarios con Régimen de Internado** (Statistics on Health Establishments Providing Inpatient Care).
- Since 2010: Data from **Sistema de Información de Atención Especializada.** Estadística de Centros Sanitarios de Atención Especializada - SIAE (Specialised Care Information System. Statistics on Health Centres for Specialised Care). http://www.sanidad.gob.es/estadEstudios/estadisticas/estHospiInternado/inforAnual/homeESCRI.htm.
Rest of procedures:
- Until 2015: Number of patients from National Hospital Discharge Minimum Data Set (NHDMDS) of acute care public hospitals (hospitals with public financing). Increasing coverage of private hospitals from 2005 onwards (with 209 private hospitals included, 93% of total acute care hospitals discharges in 2015 and 95% of total Major Ambulatory Surgery are also included in the National Registry, registry started in 2005).

- From 2004, data on invasive therapies and major surgical ambulatory procedures are included. From 2006, all acute care public hospitals are included – partial coverage of private acute hospitals.
- From 2016: Data from **Ministerio de Sanidad**, Registro de Actividad de Atención Sanitaria Especializada RAE-CMBD (Ministry of Health, Registry of Specialised Care Activity RAE-CMBD). https://www.sanidad.gob.es/en/estadEstudios/estadisticas/cmbdhome.htm. Procedures are coded in ICD10PCS. In 2016 there is a lower coverage as not all hospitals were able to send 100% of discharges and day cases coded.
Deviation from the definition:
- There is a deviation from the definition for **Hysterectomy**: it has been included a supracervical qualifier (L):
  - 0UT9_Z_: Hysterectomy. Resection of the uterus with the different approaches (open, percutaneous endoscopic, natural or artificial orifice, endoscopic natural or artificial orifice and natural or artificial orifice with percutaneous endoscopic assistance) without any device and with the qualifiers "none" or supracervical.
- There is a deviation from the definition for **Laparoscopic hysterectomy**: it has been included a supracervical qualifier (L):
  - 0UT9[4,F]Z_: Laparoscopic hysterectomy. Resection of the uterus with the percutaneous endoscopic or artificial orifice with percutaneous endoscopic assistance approaches without any device and with the qualifiers "none" or supracervical.
- There is a deviation from the definition for **Hip replacement**: the previous codes were:
  - 0SR[9,B]0[1,2,3,4,J][9,A,Z]
  - 0SR[A,E]0[0,1,3,J][9,A,Z]
  - 0SR[R,S]0[1,3,J][9,A,Z]
  - It has been included a new device (device 6), synthetic substitute, oxidized zirconium on polyethylene): 0SR[9,B]06[9,A,Z]: hip replacement (right or left) with open approach with the device 6 Synthetic Substitute, Zirconium Oxide on Polyethylene and all qualifiers (cemented, uncemented, none)
-There is a deviation from the definition for **Total knee replacement**: the previous codes were:
  - 0SR[C,D]0[J,L][9,A,Z]: total knee replacement (left or right), open approach, synthetic substitute or medial unicondylar synthetic substitute and all qualifiers (cemented, uncemented, none).
  - 0SR[T,U,V,W]0J[9,A,Z]: total knee replacement (left or right femoral or tibial Surface), open approach, with synthetic substitute and all qualifiers (cemented, uncemented, none).
  - The following codes have been added: 0SRC06*, 0SRC0M*, 0SRC0N*, 0SRD06*, 0SRD0M*, 0SRD0N*.
So, we can summarize all of them like this:
  - 0SR[C,D]0[6,J,L,M,N]*: total knee replacement (left or right), open approach, with all devices (6 Synthetic Substitute Zirconium Oxide over Polyethylene , J Synthetic Substitute, L Synthetic Substitute Medial Unicondylar, M Synthetic Substitute, Unicondylar Lateral, N Synthetic Replacement Patellofemoralsynthetic) and all qualifiers (cemented, uncemented, none).
  - 0SR[T,U,V,W]0J*: total knee replacement (left or right femoral or tibial Surface), open approach, with synthetic substitute and all qualifiers (cemented, uncemented, none).
Break in time series:
- From 2005, private hospitals are included (increasing coverage in private hospitals until 2015 when 93% of the total major surgical activity is covered).
- In 2016 Spain started a new model of data and classification system (transition from ICD9CM into ICD10PCS).
Break in time series for *Mastectomy*:
- In 2020, there is a removal of some previous codes (0HR: skin and breast replacement) due to a change in the coding standard that results in a 37% decrease in the number of cases from the previous year.
  - Previous codes:
  - 0HT[T,U,V]0ZZ: skin and breast resection (left, right or both), open approach, none device, none qualifier.
  - 0HR[T,U,V]07[5,6,7,8,9,Z]
  - 0HR[T,U,V]0[J,K]Z
  - 0HR[T,U,V][3,X][7,J,K]Z
  - New code: 0HT[T,U,V]0ZZ: skin and breast resection (left, right or both), open approach, none device, none qualifier.

- In 2020 there is a general decrease in procedures, possibly as a result of the Covid pandemic.
Further information:
- In 2020, data have been revised from 2016 onwards as some centres have provided updates. The whole time series has been revised for *cataract surgery*, as until 2019 only patients were counted (if they got the procedure in two separate occasions they counted as one).
- In 2023, 2020 provisional data (sent in 2022) were updated.

Sweden

Source of data: **National Board of Health and Welfare**, National Patient Register (NPR). See
www.socialstyrelsen.se/publikationer2004/2004-4-1.
Coverage:
- The National Patient Register started in 1964. Classification used: The Swedish version "Klassifikation av kirurgiska åtgärder 1997 (codes: AAA00-ZZU00)" of the Nomesco classification "Classification of Surgical Procedures". NPR is updated every year with new and revised data.
- In 2017, the data for the years 2005-2015 have been updated to better conform to the SHA definitions of health service providers (HP.1-HP.3) and healthcare functions (HC.1-HC.3).
- *Inpatients*: Is patients who receives treatment and/or care in a healthcare facility, who is formally admitted and who requires an overnight stay.
- *Day cases*: Is patients who receives planned medical and paramedical services delivered in a healthcare facility and who is formally admitted for diagnoses, treatment or other types of healthcare and is discharged on the same day.
- *Outpatients* (for cataract surgery and tonsillectomy): Is the same as Day cases; patients who receives planned medical and paramedical services delivered in a healthcare facility and who is formally admitted for diagnoses, treatment or other types of healthcare and is discharged on the same day.

Switzerland

Source of data:
- All cases until 2008, inpatient cases since 2009: **Federal Statistical Office (FSO)**, Neuchâtel; Medical Statistics of Hospital, 2002 and following years.
- Day cases since 2014: **Federal Statistical Office (FSO)**, Neuchâtel; Statistics of Ambulatory Patients in Hospitals, 2014 and following years.
Reference period: Annual census.
Coverage:
- Full coverage of hospitals; sufficient (nearly full) coverage of inpatient and day cases since 2002.
- Due to a modification of the legislation, day cases have not been collected since 2009 and until 2013.
- All procedures per case are taken into account. The count is the number of cases with the given code corresponding to the category; cases with codes from several categories are counted several times.
- In Switzerland, there is no distinction between day cases and outpatient cases. These cases only relate to procedures taking place within hospitals.
Deviation from the definition: The definition and delimitation of day cases until 2008 is subject to local heterogeneity; figures should be treated with caution (some patients with multiple episodes of day-cases are recorded only once, leading to an underestimation of actual day-cases).
Break in time series:
- The gradual expansion of the classification of procedures CHOP (Swiss Classification of Operations, based on ICD-9-CM) since 2008 leads to minor breaks in some categories.
- Since 2009 and until 2013, there are no data on day cases. This is due to a change in the legal delimitation between outpatients and inpatients. Since 2009, all hospital admissions (apart from death cases and some transfers) with a stay of less than 24 hours are considered by law to be outpatient cases in Switzerland. The former notion of "semi-hospitalisation" or "day-case" (essentially hospital stays of less than 24 hours) has been abolished. Consequently, no data on "day-cases" are collected anymore in Medical Statistics of Hospitals.
- Since 2014, the new Statistics of Ambulatory Patients in Hospitals have been introduced to cover all non-inpatient cases in hospitals from administrative sources. The series have been updated retrospectively after analysing the

corresponding codes for the extraction of the data and the time-consistency of the series. The potential differentiation between day cases and outpatient cases must still be further analysed.

Türkiye

Source of data:
- *Stem cell transplantation*: **General Directorate for Health Services, Ministry of Health**.
- *Caesarean section*: **General Directorate of Public Health, Ministry of Health**.
- *Other procedures*: **General Directorate of Health Information System**.
Reference period: Annual.
Coverage: Data include all public, private and university hospitals.
Note:
- *Caesarean section*: According to the "Postnatal management guide" provided by Ministry of Health, women should be monitored at least 48 hours after birth in hospital. So the high number of day cases actually reflects either the mother discharge on a specific request or the transfer to another hospital.

United Kingdom

Source of data:
Data has been aggregated by the **NHS Digital** from the following sources:
- *England*: Hospital Episode Statistics (HES), **NHS Digital**. http://content.digital.nhs.uk/.
- *Wales*: Patient Episode Database for Wales (PEDW), **NHS Wales Informatics Service** (NWIS). http://www.statswales.wales.gov.uk/index.htm.
- *Scotland*: **Public Health Scotland** (Scottish Morbidity Record Schemes – SMR01 records).
- *Northern Ireland*: Hospital Inpatient System (HIS), The **Department of Health**. https://www.health-ni.gov.uk/topics/doh-statistics-and-research.
Reference period:
- *England and Scotland*: Data is based on Financial Discharge Years 1st April to 31st March (e.g., 2008 data are from 1/04/08 to 31/03/09).
- *Wales*: Data is based on the financial discharge year (1st April to 31st March). This has changed to be in line with England & Scotland.
- *Northern Ireland*: Procedures have been tabled by calendar year. In line with the translation from ICD-9 to OPCS 4.6 codes, methodology has been updated in terms of how the procedures are identified. This updated methodology has been backdated through to 2007.
Coverage:
- Data cover the UK National Health Service (NHS) for 2000 to 2016. However, a pro-rata estimation method has been applied for 2000-06 due to Northern Ireland not being able to provide these year's data at the current time.
- *England*, *Wales* & *Scotland*: In 2014, data have been re-stated for all years back to 2000-01, with Northern Ireland's data estimated on these re-stated figures for all years prior to 2007. There are no changes to the previously stated coding used for each of the procedures.
- *Scotland*: In 2016, Scotland provided small updates to their 2012 and 2013 data for a number of indicators in the Procedures section.
- Other coverage points to note, by category that isn't full UK coverage for each of 'total', 'inpatient cases' and 'day cases':
    Cataract surgery – only England, Scotland and Wales supplied outpatient data, for 2003 onwards. Northern Ireland doesn't carry these out as outpatients.
    Tonsillectomy – only England, Scotland and Wales supplied outpatient data, for 2003 onwards. Northern Ireland doesn't carry these out as outpatients.
    Caesarean section – doesn't include Scotland day cases.
- All procedures per case are taken into account. The count is the number of cases with the given code corresponding to the category; cases with codes from several categories are counted several times.
- The estimated procedures for 2000-06 contain decimal places due to the methods applied to estimate.
- Day cases are defined as episodes with a stay duration = 0 (same-day separation) and are electively admitted. Outpatient hospitals are excluded from the data.

- *England*: Activity in English NHS Hospitals and English NHS commissioned activity in the independent sector. If the length of stay in hospital is unknown, then these episodes have been excluded from the inpatient figures. Data based on finished consultant episodes (FCEs) during the reference period. Data have not been adjusted for shortfalls.
- *Wales*: Data cover National Health Service hospital activity and activity in private hospitals. Data have not been adjusted for shortfalls. Welsh data is based on the count of all patients during the reference period.
- *Scotland*: Obstetric & Psychiatric specialities are not included. Caesarean sections are not included in SMR01 returns. These are recorded in SMR02 Maternity data. Data on caesarean sections are based on Financial Discharge Years 1st April to 31st March (e.g., 2008 data are from 1/04/08 to 31/03/09).
- *Northern Ireland*: Procedures shown are those carried out in Health and Social Care Hospitals in Northern Ireland as inpatients or day cases. Information shown does not include Mental Health Specialties or procedures carried out as outpatients.

Break in time series:
- *England*: Operative procedure codes were revised for 2006-07, 2007-08 and 2009-10. The 2009-10 data uses OPCS 4.5 codes, 2007-08 data uses OPCS 4.4 codes, 2006-07 data uses OPCS 4.3 codes and data prior to 2006-07 uses OPCS 4.2 codes. All codes that were in OPCS 4.2 remain in later OPCS 4 versions, however the introduction of OPCS 4.3 and OPCS 4.4 codes enable the recording of interventions and procedures which were not possible in OPCS 4.2. In particular, OPCS 4.3 and OPCS 4.4 codes include high cost drugs and diagnostic imaging, testing and rehabilitation. Some activity may have been coded under different codes in OPCS 4.2. OPCS 4.3 also introduced new codes for bone marrow grafting in 2006-07 (hence there is a strong increase in the number of stem cell transplantations in 2007). These changes need to be borne in mind when analysing time series and may explain some apparent variations over time. Please note that care needs to be taken when analysing 2006/07 as some providers of data were unable to start using the OPCS 4.3 until October of 2006 (this may notably explain the decrease in laparoscopic cholecystectomy in 2006). From 2016 data onwards there are 3 additional OPCS codes (W40.4, W41.1 & W42.5) that have been included for Knee replacement procedures. Previous data has not been updated and does not include data for these additional procedure codes. More information about OPCS 4 changes is on the Connecting for Health website (www.connectingforhealth.nhs.uk).
- *Scotland*: The drop in the number of surgical procedures from 2008/09 onwards is due to the fact that from the 1st April 2008, it was no longer mandatory to record interventions/procedures (such as imaging, injections, infusions, x-rays, etc.) unless the patient is specifically admitted for this purpose. For further details please refer to the following document: http://www.isdscotland.org/isd/files/CGMarch08No22.doc.
- *Wales*: Cataract outpatients data are only available from 2004/05.

United States

Stem cell transplantations
Source of data: Center for International Blood and Bone Marrow Transplant Research (CIBMTR).
http://www.cibmtr.org.
Coverage: 90% unrelated donor, 65% related donor, and 60% of autologous transplants performed in the U.S.
Estimation: Based on the actual number of transplants registered to CIBMTR and the estimated percentages that these transplants represent over total activity.
Further information: The data released are a preliminary review of information submitted by the CIBMTR. If used publicly, the following statement must be included: "The data presented here are preliminary and were obtained from the Statistical Center of the Center for International Blood and Marrow Transplant Research. The analysis has not been reviewed or approved by the Advisory or Scientific Committees of the CIBMTR."

Other procedures
Inpatient cases
Source of data: Centers for Disease Control and Prevention/ National Center for Health Statistics**National Hospital Discharge Survey (NHDS)** (various years). http://www.cdc.gov/nchs/about/major/hdasd/nhds.htm.
Coverage:
- The **National Hospital Discharge Survey** (**NHDS**) produces national estimates on characteristics of surgical and nonsurgical procedures in inpatient settings in the United States. The NHDS survey includes hospitals with an average length of stay of less than 30 days for all inpatient, general and children's general hospitals. NHDS excludes

in its sampling method federal, military and Department of Veterans Affairs hospitals, as well as hospital units of institutions (such as prison hospitals) and hospitals with fewer than six beds staffed for patient use.
- NHDS is conducted on an annual basis.
- The NHDS defines a procedure as a surgical or non-surgical operation, diagnostic procedure, or therapeutic procedure (such as respiratory therapy) recorded on the discharge record.
- The US provides the number of "any-listed" procedures counting method. "Any-listed" procedures are defined as the surgical and non-surgical procedures that occur at least once in any of the four procedure code categories recorded on the discharge record. An "any-listed" procedure is only counted once regardless of the number of times the procedure is mentioned on the discharge record. Please be advised that the "any-listed" procedure definition contrasts with the traditional United States definition used by NHDS of "all-listed" procedures. "All-listed" procedures are defined as the total count of occurrences of the procedure code on each discharge record.
- *Percutaneous coronary interventions (PTCA) and stenting (36.0).* To reflect the proper estimate US used the ICD-9-CM 36.0 and 36.06 code instead of solely the 36.0 code.
- *Coronary Artery Bypass discharges (36.1)*: The estimates present the number of patients who receive such procedures, not the number of coronary procedures. Coronary bypass patients can receive more than one bypass procedure in a single surgery. Previously, the estimates referred to the total number of bypass procedures provided. In 2004, the complete time series of Coronary Artery Bypass estimates was revised to refer to the number of patients receiving bypass procedures.
- *Caesarean delivery (74.0-74.2-74.4, 74.99)*: Historical estimates excluded US territories. 1990 - Excluded data from Oklahoma, which did not report method of delivery on the birth certificate. Reference: Martin JA, Hamilton BE, Osterman MJK, et al. Births: Final data for the respective year. National vital statistics reports; . Hyattsville, MD: National Center for Health Statistics. 2017. NCHS Division of Vital Statistics.
<u>Estimation method</u>:
- Percent estimates were weighted to represent the U.S. civilian non-institutionalised population for each respective year.
- For more detailed information on the design of NHDS and the magnitude of sampling errors associated with NHDS estimates, see :
      - Popovic, JR. (1999). National Hospital Discharge Summary: Annual summary with detailed diagnosis and procedure data. National Center for Health Statistics. Vital Health Stat 13(151). 2001.
      - Dennison, C. Pokras R. Design and operation of the National Hospital Discharge Survey: 1988 redesign. National Center for Health Statistics. Vital Health Stat 1 (39). 2000. Available at http://www.cdc.gov/nchs/data/series/sr_01/sr01_039.pdf.
<u>Break in time series</u>: No breaks in time series.

Day cases
<u>Source of data</u>: Centers for Disease Control and Prevention/ National Center for Health Statistics/**National Survey of Ambulatory Surgery (NSAS)**. 2006. http://www.cdc.gov/nchs/nsas.htm.
<u>Coverage</u>:
- The **National Survey of Ambulatory Surgery (NSAS)** covers surgical and nonsurgical procedures performed in ambulatory (out-patient) surgery centers, both hospital-based and freestanding center's general operating rooms, dedicated ambulatory surgery rooms, and other specialised rooms such as endoscopy units and cardiac catheterization laboratories.
- The NSAS includes only short-stay hospitals (hospitals with an average length of stay for all patients of fewer than 30 days) or hospitals whose specialty was general (medical or surgical) or children's general. This universe definition is the same as the one used by NHDS. The universe of freestanding facilities includes hospitals that were regulated by the states or certified by the Centers for Medicare & Medicaid Services.
- The NSAS excludes from its sampling method facilities specialising in dentistry, podiatry, abortion, family planning or birth, as well as federal, military and Department of Veteran's Affairs hospitals. Hospital units of institution (such as prison hospitals) and hospitals with fewer than six beds staffed for patient use are also excluded.
- NSAS was conducted from 1994-1996 and in 2006.
- *Percutaneous coronary interventions (PTCA) and stenting (36.0).* To reflect the proper estimate US used the ICD-9-CM 36.0 and 36.06 code instead of solely the 36.0 code.
- *Coronary Artery Bypass discharges (36.1)*: The estimates present the number of patients who receive such procedures, not the number of coronary procedures. Coronary bypass patients can receive more than one bypass

procedure in a single surgery. Previously, the estimates referred to the total number of bypass procedures provided. In 2004, the complete time series of Coronary Artery Bypass estimates was revised to refer to the number of patients receiving bypass procedures.

- *Caesarean delivery (74.0-74.2-74.4, 74.99)*: Historical estimates excluded US territories. 1990 - Excluded data from Oklahoma, which did not report method of delivery on the birth certificate. (Reference: Martin JA, Hamilton BE, Sutton PD, Ventura SJ, et al. Births: Final data 2017 (and previous years) . National vital statistics reports; several issues. Hyattsville, MD: National Center for Health Statistics.).

Estimation method:
- Percent estimates were weighted to represent the U.S. civilian non-institutionalised population for each respective year.

Break in time series: No breaks in time series.

NON-OECD ECONOMIES

Bulgaria

Inpatient cases:
Source of data: National Center for Public Health and Analysis at the **Ministry of Health**.
Coverage:
- Data refers to all public and private hospitals. Data refers to discharged surgical patients during the year.
- 2017-2018 – Inpatients and day cases are reported together for Cataract surgery, Transluminal coronary angioplasty, Open prostatectomy, Hysterectomy, Coronary artery bypass graft, Stem cell transplantation, Cholecystectomy and of which Laparoscopic cholecystectomy, Hip replacement, Total knee replacement, Partial excision of mammary gland, Total mastectomy, Repair of inguinal hernia, Transurethral prostatectomy and Open prostatectomy.
- 2000 – 2018 Day cases are included in inpatient cases for Cataract surgery.
- From 2019 data for Cataract surgery, Transluminal coronary angioplasty, Open prostatectomy, Hysterectomy, Coronary artery bypass graft, Stem cell transplantation, Cholecystectomy and of which Laparoscopic cholecystectomy, Hip replacement, Total knee replacement, Partial excision of mammary gland, Total mastectomy, Repair of inguinal hernia, Transurethral prostatectomy and Open prostatectomy are broken down into inpatient cases and day cases.
- *Day case*: A patient with a stay of less than 24 hours is reported as a day case, regardless of whether he or she has overnight at the hospital. For example, when a patient was admitted at 8.00 pm and is discharged at 8.00am of the next day, he or she will be reported as a day case (most common case in emergency department).
Deviation from the definition: Until 2018, data are not split into inpatients and day cases but reported as inpatient cases.
Break in time series: 2019 – Cataract surgery: Inpatient cases no longer include day cases.

Outpatient cases – Cataract surgery
Source of data: **National Health Insurance Fund**.
Coverage:
- All outpatient cases done by outpatient health establishments as providers of hospital care, for which the NHIF have paid.
- 2010 – 2015 - Data refer to the national Clinical Care Pathway №131 'Extracapsular extraction in cataract' only in case the underlying procedures of this CCP are 13.1-13.8 according to the ICD-9-CM.
- 2016 - In 2016, with amendments of the national legislation, besides CCP, outpatient procedures and clinical procedures are introduced.
- Data refer to the national Clinical Care Pathway 131 "Other eyeball operations with large volume and complexity" and Outpatient procedures 19 "Operative cataract removal" only in case the underlying procedures of this CCP/ OP are 13.1-13.8 according to the ICD-9-CM.
- 2017-2021 – Data refer to Outpatient procedures 19 "Operative cataract removal" only in case the underlying procedures of this CCP/ OP are 13.1-13.8 according to the ICD-9-CM.

Outpatient cases – Tonsillectomy
Source of data: **National Health Insurance Fund**
Coverage:
- All outpatient cases done by outpatient health establishments as providers of hospital care, for which the NHIF have paid.
- 2010-2015 Data refer to the national Clinical Care Pathway №120 'Surgical treatment of chronic diseases of the tonsils' only in case the underlying procedures of this CCP are 28.2, 28.3 and 28.4 according to the ICD-9-CM.
- 2016-2021 Data refer to the national Clinical Care Pathway № 138 "Operative treatment of diseases in the field of sciences, skins and breaks with average volume and composition".

Croatia

Source of data: **Croatian Institute of Public Health**, Medical Procedures Database, except for Caesarean sections for which we introduced new and more reliable source: Birth Notifications Database – data were amended for entire period starting from 1990.
Reference period: Calendar year.
Coverage: Data include all public and private healthcare institutions in Croatia, except prison hospital.

Romania

Source of data:
- **Ministry of Health**
- **National Centre of Statistics and Informatics in Public Health** for the period 2000 – 2008.
- **National School of Public Health and Health Management (SNSPMPDSB)** - Bucharest, since 2009.
Reference period: January – December.
Coverage:
- The data concerning procedures used in hospitals cover only the hospitals from the Ministry of Public Health network (public sector) and only main surgical procedures, for the period 2000 – 2008.
- Since 2009, the data concerning procedures used in hospitals cover all the hospitals (public and private sector) and all procedures performed on hospitals.
- The procedures for patients discharged from public hospitals and the private hospitals that have concluded a contract with CNAS was done using the CIM-9CM/CIM-10AM mapping provided by the Ministry of Health - Ministry of Health - National Centre of Statistics and Informatics in Public Health.
- *Inpatients*: The inpatient cases are recordings validated by the SNSPMPDSB throughout each year (January - December).
- *Day cases*: The day cases are recordings **not** validated by the SNSPMPDSB throughout each year (January - December), so the invalidate cases are not excluded from the analysis (in Romania we do not have yet a validation process for day cases.)".