

## Medical technology

### Definitions

Updated: December 2020

	Note: The aim is to collect data on the availability of the following medical equipment in the hospital sector (HP.1), the ambulatory sector (HP.3) and all health care facilities (HP.1+HP.3).
Computed tomography scanners	<p>Number of <b>Computed Tomography scanners (CT units)</b>.</p> <p>A CT or CAT scanner is an x-ray machine which combines many x-ray images with the aid of a computer to generate cross-sectional views and, if needed, three-dimensional images of the internal organs and structures of the body.</p> <p><b>Exclusion</b> - Single Photon Emission Computed Tomography (SPECT).</p>
Magnetic resonance imaging units	<p>Number of <b>Magnetic Resonance Imaging units (MRI units)</b>.</p> <p>MRI is an imaging technique designed to visualize internal structures of the body using magnetic and electromagnetic fields which induce a resonance effect of hydrogen atoms. The electromagnetic emission created by these atoms is registered and processed by a dedicated computer to produce the images of the body structures.</p>
Positron emission tomography scanners	<p>Number of <b>Positron Emission Tomography scanner units (PET units)</b>.</p> <p>PET is a highly specialised imaging technique using short-lived radioactive substances. This technique produces three dimensional images which are used mainly for the assessment of cancer spread in a patient's body.</p> <p><b>Inclusion</b> - PET-CT systems using image fusion (superposition of CT and PET images)</p>
Gamma cameras	<p>Number of <b>Gamma cameras</b>.</p> <p>A Gamma camera (including Single Photon Emission Computed Tomography, SPECT) is used for a nuclear medicine procedure in which the camera rotates around the patient to register gamma rays emission from an isotope injected to the patient's body. The gathered data are processed by a computer to form a tomographic (cross-sectional) image.</p> <p><b>Inclusion</b> - SPECT-CT systems using image fusion (superposition of SPECT and CT images).</p>
Mammographs	<p>Number of dedicated <b>mammography machines</b> (those designed exclusively for taking mammograms). The code is CIM-9 87.37.</p>
Radiation therapy equipment	<p>Number of machines used for treatment with x-rays or radionuclide.</p> <p>They include linear accelerators, Cobalt-60 units, Caesium-137 therapy units, low to orthovoltage x-ray units, high dose and low dose rate brachytherapy units and conventional brachytherapy units.</p>
Digital Subtraction Angiography units	<p>Number of <b>Digital Subtraction Angiography units (DSA units)</b>.</p> <p>DSA technique combines a dynamic picture (obtained after contrast injection) with a static picture taken before contrast injection. Subtraction of these pictures</p>

<p>This data collection was discontinued in 2017 (reference year 2015)</p>	<p><b>creates an accurate image of the cardiovascular system.</b></p>
<p><b>Lithotriptors</b></p> <p>This data collection was discontinued in 2017 (reference year 2015)</p>	<p><b>Number of <a href="#">lithotriptors</a> (or shock-wave lithotripsy units; LSI units).</b></p> <p><b>A lithotripter is an extracorporeal shock wave machine used to shatter kidney stones and gallstones.</b></p>

## Country specific notes

[Belgium](#), [Bulgaria](#), [Czechia](#), [Denmark](#), [Germany](#), [Estonia](#), [Ireland](#), [Greece](#), [Spain](#), [France](#), [Croatia](#), [Italy](#), [Cyprus](#), [Latvia](#), [Lithuania](#), [Luxembourg](#), [Hungary](#), [Malta](#), [Netherlands](#), [Austria](#), [Poland](#), [Portugal](#), [Romania](#), [Slovenia](#), [Slovakia](#), [Finland](#), [Sweden](#), [Iceland](#), [Liechtenstein](#), [Norway](#), [Switzerland](#), [Montenegro](#), [North Macedonia](#), [Albania](#), [Serbia](#), [Turkey](#), [United Kingdom](#)

## Belgium

### Computed Tomography scanners

#### Source of data:

*Hospital (HP.1):* **Federal Service of Public Health, DGGS** “Organisation of health provisions”; Ministry of the Flemish community and Ministry of the French community.

- Since 2016, data are based on the national registry for devices of medical image. Up to 2015, data were based on a hospital questionnaire.

*Ambulatory care providers (HP.3):* **Federal Agency for Nuclear control (FANC):** licenses delivered for use of nuclear machinery.

Reference period: 31<sup>st</sup> December.

#### Coverage:

- *Hospital (HP.1):* Until 2012, data correspond to the number of hospitals with this technology. From 2013 onwards, data correspond to the number of devices.

- *Ambulatory care providers (HP.3):* FANC: number of devices approved for medical use. In principle, heavy medical machinery exams are not reimbursed in the ambulatory care sector.

Deviation from definition: Data correspond to the number of hospitals with CT scanners (rather than the number of CT scanners) until 2012.

Break in time series: 2013. From year 2013, data correspond to the number of CT scanners and no more to the number of hospitals with CT scanners.

### Magnetic Resonance Imaging units

#### Source of data:

*Hospital (HP.1):* **Federal Service of Public Health, DGGS** “Organisation of health provisions”; Ministry of the Flemish community and Ministry of the French community.

- Since 2016, data are based on the national registry for devices of medical image. Up to 2015, data were based on a hospital questionnaire.

*Ambulatory care providers (HP.3):* **Federal Agency for Nuclear control (FANC):** licenses delivered for use of nuclear machinery.

Reference period: 31<sup>st</sup> December.

#### Coverage:

- *Hospital (HP.1):* Until 2015, data are based on a hospital questionnaire and correspond to the number of hospitals with this technology. From 2016 onwards, data are based on a national registry and correspond to the number of devices.

- *Ambulatory care providers (HP.3):* In principle, heavy medical machinery exams are not reimbursed in the ambulatory care sector.

Deviation from definition: Data correspond to the number of hospitals with MRI units (rather than the number of MRI units) till 2015.

Break in time series: Since 2016, data are based on the national registry for devices of medical image and correspond to the number of MRI-devices. MRI units for clinical as for scientific use are included.

### Positron Emission Tomography scanners

#### Source of data:

*Hospital (HP.1):* **Federal Service of Public Health, DGGS** “Organisation of health provisions”; Ministry of the Flemish community and Ministry of the French community.

- Since 2016, data are based on the national registry for devices of medical image. Up to 2015, data were based on a hospital questionnaire.

*Ambulatory care providers (HP.3):* **Federal Agency for Nuclear control (FANC):** licenses delivered for use of nuclear machinery.

Reference period: 31<sup>st</sup> December.

Coverage:

HP1:

- *Hospital (HP.1):* Data correspond to the number of hospitals with this technology until 2012 and from 2013 to the number of PET-scanners (including PET-CT).

- *Ambulatory care providers (HP.3):* In principle, heavy medical machinery exams are not reimbursed in the ambulatory care sector.

Break in time-series: Since 2016, data are based on the national registry for devices of medical image. PET, PET-CT and PET-MRI are included.

### **Gamma cameras**

Source of data: **Federal Service of Public Health, DGGS** “Organisation of health provisions”; Ministry of the Flemish community and Ministry of the French community.

Coverage:

- *Ambulatory care providers (HP.3):* Data on high-tech equipment in cabinets of ambulatory care providers are not available.

### **Mammographs**

Source of data:

*Hospital (HP.1):* **Federal Service of Public Health, DGGS** “Organisation of health provisions”; Ministry of the Flemish community and Ministry of the French community.

*Ambulatory care providers (HP.3):* **Federal Agency for Nuclear Control (FANC).**

Coverage:

- *Ambulatory care providers (HP.3):* FANC: number of devices approved for medical use.

### **Radiation therapy equipment**

Source of data: **Federal Service of Public Health, DGGS** “Organisation of health provisions”; Ministry of the Flemish community and Ministry of the French community.

Reference period: 31<sup>st</sup> December.

Coverage:

- Data include simulator units, accelerator units, cobalt units, contact therapy and stereotactic radiotherapy.

- From 2013: Radiation therapy equipment = linear accelerator, cobalt units, units for rotation therapy, surface and contact therapy equipment, stereotactic radiotherapy equipment, intraoperative radiotherapy.

- Data correspond to the number of hospitals with this technology.

- Data on high-tech equipment in cabinets of ambulatory care providers are not available.

Deviation from definition: Data correspond to the number of hospitals with radiation therapy equipment (rather than the number of machines).

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Federal Service of Public Health, DG 1 “Organisation of health provisions”; Ministry of the Flemish community and Ministry of the French community.

Reference period: 31<sup>st</sup> December.

Coverage:

- Number of digital Subtraction Angiography units (DSA units): mono + biplan.
- Data on high-tech equipment in cabinets of ambulatory care providers are not available.
- Data correspond to the number of hospitals with this technology.

Deviation from definition: Data correspond to the number of hospitals with DSA units (rather than the number of DSA units).

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: **Federal Service of Public Health**, DG 1 “Organisation of health provisions”; Ministry of the Flemish community and Ministry of the French community.

Reference period: 31<sup>st</sup> December.

Coverage:

- Data on high-tech equipment in cabinets of ambulatory care providers are not available.
- Data correspond to the number of hospitals with this technology.

Deviation from definition: Data correspond to the number of hospitals with lithotriptors (rather than the number of lithotriptors).

## **Bulgaria**

### **Computed Tomography scanners**

Source of data: **National Centre for Public Health and Analyses at the Ministry of Health.**

Reference period: 31<sup>st</sup> of December.

Due to structural transformations in the health care system in 2011 the National Centre for Health Information was transform into National Centre for Public Health and Analyses.

Coverage: The study is with annual periodicity. All types of health establishments except hospices are included.

### **Magnetic Resonance Imaging units**

Source of data: **National Centre for Public Health and Analyses at the Ministry of Health.**

Due to structural transformations in the health care system in 2011 the National Centre for Health Information was transform into National Centre for Public Health and Analyses.

Reference period: 31<sup>st</sup> of December.

Note: The number of MRI units in hospitals decreases due to their transfer to the outpatient health establishments.

Coverage: The study is with annual periodicity. All types of health establishments except hospices are included.

### **Positron Emission Tomography scanners**

Source of data: **National Centre for Public Health and Analyses at the Ministry of Health.**

Reference period: 31<sup>st</sup> of December.

Due to structural transformations in the health care system in 2011 the National Centre for Health Information was transform into National Centre for Public Health and Analyses.

Coverage: The study is with annual periodicity. All types of health establishments except hospices are included.

### **Gamma cameras**

Source of data: **National Centre for Public Health and Analyses at the Ministry of Health.**

Reference period: 31st of December.

Due to structural transformations in the health care system in 2011 the National Centre for Health Information was transform into National Centre for Public Health and Analyses.

Coverage: The study is with annual periodicity. All types of health establishments except hospices are included.

Break in time series: 2009 data are not available.

Note: 2014: The increase of the number of these devices is related to the process of modernization of equipment of these health care facilities.

### **Mammographs**

Source of data: **National Centre for Public Health and Analyses at the Ministry of Health.**

Due to structural transformations in the health care system in 2011 the National Centre for Health Information was transform into National Centre for Public Health and Analyses.

Reference period: 31<sup>st</sup> of December.

Coverage: The study is with annual periodicity. All types of health establishments except hospices are included.

### **Radiation therapy equipment**

Source of data: **National Centre for Public Health and Analyses at the Ministry of Health.**

Due to structural transformations in the health care system in 2011 the National Centre for Health Information was transform into National Centre for Public Health and Analyses.

Reference period: 31<sup>st</sup> of December.

Coverage: The study is with annual periodicity. All types of health establishments except hospices are included.

Note: 2014: The increase of the number of these devices is related to the process of modernization of equipment of these health care facilities.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: National Centre for Public Health and Analyses at the Ministry of Health

Due to structural transformations in the health care system in 2011 the National Centre for Health Information was transform into National Centre for Public Health and Analyses

Reference period: 31st of December

Break in time series: 2009 and 2010 data are not available.

Coverage: The study is with annual periodicity. All types of health establishments except hospices are included.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: National Centre for Public Health and Analyses at the Ministry of Health  
Due to structural transformations in the health care system in 2011 the National Centre for Health Information was transformed into National Centre for Public Health and Analyses

Reference period: 31st of December

Coverage: The study is with annual periodicity. All types of health establishments except hospices are included.

## **Czechia**

### **Computed Tomography scanners**

Source of data: **Institute of Health Information and Statistics of the Czech Republic**; Survey on medical apparatus in health establishments.

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 1999, only establishments of health sector covered. From the year 2000, data cover all sectors.
- Data under HP.1 encompasses all bed care health establishments and HP.3 all other health establishments.

Break in time series: 2000.

### **Magnetic Resonance Imaging units**

Source of data: **Institute of Health Information and Statistics of the Czech Republic**; Survey on medical apparatus in health establishments.

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 1999, only establishments of the health sector covered. From the year 2000, data cover all sectors.
- Data under HP.1 encompasses all bed care health establishments and HP.3 all other health establishments.

Break in time series: 2000.

### **Positron Emission Tomography scanners**

Source of data: **Institute of Health Information and Statistics of the Czech Republic**; Survey on medical apparatus in health establishments.

Reference period: 31<sup>st</sup> December.

Coverage:

- From the year 2000, data cover all sectors.

### **Gamma cameras**

Source of data: **Institute of Health Information and Statistics of the Czech Republic**; Survey on medical apparatus in health establishments.

Reference period: 31<sup>st</sup> December.

Coverage:

- From the year 2000, data cover all sectors.

### **Mammographs**

Source of data: **Institute of Health Information and Statistics of the Czech Republic**; Survey on

medical apparatus in health establishments.

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 1999, only establishments of health sector covered. From the year 2000, data cover all sectors.
  - Data under HP.1 encompass all bed care health establishments and HP.3 all other health establishments.
  - From year 2014 data do not cover mammography machines in separate ambulatory gynaecology establishments (out of hospital).
- Break in time series: 2000, 2014.

### **Radiation therapy equipment**

Source of data: **Institute of Health Information and Statistics of the Czech Republic;** Survey on medical apparatus in health establishments.

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 1999, only establishments of health sector covered. From the year 2000, data cover all sectors.
  - Until 1999, data relate only to number of linear accelerators, Cobalt-60 units, Caesium-137 therapy units, circular accelerators (betatrons). Since 2000, data match the definition (Radioisotope irradiators AFL brachytherapeutic with LDR/MDR, Radioisotope irradiators AFL brachytherapeutic with HDR and Radioisotope irradiators not specified also included).
- Break in time series: 2000.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Institute of Health Information and Statistics of the Czech Republic; Survey on medical apparatus in health establishments.

Reference period: 31<sup>st</sup> December.

Coverage:

- From the year 2000, data covers all sectors.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Institute of Health Information and Statistics of the Czech Republic; Survey on medical apparatus in health establishments.

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 1999, only establishments of the health sector covered. From the year 2000, data cover all sectors.
- Break in time series: 2000.

## **Denmark**

### **Computed Tomography scanners**

Source of data: **Danish Health Authority, Radiation Protection.** National database of radiation sources (for all years)

Reference period: 31<sup>st</sup> of December.

Coverage: All scanners including those integrated in PET/CT scanners and SPECT/CT scanners are included. PET/CT scanners and SPECT/CT scanners are also included under PET scanners and gamma cameras, respectively.

### **Magnetic Resonance Imaging units**

Source of data: **National Board of health**, “The Scanner report”.

Reference period: 31<sup>st</sup> of December.

Coverage: The 2009 data have been provided by the Danish Regions.

### **Positron Emission Tomography scanners**

Source of data: **Danish Health Authority, Radiation Protection**. Annual survey of nuclear medicine equipment.

Reference period: 31<sup>st</sup> of December.

Coverage: In 2004 some PET/CTs might have been registered as gamma cameras, which could be the reason for the large changes in numbers of gamma cameras and PET units from 2004 till 2005.

### **Gamma cameras**

Source of data: **Danish Health Authority, Radiation Protection**. Annual survey of nuclear medicine equipment.

Reference period: 31<sup>st</sup> of December.

### **Mammographs**

Source of data: **Danish Health Authority, Radiation Protection**. National database of radiation sources (for all years).

Reference period: 31<sup>st</sup> of December.

### **Radiation therapy equipment**

Source of data: **Danish Health Authority, Radiation Protection**. National database of radiation sources (for all years), except for brachytherapy, where data is from Annual survey of equipment with radioactive sources.

Reference period: 31<sup>st</sup> of December.

Break in time series: Data until 2007 for RAD units include only linear accelerators. From 2008, all types are included.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

## **Germany**

## **Computed Tomography scanners**

### **Stationary sector:**

Source of data: **Federal Statistical Office**, Hospital statistics 2019 (basic data of hospitals and prevention or rehabilitation facilities); Statistisches Bundesamt 2021, *Fachserie 12, Reihe 6.1.1*, table 2.8.1 and internal tables; <http://www.destatis.de> or <http://www.gbe-bund.de>.

Reference period: 31<sup>st</sup> December.

#### Coverage:

- Data on medical technology includes equipment installed in all types of hospitals (HP.1) in all sectors (public, not-for-profit and private).

### **Ambulatory sector:**

Source of data: **German Electrical and Electronic Manufacturers' Association (ZVEI)**, Division "Medical Engineering"; special evaluation by the German Electrical and Electronic Manufacturers' Association.

See <http://www.zvei.org>.

#### Coverage:

- Data comprise the number of computed Tomography scanners (CT) installed in the ambulatory sector.

- From reporting year 2019 onwards, data on CTs installed in the ambulatory sector is no longer collected.

## **Magnetic Resonance Imaging units**

### **Stationary sector:**

Source of data: **Federal Statistical Office**, Hospital statistics 2019 (basic data of hospitals and prevention or rehabilitation facilities); Statistisches Bundesamt 2021, *Fachserie 12, Reihe 6.1.1*, table 2.8.1 and internal tables; <http://www.destatis.de> or <http://www.gbe-bund.de>.

Reference period: 31<sup>st</sup> December.

#### Coverage:

- Data on medical technology include equipment installed in all types of hospitals (HP.1) in all sectors (public, not-for-profit and private).

### **Ambulatory sector:**

Source of data: **German Electrical and Electronic Manufacturers' Association (ZVEI)**, Division "Medical Engineering"; special evaluation by the German Electrical and Electronic Manufacturers' Association.

See <http://www.zvei.org>.

#### Coverage:

- Data comprise the number of Magnetic Resonance Imaging units (MRI) installed in the ambulatory sector.

- From reporting year 2019 onwards, data on MRIs installed in the ambulatory sector is no longer collected.

## **Positron Emission Tomography scanners**

Source of data: **Federal Statistical Office**, Hospital statistics 2019 (basic data of hospitals and prevention or rehabilitation facilities); Statistisches Bundesamt 2021, *Fachserie 12, Reihe 6.1.1*, table 2.8.1 and internal tables; <http://www.destatis.de> or <http://www.gbe-bund.de>

Reference period: 31<sup>st</sup> December.

#### Coverage:

- Data on medical technology include equipment installed in all types of hospitals (HP.1) in all sectors (public, not-for-profit and private).
- Additional equipment in the ambulatory sector is not counted in official statistics.

### **Gamma cameras**

Source of data: **Federal Statistical Office**, Hospital statistics 2019 (basic data of hospitals and prevention or rehabilitation facilities); Statistisches Bundesamt 2021, Fachserie 12, Reihe 6.1.1, table 2.8.1 and internal tables; <http://www.destatis.de> or <http://www.gbe-bund.de>.

Reference period: 31<sup>st</sup> December.

Coverage:

- Data on medical technology include equipment installed in all types of hospitals (HP.1) in all sectors (public, not-for-profit and private).
- Additional equipment in the ambulatory sector is not counted in official statistics.
- Data before 2002 not available.

### **Mammographs**

Source of data: **Federal Statistical Office**, Hospital statistics 2019 (basic data of hospitals and prevention or rehabilitation facilities); Statistisches Bundesamt 2021, Fachserie 12, Reihe 6.1.1, table 2.8.1 and internal tables; <http://www.destatis.de> or <http://www.gbe-bund.de>.

Reference period: 31<sup>st</sup> December.

Coverage:

- Data on medical technology include equipment installed in all types of hospitals (HP.1) in all sectors (public, not-for-profit and private).
- Additional equipment in the ambulatory sector is not counted in official statistics.
- Data before 2018 not available.

### **Radiation therapy equipment**

Source of data: **Federal Statistical Office**, Hospital statistics 2019 (basic data of hospitals and prevention or rehabilitation facilities); Statistisches Bundesamt 2021, *Fachserie 12, Reihe 6.1.1*, table 2.8.1 and internal tables; <http://www.destatis.de> or <http://www.gbe-bund.de>.

Reference period: 31<sup>st</sup> December.

Coverage:

- Data on medical technology include equipment installed in all types of hospitals (HP.1) in all sectors (public, not-for-profit and private).
- Additional equipment in the ambulatory sector is not counted in official statistics.
- The figures comprise linear accelerators and Tele-Cobalt units.
- Caesium-137 therapy units, low to orthovoltage x-ray units, high dose and low dose rate brachytherapy units and conventional brachytherapy units are excluded.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Federal Statistical Office, Hospital statistics (basic data of hospitals and prevention or rehabilitation facilities); Statistisches Bundesamt, Fachserie 12, Reihe 6.1.1, table 2.8.1 and *ibid*, Fachserie 12, Reihe 6.1.2, table 2.6; <http://www.destatis.de> or <http://www.gbe-bund.de>.

Reference period: 31<sup>st</sup> December.

Coverage:

- Data on medical technology include equipment installed in all types of hospitals (HP.1) in all sectors (public, not-for-profit and private).

- Additional equipment in the ambulatory sector is not counted in official statistics.
- Data before 2002 not available.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Federal Statistical Office, Hospital statistics (basic data of hospitals and prevention or rehabilitation facilities); Statistisches Bundesamt, Fachserie 12, Reihe 6.1.1, table 2.8.1 and ibid, Fachserie 12, Reihe 6.1.2, table 2.6; <http://www.destatis.de> or <http://www.gbe-bund.de>.

Reference period: 31<sup>st</sup> December.

Coverage:

- Data on medical technology include equipment installed in all types of hospitals (HP.1) in all sectors (public, not-for-profit and private).
- Additional equipment in the ambulatory sector is not counted in official statistics.

## **Estonia**

### **Computed Tomography scanners**

Source of data: **National Institute for Health Development**, Department of Health Statistics since 2008.

Reference period: 31<sup>st</sup> of December.

Validity of the source:

- Valid since 2005.
- Data on equipment were not collected routinely before 2005. Since 2006 data have been included in the annual reports of health care providers.
- The devices may also include combined devices like SPECT-CT, and it is possible that up to 2014 these devices are counted under both categories (i.e., under SPECT and CT units). The number of combined devices is not available. The first combined devices were purchased in 2007.
- From 2015 the combined devices SPECT-CT are counted only under Gamma cameras (SPECT) and PET-CT devices are counted under PET category only.

Coverage:

- All providers. Since 2006 data have been included in the annual statistical report "Health Care Provider".
- Devices rented from foreign firms are excluded, although the service is provided by Estonian health care providers.
- Data are collected from hospitals and ambulatory care providers. Due to the changes in the HP coding in 2014 according to the SHA2011 some providers, previously classified under HP3, were classified under HP4. To avoid data loss since 2014 also HP4 providers are included under category "ambulatory care".

Break in time series: From 2015, the combined devices SPECT-CT are counted only under Gamma cameras (SPECT) and PET-CT devices are counted under PET category only.

### **Magnetic Resonance Imaging units**

Source of data: **National Institute for Health Development**, Department of Health Statistics since 2008.

Reference period: 31<sup>st</sup> of December.

Validity of the source:

- Valid since 2005.

- Data on equipment were not collected routinely before 2005. Since 2006 data have been included in the annual reports of health care providers.
- The devices may also include combined devices like PET-MRI, and it is possible that up to 2014 these devices are counted under both categories (i.e., under PET and MRI units). The number of combined devices is not available. The first combined devices were purchased in 2007.
- From 2015 the combined devices PET-MRI are counted under PET category only.

Coverage:

- All providers. Since 2006 data have been included in the annual reports (“Health Care Provider”).
- Devices rented from foreign firms are excluded, although the service is provided by Estonian health care providers.
- Data are collected from hospitals and ambulatory care providers. Due to the changes in the HP coding in 2014 according to the SHA2011 some providers, previously classified under HP3, were classified under HP4. To avoid data loss since 2014 also HP4 providers are included under category “ambulatory care”.

### **Positron Emission Tomography scanners**

Source of data: **National Institute for Health Development**, Department of Health Statistics since 2008.

Reference period: 31<sup>st</sup> of December.

Validity of the source:

- Valid since 2005.
- Data on equipment were not collected routinely before 2005. Since 2006 data have been included in the annual reports of health care providers.
- The devices may also include combined devices like PET-CT, and it is possible that up to 2014 these devices are counted under both categories (i.e., under PET and CT units). The number of combined devices is not available. The first combined devices were purchased in 2007.
- From 2015 the combined devices PET-CT and PET-MRI are counted under PET category only.

Coverage:

- All providers. Since 2006 data have been included in the annual reports (“Health Care Provider”).
- Devices rented from foreign firms are excluded, although the service is provided by Estonian health care providers.
- Data are collected from hospitals and ambulatory care providers. Due to the changes in the HP coding in 2014 according to the SHA2011 some providers, previously classified under HP3, were classified under HP4. To avoid data loss since 2014 also HP4 providers are included under category “ambulatory care”.

### **Gamma cameras**

Source of data: **National Institute for Health Development**, Department of Health Statistics since 2008.

Reference period: 31<sup>st</sup> of December.

Validity of the source:

- Valid since 2005.
- Data on equipment were not collected routinely before 2005. Since 2006 data have been included in the annual reports of health care providers.
- The devices may also include combined devices like SPECT-CT, and it is possible that up to 2014 these devices are counted under both categories (i.e., under SPECT and CT units). The number of combined devices is not available. The first combined devices were purchased in 2007. From 2015 the combined devices SPECT-CT are counted only under Gamma cameras (SPECT) category.

Coverage:

- All providers. Since 2006, data have been included in the annual reports (“Health Care Provider”).
- Devices rented from foreign firms are excluded, although the service is provided by Estonian health care providers.
- Data are collected from hospitals and ambulatory care providers. Due to the changes in the HP coding in 2014 according to the SHA2011 some providers, previously classified under HP3, were classified under HP4. To avoid data loss since 2014 also HP4 providers are included under category “ambulatory care”.

**Mammographs**

Source of data: **National Institute for Health Development**, Department of Health Statistics since 2008.

Reference period: 31<sup>st</sup> of December.

Validity of the source:

- Valid since 2013.
- Data on equipment were not collected routinely before 2013. Since 2013 data have been included in the annual reports of health care providers.

Coverage:

- All providers. Since 2013, data have been included in the annual reports (“Health Care Provider”).
- Devices rented from foreign firms are excluded, although the service is provided by Estonian health care providers.
- Data are collected from hospitals and ambulatory care providers. Due to the changes in the HP coding in 2014 according to the SHA2011 some providers, previously classified under HP3, were classified under HP4. To avoid data loss since 2014 also HP4 providers are included under category “ambulatory care”.

**Radiation therapy equipment**

Source of data: **National Institute for Health Development**, Department of Health Statistics since 2008.

Reference period: 31<sup>st</sup> of December.

Validity of the source:

- Valid since 2005.
- Data on equipment were not collected routinely before 2005. Since 2006 data have been included in the annual reports of health care providers.

Coverage:

- All providers. Since 2006, data have been included in the annual reports (“Health Care Provider”).
- Devices rented from foreign firms are excluded, although the service is provided by Estonian health care providers.
- Data are collected from hospitals and ambulatory care providers. Due to the changes in the HP coding in 2014 according to the SHA2011 some providers, previously classified under HP3, were classified under HP4. To avoid data loss since 2014 also HP4 providers are included under category “ambulatory care”.

**Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: National Institute for Health Development, Department of Health Statistics since 2008.

Validity of the source:

- Valid since 2005.
- Data on equipment were not collected routinely before 2005. Since 2006 data have been included in the annual reports of health care providers.

Reference period: 31<sup>st</sup> of December.

Coverage:

- All providers. Since 2006 data have been included in the annual reports (“Health Care Provider”).
- Devices rented from foreign firms are excluded, although the service is provided by Estonian health care providers.
- Data are collected from hospitals and ambulatory care providers. Due to the changes in the HP coding in 2014 according to the SHA2011 some providers, previously classified under HP3, were classified under HP4. To avoid data loss since 2014 also HP4 providers are included under category “ambulatory care”.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: National Institute for Health Development, Department of Health Statistics since 2008.

Validity of the source:

- Valid since 2005.
- Data on equipment were not collected routinely before 2005. Since 2006 data have been included in the annual reports of health care providers.

Reference period: 31<sup>st</sup> of December.

Coverage:

- All providers. Since 2006 data have been included in the annual reports (“Health Care Provider”).
- Devices rented from foreign firms are excluded, although the service is provided by Estonian health care providers.
- Data are collected from hospitals and ambulatory care providers. Due to the changes in the HP coding in 2014 according to the SHA2011 some providers, previously classified under HP3, were classified under HP4. To avoid data loss since 2014 also HP4 providers are included under category “ambulatory care”.

## **Ireland**

### **Computed Tomography scanners**

Source of data: **Environmental Protection Agency.**

Reference period: End of each calendar year.

Coverage:

- All figures are taken from the EPA’s licensing database and were calculated at the end of each calendar year. Figures reflect the number of machines licensed by the EPA in Ireland. Under the licensing system used, the EPA assigns purposes to each item of equipment which indicates the clinical use of that item e.g. mammography, fluoroscopy, CT etc. This designation is based upon data supplied from equipment users. Therefore, the figures reflect how they describe the equipment.
- The figure for CT scanning units does not include PET/CT, SPEC/CT scanners or CT Scanners used for radiotherapy simulation (in addition to the figure quoted for CT units, there are seven CT scanners used for both CT and radiotherapy simulation, thirteen SPEC/CT units and six dedicated radiotherapy simulators).

### **Magnetic Resonance Imaging units**

Source of data:

- From 2009: **Irish Association of Physicists in Medicine.**
- Up to 2008: **Siemens, Ireland.**

### **Positron Emission Tomography scanners**

Source of data: **Environmental Protection Agency.**

Reference period: End of each calendar year.

Coverage:

- All figures are taken from the EPA's licensing database and were calculated at the end of each calendar year. Figures reflect the number of machines licensed by the EPA in Ireland. Under the licensing system used, the EPA assigns purposes to each item of equipment which indicates the clinical use of that item e.g. mammography, fluoroscopy, CT etc. This designation is based upon data supplied from equipment users. Therefore, the figures reflect how they describe the equipment.

### **Gamma cameras**

Source of data:

From 2017: National Clinical Head of Medical Devices, (HSE) for Public Hospitals, Department of Health for Private Hospitals.

**Pre 2017: Department of Health.**

Reference period: End of each calendar year.

Coverage: Refers to the number of Gamma cameras in the 21 Nuclear Medicine Departments in both public and private hospitals.

### **Mammographs**

Source of data: **Environmental Protection Agency.**

Reference period: End of each calendar year.

Coverage:

- All figures are taken from the EPA's licensing database and were calculated at the end of each calendar year. Figures reflect the number of machines licensed by the EPA in Ireland. Under the licensing system used, the EPA assigns purposes to each item of equipment which indicates the clinical use of that item e.g. mammography, fluoroscopy, CT etc. This designation is based upon data supplied from equipment users. Therefore, the figures reflect how they describe the equipment.

### **Radiation therapy equipment**

Source of data: **Environmental Protection Agency.**

Reference period: End of each calendar year.

Coverage:

- All figures are taken from the EPA's licensing database and were calculated at the end of each calendar year. Figures reflect the number of machines licensed by the EPA in Ireland. Under the licensing system used, the EPA assigns purposes to each item of equipment which indicates the clinical use of that item e.g. mammography, fluoroscopy, CT etc. This designation is based upon data supplied from equipment users. Therefore, the figures reflect how they describe the equipment.

- For Radiation therapy equipment, the total figure is made up of 35 linear accelerators, one Cyberknife, five Ir-192 brachytherapy units, one X-ray brachytherapy unit and four low/ortho voltage units.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Environmental Protection Agency.

Reference period: End of each calendar year.

Coverage:

- All figures are taken from the EPA's licensing database and were calculated at the end of each calendar year. Figures reflect the number of machines licensed by the EPA in Ireland. Under the licensing system used, the EPA assigns purposes to each item of equipment which indicates the clinical use of that item e.g. mammography, fluoroscopy, CT etc. This designation is based upon data supplied from equipment users. Therefore, the figures reflect how they describe the equipment.
- The number of lithotripsy would be included in the number of fluoroscopy units. There is one licensee who supplies external mobile lithotripsy services to hospitals. Only six units are recorded as having a purpose of "lithotripsy". There may be other units in use but these may have other purposes assigned by the licensee.

## **Greece**

### **Computed Tomography scanners**

Source of data: **The Greek Atomic Energy Commission (for HP1+HP3) and the Hospital Census of ELSTAT (HP1).**

Coverage: Country Total.

### **Magnetic Resonance Imaging units**

Source of data: **The Greek Atomic Energy Commission (for HP1+HP3) and the Hospital Census of ELSTAT (HP1).**

Coverage: Country Total.

### **Positron Emission Tomography scanners**

Source of data: **The Greek Atomic Energy Commission (for HP1+HP3) and the Hospital Census of ELSTAT (HP1).**

Coverage: Country Total.

### **Gamma cameras**

Source of data: **The Greek Atomic Energy Commission (for HP1+HP3) and the Hospital Census of ELSTAT (HP1).**

Coverage: Country Total.

### **Mammographs**

Source of data: **The Greek Atomic Energy Commission (for HP1+HP3) and the Hospital Census of ELSTAT (HP1).**

Coverage: Country Total.

## **Radiation therapy equipment**

Source of data: **The Greek Atomic Energy Commission (for HP1+HP3) and the Hospital Census of ELSTAT (HP1).**

Coverage: Country Total.

## **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Healthcare Technology Consultation Centre.

Coverage: The number of angiography units (120 in 2013) consists of 72 catheterization systems and 48 angiography systems.

## **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Healthcare Technology Consultation Centre

## **Spain**

### **Computed Tomography scanners**

Source of data:

- 1984 and 1988: Pablo Lázaro y de Mercado. "Evaluación de Servicios Sanitarios: La Alta Tecnología en España". **Fondo de Investigaciones Sanitarias de la Seguridad Social (F.I.S).**

- From 1992 to 2009: **Ministry of Health** from National Catalogue of Hospitals (several issues).

- Since 2010: **Ministry of Health** from **Specialised Care Information System** (Sistema de Información de Atención Especializada - SIAE).

<http://www.msrebs.gob.es/estadEstudios/estadisticas/estHospilInternado/inforAnual/homeESCRI.htm>

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 2009, data from National Catalogue of Hospitals relate only to devices available in hospitals; they do not include equipment in other health care facilities.

- Since 2010, data are available for equipment in hospitals and ambulatory sector.

Break in time series: 1992 and 2010.

- Change in data source.

- Information about medical technology and diagnostic activity for centres HP.3 included since 2010.

### **Magnetic Resonance Imaging units**

Source of data:

- 1984 and 1988: Pablo Lázaro y de Mercado. "Evaluación de Servicios Sanitarios: La Alta Tecnología en España". **Fondo de Investigaciones Sanitarias de la Seguridad Social (F.I.S).**

- From 1992 to 2009: **Ministry of Health** from National Catalogue of Hospitals (several issues).

- Since 2010: **Ministry of Health** from **Specialised Care Information System** (Sistema de Información de Atención Especializada - SIAE).

<http://www.msrebs.gob.es/estadEstudios/estadisticas/estHospilInternado/inforAnual/homeESCRI.htm>

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 2009, data from National Catalogue of Hospitals relate only to devices available in hospitals;

they do not include equipment in other health care facilities.

- Since 2010, data are available for equipment in hospitals and ambulatory sector.

Break in time series: 1992 and 2010.

- Change in data source.

- Information about medical technology and diagnostic activity for centres HP.3 included since 2010.

### **Positron Emission Tomography scanners**

Source of data:

- Up to 2009: **Ministry of Health** from **National Catalogue of Hospitals** (several issues)..

- Since 2010: **Ministry of Health** from **Specialised Care Information System** (Sistema de Información de Atención Especializada - SIAE).

<http://www.mscbs.gob.es/estadEstudios/estadisticas/estHospilInternado/inforAnual/homeESCRI.htm>

.

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 2009, data relate only to devices available in hospitals; they do not include equipment in other health care facilities.

- Since 2010, data are available for equipment in hospitals and ambulatory sector.

Break in time series: 2010.

- Change in data source.

- Information about medical technology and diagnostic activity for centres HP.3 included since 2010.

### **Gamma cameras**

Source of data:

- Up to 2009: **Ministry of Health** from **National Catalogue of Hospitals** (several issues)..

- Since 2010: **Ministry of Health** from **Specialised Care Information System** (Sistema de Información de Atención Especializada - SIAE).

<http://www.mscbs.gob.es/estadEstudios/estadisticas/estHospilInternado/inforAnual/homeESCRI.htm>

.

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 2009, data relate only to devices available in hospitals; they do not include equipment in other health care facilities.

- Since 2010, data are available for equipment in hospitals and ambulatory sector.

Break in time series: 2010.

- Change in data source.

- Information about medical technology and diagnostic activity for centres HP.3 included since 2010.

### **Mammographs**

Source of data:

- 2003 2004: **Ministerio de Economía y Hacienda – Ministerio de Sanidad**. Figures from “Informe del Grupo de Trabajo del Gasto Sanitario Público 2005”.

<http://www.msc.es/estadEstudios/estadisticas/sisInfSanSNS/pdf/IGTGS2005.pdf>.

- From 2006 to 2009: **Ministry of Health** from **National Catalogue of Hospitals** (several issues)..

- Since 2010: **Ministry of Health** from **Specialised Care Information System** (Sistema de Información de Atención Especializada - SIAE).

<http://www.mscbs.gob.es/estadEstudios/estadisticas/estHospilInternado/inforAnual/homeESCRI.htm>

.

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 2009, data relate only to devices available in hospitals; they do not include equipment in other health care facilities.

- Since 2010, data are available for equipment in hospitals and ambulatory sector.

Break in time series: 2006, 2010.

- Change in data source.

- Information about medical technology and diagnostic activity for centres HP.3 included since 2010.

### **Radiation therapy equipment**

Source of data:

- 1984 and 1988: Pablo Lázaro y de Mercado. "Evaluación de Servicios Sanitarios: La Alta Tecnología en España". **Fondo de Investigaciones Sanitarias de la Seguridad Social (F.I.S).**

- From 1992 to 2009: **Ministry of Health from National Catalogue of Hospitals** (several issues).

- Since 2010: **Ministry of Health from Specialised Care Information System** (Sistema de Información de Atención Especializada - SIAE).

<http://www.msrebs.gob.es/estadEstudios/estadisticas/estHospilInternado/inforAnual/homeESCRI.htm>

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 2009, data from National Catalogue of Hospitals relate only to devices available in hospitals; they do not include equipment in other health care facilities.

- Since 2010, data are available for equipment in hospitals and ambulatory sector.

Break in time series: 1992 and 2010.

- Change in data source.

- Information about medical technology and diagnostic activity for centres HP.3 included since 2010.

### **Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

- Up to 2009: Ministry of Health, Social Services and Equity from National Catalogue of Hospitals (several issues).

<http://www.msc.es/ciudadanos/prestaciones/centrosServiciosSNS/hospitales/home.htm>.

- Since 2010: Ministry of Health, Social Services and Equity from Specialised Care Information System (Sistema de Información de Atención Especializada - SIAE).

Reference period: 31<sup>st</sup> December.

Coverage:

- Until 2009, data relate only to devices available in hospitals; they do not include equipment in other health care facilities.

- Since 2010, data are available for equipment in hospitals and ambulatory sector.

Break in time series: 2010.

- Change in data source.

- Information about medical technology and diagnostic activity for centres HP.3 included since 2010.

### **Lithotriptors:**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

- 1988: Pablo Lázaro y de Mercado. "Evaluación de Servicios Sanitarios: La Alta Tecnología en España". Fondo de Investigaciones Sanitarias de la Seguridad Social (F.I.S).

- From 1992 to 2009: Ministry of Health, Social Services and Equity from National Catalogue of Hospitals (several issues).  
<http://www.msc.es/ciudadanos/prestaciones/centrosServiciosSNS/hospitales/home.htm>.
  - Since 2010: Ministry of Health, Social Services and Equity from Specialised Care Information System (Sistema de Información de Atención Especializada - SIAE).
- Reference period: 31<sup>st</sup> December.
- Coverage:
- Until 2009, data from National Catalogue of Hospitals relate only to devices available in hospitals; they do not include equipment in other health care facilities.
  - Since 2010, data are available for equipment in hospitals and ambulatory sector.
- Break in time series: 1992 and 2010.
- Change in data source.
  - Information about medical technology and diagnostic activity for centres HP.3 included since 2010.

## France

### Computed Tomography scanners

Source of data: **Ministère des Solidarités et de la Santé - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques** (DREES). Data are from FINESS.

Reference period: Equipment in service during the year (not necessarily during the whole year).

Coverage: Data refer to metropolitan France and D.O.M. (overseas departments).

Break in time series: 2015, 2019.

- During the year 2015, the source of data FINESS has been improved concerning the equipment: the source keeps now a better record of all the equipment actually in use. This improvement results in a higher number of equipment for 2015.
- Count of equipment in FINESS data changed in 2019: the repartition between ambulatory care equipment and hospital equipment has changed.

### Magnetic Resonance Imaging units

Source of data: **Ministère des Solidarités et de la Santé - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques** (DREES). Data are from FINESS.

Reference period: Equipment in service during the year (not necessarily during the whole year).

Coverage: Data refer to metropolitan France and D.O.M. (overseas departments).

Break in time series: 2015, 2019.

- During the year 2015, the source of data FINESS has been improved concerning the equipment: the source keeps now a better record of all the equipment actually in use. This improvement results in a higher number of equipment for 2015.
- Count of equipments in FINESS data changed in 2019: the repartition between ambulatory care equipment and hospital equipment has changed.

### Positron Emission Tomography scanners

Source of data: **Ministère des Solidarités et de la Santé - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques** (DREES). Data are from FINESS.

Reference period: Equipment in service during the year (not necessarily during the whole year).

Coverage: Data refer to metropolitan France and D.O.M. (overseas departments).

Break in time series: 2015, 2019.

- During the year 2015, the source of data FINESS has been improved concerning the equipment: the source keeps now a better record of all the equipment actually in use. This improvement results in a higher number of equipment for 2015.
- Count of equipment in FINESS data changed in 2019: the repartition between ambulatory care equipment and hospital equipment has changed.

### **Gamma cameras**

Source of data: **Ministère des Solidarités et de la Santé - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques** (DREES). Data are from FINESS.

Reference period: Equipment in service during the year (not necessarily during the whole year).

Coverage: Data refer to metropolitan France and D.O.M. (overseas departments).

Break in time series: 2015, 2019.

- During the year 2015, the source of data FINESS has been improved concerning the equipment: the source keeps now a better record of all the equipment actually in use. This improvement results in a higher number of equipment for 2015.
- Count of equipment in FINESS data changed in 2019: the repartition between ambulatory care equipment and hospital equipment has changed.

### **Mammographs**

Source of data: **Ministère des Solidarités et de la Santé - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques** (DREES). Data are from the "Statistique Annuelle des Établissements de santé (SAE)" from 2013 onwards.

Note: This survey has been recasted in 2014 for the data concerning 2013 onwards (review and update of the questionnaire, change of the unit surveyed [from legal entity to geographical establishment], improvement of the consistency between the survey and an administrative Source of data on the activity of hospitals). Though the principles of the survey remain the same, some concepts and some questions have changed. This led us to collect new data on Mammographs from 2013 onwards.

Reference period: Equipment in service during the year (not necessarily during the whole year).

Coverage: Data refer to metropolitan France and D.O.M. (overseas departments).

### **Radiation therapy equipment**

Source of data: **Ministère des Solidarités et de la Santé - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques** (DREES). Data are from the "Statistique Annuelle des Établissements de santé (SAE)".

Note: This survey has been recasted in 2014 for the data concerning 2013 onwards (review and update of the questionnaire, change of the unit surveyed [from legal entity to geographical establishment], improvement of the consistency between the survey and an administrative Source of data on the activity of hospitals). Though the principles of the survey remain the same, some concepts and some questions have changed: this can lead to break in series for the year 2013.

Reference period: Equipment in service during the year (not necessarily during the whole year).

Coverage: Data refer to metropolitan France and D.O.M. (overseas departments).

Break in time series: before the SAE survey was recasted, adding the number of hospitals equipped with accelerators or brachytherapy units could result in double counting, so it was tried to correct the double counting: the result of this work was considered as an estimation. Since 2013, the risk of double counting is very limited, that is why it was decided to add the two types of equipment, and to indicate a break in series.

## **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Ministère de la Santé et des Sports - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques (DREES). Data are from FINESS until 2003 and from the "Statistique Annuelle des Établissements de santé (SAE)" from 2004 onwards.

Note: This survey has been recasted in 2014 for the data concerning 2013 onwards (review and update of the questionnaire, change of the unit surveyed [from legal entity to geographical establishment], improvement of the consistency between the survey and an administrative Source of data on the activity of hospitals). Though the principles of the survey remain the same, some concepts and some questions have changed: this can lead to break in series for the year 2013.

Reference period: Equipment in service during the year (not necessarily during the whole year).

Coverage: Data refer to metropolitan France and D.O.M. (overseas departments).

Break in series: The first hypothesis to explain the break in series observed is a higher rate of non-response to this particular question for 2013. Perhaps is it due to the importance of the recast of the SAE survey, which demanded big efforts to the team in charge of filling the questionnaire in each hospital.

## **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Ministère de la Santé et des Sports - Direction de la Recherche, des Études, de l'Évaluation et des Statistiques (DREES). Data are from the "Statistique Annuelle des Établissements de santé (SAE)".

Note: This survey has been recasted in 2014 for the data concerning 2013 onwards (review and update of the questionnaire, change of the unit surveyed [from legal entity to geographical establishment], improvement of the consistency between the survey and an administrative Source of data on the activity of hospitals). Though the principles of the survey remain the same, some concepts and some questions have changed: this can lead to break in series for the year 2013.

Reference period: Equipment in service during the year (not necessarily during the whole year).

Coverage: Data refer to metropolitan France and D.O.M. (overseas departments).

Break in time series: The first hypothesis to explain the break in series observed is a higher rate of non-response to this particular question for 2013. Perhaps is it due to the importance of the recast of the SAE survey, which demanded big efforts to the team in charge of filling the questionnaire in each hospital.

## **Croatia**

### **Computed Tomography scanners**

Source of data: **Croatian Institute of Public Health**, Medical Equipment Database.

Reference period: 31<sup>st</sup> December.

Coverage: Data includes CT units in all public and private hospitals and other health care providers in Croatia, except prison hospital.

### **Magnetic Resonance Imaging units**

Source of data: **Croatian Institute of Public Health**, Medical Equipment Database.

Reference period: 31<sup>st</sup> December.

Coverage: Data includes MRI units in all public and private hospitals and other health care providers in Croatia, except prison hospital.

### **Positron Emission Tomography scanners**

Source of data: **Croatian Institute of Public Health**, Medical Equipment Database.

Reference period: 31<sup>st</sup> December.

Coverage: Data includes PET units in all public and private hospitals and other health care providers in Croatia, except prison hospital.

### **Gamma cameras**

Source of data: **Croatian Institute of Public Health**, Medical Equipment Database.

Reference period: 31<sup>st</sup> December.

Coverage: Data includes Gamma cameras (including SPECT) and SPECT/CT in all public and private hospitals and other health care providers in Croatia, except prison hospital.

### **Mammographs**

Source of data: **Croatian Institute of Public Health**, Medical Equipment Database.

Reference period: 31<sup>st</sup> December.

Coverage: Data includes CT Mammographs in all public and private hospitals and other health care providers in Croatia, except prison hospital.

### **Radiation therapy equipment**

Source of data: **Croatian Institute of Public Health**, Medical Equipment Database.

Reference period: 31<sup>st</sup> December.

Coverage: Data includes Radiation therapy equipment in all public and private hospitals and other health care providers in Croatia, except prison hospital.

Deviation from the definition: Until 2012 included only linear accelerators and brachytherapy systems (Cobalt-60 units, Caesium-137 units and x-ray units were **not included**). Since 2013 includes also Cobalt-60 units, Caesium-137 units and x-ray units.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Croatian Institute of Public Health, Medical Equipment Database

Reference period: 31<sup>st</sup> December

Coverage: Data includes DSA units in all public and private hospitals and other health care providers in Croatia, except prison hospital.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Croatian Institute of Public Health, Medical Equipment Database

Reference period: 31<sup>st</sup> December

Coverage: Data includes Lithotriptors in all public and private hospitals and other health care providers in Croatia, except prison hospital.

## Italy

### **Computed Tomography scanners**

Source of data: **Ministry of Health** - General Directorate of digitalisation, health information system and statistics - **Office of Statistics.** [www.salute.gov.it/statistiche](http://www.salute.gov.it/statistiche).

Reference period: 1<sup>st</sup> January.

Coverage: Available equipment both in hospital and territorial facilities is counted. Territory private facilities not accredited by the National Health Service are not covered. However, data on equipment in hospitals refer to both public and private hospitals, including private hospitals not accredited by the National Health Service.

### **Magnetic Resonance Imaging units**

Source of data: **Ministry of Health** - General Directorate of digitalisation, health information system and statistics - **Office of Statistics.** [www.salute.gov.it/statistiche](http://www.salute.gov.it/statistiche).

Reference period: 1<sup>st</sup> January.

Coverage: Available equipment both in hospital and territorial facilities is counted. Territory private facilities not accredited by the National Health Service are not covered. However, data on equipment in hospitals refer to both public and private hospitals, including private hospitals not accredited by the National Health Service.

### **Positron Emission Tomography scanners**

Source of data: **Ministry of Health** - General Directorate of digitalisation, health information system and statistics - **Office of Statistics.** [www.salute.gov.it/statistiche](http://www.salute.gov.it/statistiche).

Reference period: 1<sup>st</sup> January.

Coverage:

- Data on DSA, PET and mammography units were available for the first time in 2007.
- Pet units include a modern PET-CT unit system that uses image fusion-superposition of CT and PET images.
- Available equipment both in hospital and territorial facilities is counted. Territory private facilities not accredited by the National Health Service are not covered. However, data on equipment in hospitals refer to both public and private hospitals, including private hospitals not accredited by the National Health Service.

### **Gamma cameras**

Source of data: **Ministry of Health** - General Directorate of digitalisation, health information system and statistics - **Office of Statistics.** [www.salute.gov.it/statistiche](http://www.salute.gov.it/statistiche).

Reference period: 1<sup>st</sup> January.

Coverage: Available equipment both in hospital and territorial facilities is counted. Territory private facilities not accredited by the National Health Service are not covered. However, data on equipment in hospitals refer to both public and private hospitals, including private hospitals not accredited by the National Health Service.

### **Mammographs**

Source of data: **Ministry of Health** - General Directorate of digitalisation, health information system and statistics - **Office of Statistics.** [www.salute.gov.it/statistiche](http://www.salute.gov.it/statistiche).

Reference period: 1<sup>st</sup> January.

Coverage:

- Data on DSA, PET and mammography units were available for the first time in 2007.
- Available equipment both in hospital and territorial facilities is counted. Territory private facilities not accredited by the National Health Service are not covered. However, data on equipment in hospitals refer to both public and private hospitals, including private hospitals not accredited by the National Health Service.

**Radiation therapy equipment**

Source of data: **Ministry of Health** - General Directorate of digitalisation, health information system and statistics - **Office of Statistics**. [www.salute.gov.it/statistiche](http://www.salute.gov.it/statistiche).

Reference period: 1<sup>st</sup> January.

Coverage:

- For RAD units, only linear accelerator accounting is available.
- Available equipment both in hospital and territorial facilities is counted. Territory private facilities not accredited by the National Health Service are not covered. However, data on equipment in hospitals refer to both public and private hospitals, including private hospitals not accredited by the National Health Service.

**Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Ministry of Health - General Directorate of digitalisation, health information system and statistics - Office of Statistics. [www.salute.gov.it/statistiche](http://www.salute.gov.it/statistiche).

Reference period: 1st January.

Coverage:

- Data on DSA, PET and mammography units were available for the first time in 2007.
- Available equipment both in hospital and territorial facilities is counted. Territory private facilities not accredited by the National Health Service are not covered. However, data on equipment in hospitals refer to both public and private hospitals, including private hospitals not accredited by the National Health Service.

**Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

**Cyprus**

**Computed Tomography scanners**

Source of data:

Up to 2004: **Nicosia General Hospital**, Medical Physics Department.

From 2005: **Ministry of Labour and Social Insurance**, Department of Labour Inspection, Radiation Inspections and Control Service.

Reference period: 31<sup>st</sup> December.

**Magnetic Resonance Imaging units**

Source of data:

Up to 2004; **Nicosia General Hospital**, Medical Physics Department.

From 2005: **Ministry of Labour and Social Insurance**, Department of Labour Inspection, Radiation Inspections and Control Service.  
Reference period: 31<sup>st</sup> December.

### **Positron Emission Tomography scanners**

Source of data:

Up to 2004: **Nicosia General Hospital**, Medical Physics Department.

From 2005: **Ministry of Labour and Social Insurance**, Department of Labour Inspection, Radiation Inspections and Control Service.

Reference period: 31<sup>st</sup> December.

### **Gamma cameras**

Source of data:

Up to 2004: **Nicosia General Hospital**, Medical Physics Department.

From 2005: **Ministry of Labour and Social Insurance**, Department of Labour Inspection, Radiation Inspections and Control Service.

Reference period: 31<sup>st</sup> December.

### **Mammographs**

Source of data: **Ministry of Labour and Social Insurance**, Department of Labour Inspection, Radiation Inspections and Control Service.

Reference period: 31<sup>st</sup> December.

Estimation method:

- As regards years 2000-2004 the numbers are not actual, they have been estimated from the Department of Labour Inspection.

- Number of mammography equipment refers to number of dedicated mammography equipment (those designed exclusively for taking mammograms). The code is: CIM-9 87.37.

### **Radiation therapy equipment**

Source of data:

Up to 2004: **Nicosia General Hospital**, Medical Physics Department.

From 2005: **Ministry of Labour and Social Insurance**, Department of Labour Inspection, Radiation Inspections and Control Service.

Reference period: 31<sup>st</sup> December.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

Up to 2004: **Nicosia General Hospital**, Medical Physics Department.

From 2005: **Ministry of Labour and Social Insurance**, Department of Labour Inspection, Radiation Inspections and Control Service.

Reference period: 31<sup>st</sup> December

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

Up to 2004: Nicosia General Hospital, Medical Physics Department.

From 2005: Ministry of Labour and Social Insurance, Department of Labour Inspection, Radiation Inspections and Control Service.

Reference period: 31st December

## **Latvia**

### **Computed Tomography scanners**

Source of data: **Centre for Disease Prevention and Control**; State Statistical Report.

Reference period: 31<sup>st</sup> December.

Coverage:

- In 2021, data for 2003-2019 have been recalculated according to the definition.
- The number of CT in HP.3 institutions also include CT in HP.4.2 institutions.

### **Magnetic Resonance Imaging units**

Source of data: **Centre for Disease Prevention and Control**; State Statistical Report.

Reference period: 31<sup>st</sup> December.

Coverage:

- In 2021, data for 2003-2019 have been recalculated according to the definition.
- The number of MRI in HP.3 institutions also include MRI in HP.4.2 institutions.

### **Positron Emission Tomography scanners**

Source of data: **Centre for Disease Prevention and Control**; State Statistical Report.

Reference period: 31<sup>st</sup> December.

### **Gamma cameras**

Source of data: **Centre for Disease Prevention and Control**; State Statistical Report.

Reference period: 31<sup>st</sup> December.

Coverage:

- In 2021, data for 2003-2019 have been recalculated according to the definition.

### **Mammographs**

Source of data: **Centre for Disease Prevention and Control**; State Statistical Report.

Reference period: 31<sup>st</sup> December.

Coverage:

- In 2021, data for 2003-2019 have been recalculated according to the definition.
- The number of mammographs in HP.3 institutions also include mammographs in HP.4.2 institutions.

### **Radiation therapy equipment**

Source of data: **Centre for Disease Prevention and Control**; State Statistical Report.

Reference period: 31<sup>st</sup> December.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Centre for Disease Prevention and Control; Statistical Report no.49 "About Diagnostic Radiology".

Reference period: 31 December.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Centre for Disease Prevention and Control; Statistical Report no.49 "About Diagnostic Radiology".

Reference period: 31 December.

## **Lithuania**

### **Computed Tomography scanners**

Source of data: **Radiation Protection Centre.** Report "Health Statistics of Lithuania", available from <http://www.hi.lt/health-statistic-of-lithuania.html>.

Reference period: 31<sup>st</sup> December.

Coverage: The number of licensed equipment. Since 2007 – the number of functioning equipment , excluding dental CT.

Break in time series: 2007.

### **Magnetic Resonance Imaging units**

Source of data: **Health Information Centre of Institute of Hygiene,** data of entire annual survey of health establishments. Report "Health Statistics of Lithuania", available from

<http://www.hi.lt/health-statistic-of-lithuania.html>.

Reference period: 31<sup>st</sup> December.

Coverage: The number of functioning equipment.

### **Positron Emission Tomography scanners**

Source of data: **Radiation Protection Centre.** Report "Health Statistics of Lithuania", available from <http://www.hi.lt/health-statistic-of-lithuania.html>.

Reference period: 31<sup>st</sup> December.

Coverage: The number of licensed equipment. Since 2007 – the number of functioning equipment.

### **Gamma cameras**

Source of data: **Health Information Centre of Institute of Hygiene,** data of entire annual survey of health establishments. Report "Health Statistics of Lithuania", available from

<http://www.hi.lt/health-statistic-of-lithuania.html>.

Reference period: 31<sup>st</sup> December.

Coverage: The number of functioning equipment.

### **Mammographs**

Source of data: **Radiation Protection Centre.** Report "Health Statistics of Lithuania", available from <http://www.hi.lt/health-statistic-of-lithuania.html>.

Reference period: 31<sup>st</sup> December.

Coverage: The number of licensed equipment. Since 2007 – the number of functioning equipment.  
Break in time series: 2007.

### **Radiation therapy equipment**

Source of data: **Radiation Protection Centre**. Report “Health Statistics of Lithuania”, available from <http://www.hi.lt/health-statistic-of-lithuania.html>.

Reference period: 31<sup>st</sup> December.

Coverage: The number of licensed equipment. Since 2007 – the number of functioning equipment.

Break in time series: 2007.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Radiation Protection Centre.

Reference period: 31<sup>st</sup> December.

Coverage: Since 2007 – the number of functioning equipment.

Deviation: The number includes digital and non-**Digital Subtraction Angiography units**.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Health Information Centre of Institute of Hygiene, data of entire annual survey of health establishments.

Reference period: 31<sup>st</sup> December

Coverage: The number of functioning equipment

## **Luxembourg**

### **Computed Tomography scanners**

Source of data: **Direction de la Santé**, Division de la Radioprotection.

Coverage: Includes all equipment in use.

### **Magnetic Resonance Imaging units**

Source of data: **Direction de la Santé**, Division de la Radioprotection.

Coverage: Includes all equipment in use.

### **Positron Emission Tomography scanners**

Source of data: **Direction de la Santé**, Division de la Radioprotection.

Coverage: Includes all equipment in use.

### **Gamma cameras**

Source of data: **Direction de la Santé**, Division de la Radioprotection.

Coverage: Includes all equipment in use. Since 2015, there are 2 units with a CT-scanner on board.

### **Mammographs**

Source of data: **Direction de la Santé**, Division de la Radioprotection.

Coverage: Includes all equipment in use.

### **Radiation therapy equipment**

Source of data: **Direction de la Santé**, Division de la Radioprotection.

Coverage: Includes all equipment in use.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Direction de la Santé, Division de la Radioprotection.

Coverage: includes all equipment in use.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Direction de la Santé, Division de la Radioprotection.

Coverage: includes all equipment in use.

## **Hungary**

### **Computed Tomography scanners**

Source of data:

- Until 1999, **Hungarian National Institute for Hospital and Medical Engineering (ORKI)**.

- From 2000 to 2016, **Hungarian National Health Insurance Fund (OEP)** Statistical Yearbook.

<http://www.oep.hu>.

- From 2017: **National Institute of Health Insurance Fund Management (NEAK, in Hungarian)**, [www.neak.gov.hu](http://www.neak.gov.hu).

Reference period: 31<sup>st</sup> December.

Coverage:

- The number contains only those CT scanners which are owned by health care institutions that have a contract for outpatient care until 2016 with the National Insurance Fund (OEP in Hungarian) and later with the National Institute of Health Insurance Fund Management (NEAK in Hungarian).

### **Magnetic Resonance Imaging units**

Source of data:

- Until 1999, **Hungarian National Institute for Hospital and Medical Engineering (ORKI)**.

- From 2000 to 2016, **Hungarian National Health Insurance Fund (OEP)** Statistical Yearbook.

<http://www.oep.hu>.

- From 2017: **National Institute of Health Insurance Fund Management (NEAK, in Hungarian)**, [www.neak.gov.hu](http://www.neak.gov.hu).

Reference period: 31<sup>st</sup> December.

Coverage:

- The number contains only those MRI units which are owned by health care institutions that have a contract for outpatient care until 2016 with the National Insurance Fund (OEP in Hungarian) and later with the National Institute of Health Insurance Fund Management (NEAK in Hungarian).

## **Positron Emission Tomography scanners**

### Source of data:

- Until 2007: **Hungarian National Institute for Hospital and Medical Engineering** (ORKI in Hungarian). [www.orki.hu](http://www.orki.hu).
- From 2008 until 2011: **Healthcare Quality Improvement and Hospital Engineering** (EMKI in Hungarian). [www.emki.hu](http://www.emki.hu).
- From 2012 until 2013: **National Institute for Quality- and Organizational Development in Healthcare and Medicines** (GYEMSZI in Hungarian) [www.gyemszi.hu](http://www.gyemszi.hu).
- From 2014: **National Healthcare Services Center** (ÁEEK in Hungarian) [www.aEEK.hu](http://www.aEEK.hu).
- From 2019: **National Institute of Health Insurance Fund Management** (NEAK, in Hungarian), [www.neak.gov.hu](http://www.neak.gov.hu)

Reference period: 31<sup>st</sup> December.

### Coverage:

- Equipment used in military hospitals (belonging to the Ministry of Defence) and the health institutes of the Hungarian State Railways are not included.
- The number contains only those units which are owned by health care institutions under contract with the National Insurance Fund (OEP).

## **Gamma cameras**

### Source of data:

- Until 2007: **Hungarian National Institute for Hospital and Medical Engineering** (ORKI in Hungarian). [www.orki.hu](http://www.orki.hu).
- From 2008 until 2011: **Healthcare Quality Improvement and Hospital Engineering** (EMKI in Hungarian). [www.emki.hu](http://www.emki.hu).
- From 2012 until 2013: **National Institute for Quality- and Organizational Development in Healthcare and Medicines** (GYEMSZI in Hungarian) [www.gyemszi.hu](http://www.gyemszi.hu).
- From 2014: **National Healthcare Services Center** (ÁEEK in Hungarian) [www.aEEK.hu](http://www.aEEK.hu).

Reference period: 31<sup>st</sup> December.

### Coverage:

- Equipment used in military hospitals (belonging to the Ministry of Defence) and the health institutes of the Hungarian State Railways are not included.
- The number contains only those units which are owned by health care institutions under contract with the National Insurance Fund (OEP).
- In 2014 a new institution, the National Healthcare Service Center (ÁEEK), started collecting the data and unfortunately not all data providers answered its request. Hence the 2014 and 2015 numbers (respectively 62 and 64) – which are underestimated – are not reported in the database.

## **Mammographs**

### Source of data:

- Until 2007: **Hungarian National Institute for Hospital and Medical Engineering** (ORKI in Hungarian). [www.orki.hu](http://www.orki.hu).
- From 2008 until 2011: **Healthcare Quality Improvement and Hospital Engineering** (EMKI in Hungarian). [www.emki.hu](http://www.emki.hu).
- From 2012 until 2013: **National Institute for Quality- and Organizational Development in Healthcare and Medicines** (GYEMSZI in Hungarian) [www.gyemszi.hu](http://www.gyemszi.hu).
- From 2014: **National Healthcare Services Center** (ÁEEK in Hungarian) [www.aEEK.hu](http://www.aEEK.hu).

Reference period: 31<sup>st</sup> December.

### Coverage:

- Equipment used in military hospitals (belonging to the Ministry of Defence) and the health institutes of the Hungarian State Railways are not included.
- The number contains only those units which are owned by health care institutions under contract with the National Insurance Fund (OEP).
- In 2014 a new institution, the National Healthcare Service Center (ÁEEK), started collecting the data and unfortunately not all data providers answered its request. Hence the 2014 and 2015 numbers (respectively 56 and 72) – which are underestimated – are not reported in the database.

### **Radiation therapy equipment**

#### Source of data:

- Until 2007: **Hungarian National Institute for Hospital and Medical Engineering** (ORKI in Hungarian). [www.orki.hu](http://www.orki.hu).
- From 2008 until 2011: **Healthcare Quality Improvement and Hospital Engineering** (EMKI in Hungarian). [www.emki.hu](http://www.emki.hu).
- From 2012 until 2013: **National Institute for Quality- and Organizational Development in Healthcare and Medicines** (GYEMSZI in Hungarian) [www.gyemszi.hu](http://www.gyemszi.hu).
- From 2014: **National Healthcare Services Center** (ÁEEK in Hungarian) [www.aEEK.hu](http://www.aEEK.hu).

Reference period: 31<sup>st</sup> December.

#### Coverage:

- Equipment used in military hospitals (belonging to the Ministry of Defence) and the health institutes of the Hungarian State Railways are not included.
- The number contains only those units which are owned by health care institutions under contract with the National Insurance Fund (OEP).

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

#### Source of data:

- Until 2007: Hungarian National Institute for Hospital and Medical Engineering (ORKI in Hungarian). [www.orki.hu](http://www.orki.hu)
- From 2008 until 2011: Healthcare Quality Improvement and Hospital Engineering (EMKI in Hungarian). [www.emki.hu](http://www.emki.hu)
- From 2012 until 2013: National Institute for Quality- and Organizational Development in Healthcare and Medicines (GYEMSZI in Hungarian) [www.gyemszi.hu](http://www.gyemszi.hu)
- From 2014: National Healthcare Services Center (ÁEEK in Hungarian) [www.aEEK.hu](http://www.aEEK.hu)

Reference period: 31<sup>st</sup> December.

#### Coverage:

- Equipment used in military hospitals (belonging to the Ministry of Defence) and the health institutes of the Hungarian State Railways are not included.
- The number contains only those units which are owned by health care institutions under contract with the National Insurance Fund (OEP).

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

#### Source of data:

- Until 2007: Hungarian National Institute for Hospital and Medical Engineering (ORKI in Hungarian). [www.orki.hu](http://www.orki.hu)
- From 2008 until 2011: Healthcare Quality Improvement and Hospital Engineering (EMKI in Hungarian). [www.emki.hu](http://www.emki.hu)

- From 2012 until 2013: National Institute for Quality- and Organizational Development in Healthcare and Medicines (GYEMSZI in Hungarian) [www.gyemszi.hu](http://www.gyemszi.hu)
- From 2014: National Healthcare Services Center (ÁEEK in Hungarian) [www.aEEK.hu](http://www.aEEK.hu)

Reference period: 31<sup>st</sup> December.

Coverage:

- Equipment used in military hospitals (belonging to the Ministry of Defence) and the health institutes of the Hungarian State Railways are not included.
- The number contains only those units which are owned by health care institutions under contract with the National Insurance Fund (OEP).

Break in time series: EMKI explains the large increase in 2008 as procurement of new equipment. This increase is also due to action that year that addressed the healthcare institutions one by one and called attention to their obligation to provide data. Due to deficient data provision by data providers it cannot be accurately determined to what extent the increase includes new pieces of equipment or old ones that are reported only now.

## Malta

### Computed Tomography scanners

Source of data:

- Aggregated data from **Individual Institutions, Directorate of Institutional Health, Ministry of Health, the Elderly and Community Care and Occupational Health and Safety Authority (OHSA)**
- For data from 2008 onwards the data sources are the **Occupational Health & Safety Authority (OHSA)** and **Individual Institutions**.

Reference period: 31<sup>st</sup> December.

Coverage: The number of CT units decreased in 2011 due to the termination of one privately owned hospital.

2013: One CT scanner is mainly used for planning radiation therapy. A small private hospital was previously being considered as part of the ambulatory sector. This small private hospital is now being included under the hospital sector since it is licensed for overnight stays.

Break in Series: 2013: The number of CT scanners decreased since non-operational CT Scanners have been removed from the figures.

### Magnetic Resonance Imaging units

Source of data:

- Aggregated data from **Individual Institutions, Directorate of Institutional Health, Ministry of Health, the Elderly and Community Care and Occupational Health and Safety Authority (OHSA)**
- 2008 onwards: **Individual Institutions**.

Reference period: 31<sup>st</sup> December.

Coverage: The number of MRI units decreased in 2011 due to the termination of one privately owned hospital.

2013: The number of MRI units in the ambulatory sector have decreased since a small private hospital was previously being considered as part of the ambulatory sector. This small private hospital is now being included under the hospital sector since it is licensed for overnight stays.

### Positron Emission Tomography scanners

Source of data:

- Aggregated data from **Individual Institutions, Directorate of Institutional Health, Ministry of Health, the Elderly and Community Care and Occupational Health and Safety Authority (OHSA)**

- For data from 2008 onwards the data sources are the **Occupational Health & Safety Authority (OHSA)** and **Individual Institutions**.

Reference period: 31<sup>st</sup> December.

2013. Both PET scanners are a combined PET/CT scanner, which can also be used as CT scanners.

### **Gamma cameras**

Source of data:

- Aggregated data from **Individual Institutions, Directorate of Institutional Health, Ministry of Health, the Elderly and Community Care and Occupational Health and Safety Authority (OHSA)**.

- For data from 2008 onwards the data sources are the **Occupational Health & Safety Authority (OHSA)** and **Individual Institutions**.

Reference period: 31<sup>st</sup> December.

Break in Series: 2013: The number of Gamma cameras decreased since non-operational Gamma cameras have been removed from the figures.

### **Mammographs**

Source of data:

- Aggregated data from **Individual Institutions, Directorate of Institutional Health, Ministry of Health, the Elderly and Community Care and Occupational Health and Safety Authority (OHSA)**.

- For data from 2008 onwards the data sources are the **Occupational Health & Safety Authority (OHSA)** and **Individual Institutions**.

Reference period: 31<sup>st</sup> December.

Coverage: The number of Mammographs decreased in 2011 due to the termination of one privately owned hospital.

2013: A small private hospital was previously being considered as part of the ambulatory sector. This small private hospital is now being included under the hospital sector since it is licensed for overnight stays.

Break in Series: 2013: The number of Mammographs decreased since non-operational Mammographs have been removed from the figures.

### **Radiation therapy equipment**

Source of data:

- Aggregated data from **Individual Institutions, Directorate of Institutional Health, Ministry of Health, the Elderly and Community Care and Occupational Health and Safety Authority (OHSA)**.

- For data from 2008 onwards the data sources are the **Occupational Health & Safety Authority (OHSA)** and **Individual Institutions**.

Reference period: 31<sup>st</sup> December.

Break in Series: 2013: The number of Radiation therapy equipment decreased since non-operational Radiation therapy equipment have been removed from the figures.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

- Aggregated data from Individual Institutions, Directorate of Institutional Health, Ministry of Health, the Elderly and Community Care and Occupational Health and Safety Authority (OHSA)

- For data from 2008 onwards the data sources are the Occupational Health & Safety Authority (OHSA) and Individual Institutions

Reference period: 31st December

## **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

- Aggregated data from Individual Institutions, Directorate of Institutional Health, Ministry of Health, the Elderly and Community Care and Occupational Health and Safety Authority (OHSA)
- 2008 onwards: Individual Institutions

Reference period: 31<sup>st</sup> December

Coverage: 2007: Data on LSI units in HP.3 is not available.

## **Netherlands**

### **Computed Tomography scanners**

Source of data:

- 2006 onwards: **Annual reports social account** which the hospitals are required to deliver; the survey on imaging diagnostics is included in this report.
- Up to 2005: **Informatiesysteem Medische Stralingstoepassingen (IMS)**. Based on annual survey "Jaarenquête Beeldvormende Diagnostiek" by RIVM, NVZ and Prismant.

### **Magnetic Resonance Imaging units**

Source of data:

- 2006 onwards: **Annual reports social account** which the hospitals are required to deliver; the survey on imaging diagnostics is included in this report.
- Up to 2005: **Health Council**, Advisory Report on Nuclear Magnetic Resonance Imaging and Spectroscopy (The Hague, 1984); **Nationale Raad voor de Volksgezondheid** (National Board of Health), Advisory Report on MRI (Zoetermeer, 1993).

### **Positron Emission Tomography scanners**

Source of data:

- 2006 onwards: **Annual reports social account** which the hospitals are required to deliver; the survey on imaging diagnostics is included in this report.
- Up to 2005: **Jaarenquête Beeldvormende Diagnostiek** (annual survey imaging).

### **Gamma cameras**

Source of data:

- 2006 onwards: **Annual reports social account** which the hospitals are required to deliver; the survey on imaging diagnostics is included in this report.

### **Mammographs**

Source of data: One-time survey.  
2006 onwards: Data not available.

### **Radiation therapy equipment**

Source of data: **Nationaal Ziekenhuis instituut; Ministry of Health, Welfare and Sports:** Topklinische zorg in getallen: 1992-1994. Bijzondere medische verrichtingen in getallen: 1993-1997.

### **Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

- 2006 onwards: Annual reports social account which the hospitals are required to deliver; the survey on imaging diagnostics is included in this report.

### **Lithotriptors:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Annual reports social account which hospitals are required to deliver.

## **Austria**

### **Computed Tomography scanners**

Source of data: **Austrian Federal Ministry of Social Affairs, Health, Care and Consumer Protection / Gesundheit Österreich GmbH,** Monitoring of medical technology development.

Reference period: 31<sup>st</sup> December.

Coverage:

- Included are all CT units in hospitals as defined by the Austrian Hospital Act (KAKuG) and classified as HP.1 according to the System of Health Accounts (OECD).
- The ambulatory sector is included (HP.3).

### **Magnetic Resonance Imaging units**

Source of data: **Austrian Federal Ministry of Social Affairs, Health, Care and Consumer Protection / Gesundheit Österreich GmbH,** Monitoring of medical technology development.

Reference period: 31<sup>st</sup> December.

Coverage:

- Included are all MRI units in hospitals as defined by the Austrian Hospital Act (KAKuG) and classified as HP.1 according to the System of Health Accounts (OECD).
- The ambulatory sector is included (HP.3).

### **Positron Emission Tomography scanners**

Source of data: **Austrian Federal Ministry of Social Affairs, Health, Care and Consumer Protection / Gesundheit Österreich GmbH,** Monitoring of medical technology development.

Reference period: 31<sup>st</sup> December.

Coverage:

- Included are all PET units in hospitals as defined by the Austrian Hospital Act (KAKuG) and classified as HP.1 according to the System of Health Accounts (OECD).
- The ambulatory sector is included (HP.3).

### **Gamma cameras**

Source of data: **Austrian Federal Ministry of Social Affairs, Health, Care and Consumer Protection / Gesundheit Österreich GmbH,** Monitoring of medical technology development.

Reference period: 31<sup>st</sup> December.

Coverage:

- Included are all **Gamma cameras** units in hospitals as defined by the Austrian Hospital Act (KAKuG) and classified as HP.1 according to the System of Health Accounts (OECD).
- The ambulatory sector is included (HP.3).

### **Mammographs**

Source of data: **Austrian Federal Ministry of Social Affairs, Health, Care and Consumer Protection / Gesundheit Österreich GmbH, Austrian Breast Cancer Screening Program.**

Reference period: 31<sup>st</sup> December.

Coverage: Included are screening units resp. at least one machine per screening unit utilized within the Austrian Breast Cancer Screening Program (which started in January 2014). These units have a particular certificate of quality. Although the majority of mammography machines is certified for the Breast Cancer Screening Program it has to be assumed, that some more machines are used outside of the framework of the screening program (e.g. for a second mammography in hospital after ambulant mammography).

### **Radiation therapy equipment**

Source of data: **Austrian Federal Ministry of Social Affairs, Health, Care and Consumer Protection / Gesundheit Österreich GmbH, Monitoring of medical technology development.**

Reference period: 31<sup>st</sup> December.

Coverage:

- Included is all **Radiation therapy equipment** in hospitals as defined by the Austrian Hospital Act (KAKuG) and classified as HP.1 according to the System of Health Accounts (OECD).
- The ambulatory sector is included (HP.3).

### **Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Austrian Federal Ministry of Health & Gesundheit Österreich GmbH, Monitoring of medical technology development (Großgeräteerhebung).

Reference period: 31<sup>st</sup> December.

Coverage: Complete (as far as information is available regarding the ambulatory sector).

Estimation method: From 2006 onwards, data for DSA units are a perpetuation of 2005, because these data are not collected any more.

### **Lithotriptors:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Austrian Federal Ministry of Health & Gesundheit Österreich GmbH, Monitoring of medical technology development (Großgeräteerhebung).

Reference period: 31<sup>st</sup> December.

Coverage: Complete (as far as information is available regarding the ambulatory sector).

Estimation method: From 2006 on, data for LSI units are a perpetuation of 2005, because these data are not collected any more.

## **Poland**

## **Computed Tomography scanners**

### Source of data:

#### In year 2013 and earlier:

##### **Ministry of Health:**

- MZ-12 - report on activity and workers in outpatient specialised health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

##### **Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

#### From 2014 to 2018:

##### **Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

##### **Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

#### Since 2019:

##### **Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

##### **Ministry of Interior and Administration:**

- MSWiA-32 - report on the outpatient activities of independent public health care units. Data as at 31<sup>st</sup> December.
- MSWiA-43 - report on activities of general hospital and specialised hospital. Data as at 31<sup>st</sup> December.

#### Break in time series:

- 2014: change in data source as described above.
- 2019: change in data source as described above.

## **Magnetic Resonance Imaging units**

### Source of data:

#### In year 2013 and earlier:

##### **Ministry of Health:**

- MZ-12 - report on activity and workers in outpatient specialised health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

##### **Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

#### From 2014 to 2018:

##### **Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

##### **Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

#### Since 2019:

##### **Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSWiA-32 - report on the outpatient activities of independent public health care units. Data as at 31<sup>st</sup> December.
- MSWiA-43 - report on activities of general hospital and specialised hospital. Data as at 31<sup>st</sup> December.

Break in time series:

- 2014: change in data source as described above.
- 2019: change in data source as described above.

**Positron Emission Tomography scanners**

Source of data:

In year 2013 and earlier:

**Ministry of Health:**

- MZ-12 - report on activity and workers in outpatient specialised health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

From 2014 to 2018:

**Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

Since 2019:

**Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSWiA-32 - report on the outpatient activities of independent public health care units. Data as at 31<sup>st</sup> December.
- MSWiA-43 - report on activities of general hospital and specialised hospital. Data as at 31<sup>st</sup> December.

Break in time series:

- 2014: change in data source as described above.
- 2019: change in data source as described above.

**Gamma cameras**

Source of data:

In year 2013 and earlier:

**Ministry of Health:**

- MZ-12 - report on activity and workers in outpatient specialised health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSW-33 Report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

From 2014 to 2018:

**Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

Since 2019:

**Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSWiA-32 - report on the outpatient activities of independent public health care units. Data as at 31<sup>st</sup> December.

- MSWiA-43 - report on activities of general hospital and specialised hospital. Data as at 31<sup>st</sup> December.

Break in time series:

- 2014: change in data source as described above.
- 2019: change in data source as described above.

## **Mammographs**

Source of data:

In year 2013 and earlier:

**Ministry of Health:**

- MZ-12 - report on activity and workers in outpatient specialised health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSW-33 Report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

From 2014 to 2018:

**Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

Since 2019:

**Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

**Ministry of Interior and Administration:**

- MSWiA-32 - report on the outpatient activities of independent public health care units. Data as at 31<sup>st</sup> December.

- MSWiA-43 - report on activities of general hospital and specialised hospital. Data as at 31<sup>st</sup> December.

Break in time series:

- 2014: change in data source as described above.
- 2019: change in data source as described above.

## **Radiation therapy equipment**

### Source of data:

#### *In year 2013:*

#### **Ministry of Health:**

- MZ-12 - report on activity and workers in outpatient specialised health care. Data as at 31<sup>st</sup> December.

- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

#### **Ministry of Interior and Administration:**

- MSW-33 Report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

#### *From 2014 to 2018:*

#### **Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.

- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

#### **Ministry of Interior and Administration:**

- MSW-33 - report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

#### *Since 2019:*

#### **Ministry of Health:**

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.

- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

#### **Ministry of Interior and Administration:**

- MSWiA-32 - report on the outpatient activities of independent public health care units. Data as at 31<sup>st</sup> December.

- MSWiA-43 - report on activities of general hospital and specialised hospital. Data as at 31<sup>st</sup> December.

### Break in time series:

- 2014: change in data source as described above.

- 2017: Data from Ministry of Health - Radiation therapy equipment have changed (from cobalt-60 and caesium-137 to linear accelerator).

- 2019: change in data source as described above.

## **Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

### Source of data:

#### In year 2013 and earlier:

#### Ministry of Health:

- MZ-12 - report on activity and workers in outpatient specialised health care. Data as at 31<sup>st</sup> December.

- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

#### Ministry of Interior and Administration:

- MSW-33 Report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

#### Since 2014:

#### Ministry of Health:

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.
- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

Ministry of Interior and Administration:

- MSW-33 Report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

Break in time series:

- 2014: change in data source as described above.

### **Lithotriptors:**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

In year 2013 and earlier:

Ministry of Health:

- MZ-12 - report on activity and workers in outpatient specialised health care. Data as at 31<sup>st</sup> December.

- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

Ministry of Interior and Administration:

- MSW-33 Report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

Since 2014:

Ministry of Health:

- MZ-11 - report on activity and workers in outpatient health care. Data as at 31<sup>st</sup> December.

- MZ-29 - report on activity of general hospital. Data as at 31<sup>st</sup> December.

Ministry of Interior and Administration:

- MSW-33 Report on nursing and residential care facilities. Data are collected on an annual basis. Data as at 31<sup>st</sup> December.

Break in time series:

- 2014: change in data source as described above.

## **Portugal**

### **Computed Tomography scanners**

Source of data:

- For all sectors (inpatient and outpatient facilities) of public hospitals in the mainland: **Ministry of Health** - Survey of High-tech Facilities.

- For inpatient facilities (official and private hospitals): **Hospital Survey**.

Coverage:

- Data include the total installed equipment.

- Since 2009, data are only available for CT scanners in hospitals.

### **Magnetic Resonance Imaging units**

Source of data:

- For all sectors (inpatient and outpatient facilities) of public hospitals in the mainland: **Ministry of Health** - Survey of High-tech Facilities.

- For inpatient facilities (official and private hospitals): **Hospital Survey**.

Coverage:

- Data include the total installed equipment.

- Since 2009, data are only available for MRI units in hospitals.

### **Positron Emission Tomography scanners**

#### Source of data:

- For all sectors (inpatient and outpatient facilities) of public hospitals in the mainland: **Ministry of Health** - Survey of High-tech Facilities.

#### Coverage:

- Data include the total installed equipment.  
- Since 2011, data are only available for PET scanners in hospitals.

### **Gamma cameras**

#### Source of data:

- For all sectors (inpatient and outpatient facilities) of public hospitals in the mainland: **Ministry of Health** - Survey of High-tech Facilities.

#### Coverage:

- Data include the total installed equipment.  
- Since 2011, data are only available for gamma cameras in hospitals.

### **Mammographs**

#### Source of data:

- For all sectors (inpatient and outpatient facilities) of public hospitals in the mainland: **Ministry of Health** - Survey of High-tech Facilities.

#### Coverage:

- Data include the total installed equipment.  
- Since 2011, data are only available for mammographs in hospitals.

### **Radiation therapy equipment**

#### Source of data:

- For all sectors (inpatient and outpatient facilities) of public hospitals in the mainland: **Ministry of Health** - Survey of High-tech Facilities.

#### Coverage:

- Data include the total installed equipment.  
- Since 2011, data are only available for radiation therapy equipment in hospitals.

### **Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: - For all sectors (inpatient and outpatient facilities) of public hospitals in the mainland: Ministry of Health - Survey of High-tech Facilities.

Coverage: Data includes the total installed equipment.

### **Lithotriptors:**

Data collection discontinued in 2017 (reference year 2015)

Source of data:

- For all sectors (inpatient and outpatient facilities) of public hospitals in the mainland: Ministry of Health - Survey of High-tech Facilities.

- For inpatient facilities (official and private hospitals): Hospital Survey.

Coverage:

- Data includes the total installed equipment.

## **Romania**

### **Computed Tomography scanners**

Source of data: National Institute of Statistics, Activity of Sanitary Units – annual survey performed by NIS.

Reference period: data as of 31<sup>st</sup> December.

Coverage: For the period 2005-2006 the data covers all hospitals from public sector, starting with 2007 data refers to hospitals and ambulatory care units of public and private sector. Data collection for 2005 and 2006 does not cover ambulatory care sector (HP3).

The number of Single Photon Emission Computed Tomography (SPECT) included in the number of Computed Tomography scanners couldn't be identified.

### **Magnetic Resonance Imaging units**

Source of data: National Institute of Statistics, Activity of Sanitary Units – annual survey performed by NIS.

Reference period: data as of 31<sup>st</sup> December.

Coverage: For the period 2005-2006 the data covers all hospitals from public sector, starting with 2007 data refers to hospitals and ambulatory care units of public and private sector. Data collection for 2005 and 2006 does not cover ambulatory care sector (HP3).

### **Positron Emission Tomography scanners**

Source of data: National Institute of Statistics, Activity of Sanitary Units – annual survey performed by NIS.

Reference period: data as of 31<sup>st</sup> December.

Coverage: For the period 2005-2006 the data covers all hospitals from public sector, starting with 2007 data refers to hospitals and ambulatory care units of public and private sector. Data collection for 2005 and 2006 does not cover ambulatory care sector (HP3).

### **Gamma cameras**

Source of data: National Institute of Statistics, Activity of Sanitary Units – annual survey performed by NIS.

Reference period: data as of 31<sup>st</sup> December.

Coverage: For the period 2005-2006 the data covers all hospitals from public sector, starting with 2007 data refers to hospitals and ambulatory care units of public and private sector. Data collection for 2005 and 2006 does not cover ambulatory care sector (HP3).

### **Mammographs**

Source of data: **National Institute of Statistics**, Activity of Sanitary Units – annual survey performed by NIS.

Reference period: data as of 31<sup>st</sup> December.

Coverage: All hospitals and ambulatory care units from public sector. The indicator for mammographs was included in data collection starting with 2008.

### **Radiation therapy equipment**

Source of data: **National Institute of Statistics**, Activity of Sanitary Units – annual survey performed by INS.

Reference period: data as of 31<sup>st</sup> December.

Coverage: For 2006 year the data covers all hospitals from public sector, starting with 2007 data was collected also for ambulatory sector and refers to hospitals and ambulatory care units of public and private sector.

### **Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: National Institute of Statistics, Activity of Sanitary Units – annual survey performed by NIS.

Reference period: data as of 31<sup>st</sup> December.

Coverage: For the period 2005-2006 the data covers all hospitals from public sector, starting with 2007 data refers to hospitals and ambulatory care units of public and private sector. Data collection for 2005 and 2006 does not cover ambulatory care sector (HP3). For 2007 and 2008 ambulatory sector did not report any data for DSA units.

### **Lithotriptors:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: National Institute of Statistics, Activity of Sanitary Units – annual survey performed by NIS.

Reference period: data as of 31<sup>st</sup> December.

Coverage: For 2006 year the data covers all hospitals from public sector, starting with 2007 data refers to hospitals and ambulatory care units of public and private sector. For 2007 ambulatory sector did not report any data for Lithotriptors.

## **Slovenia**

### **Computed Tomography scanners**

Source of data: **Slovenian Radiation Protection Administration**, Registry of radiation sources in medicine and veterinary medicine.

Reference period: 31<sup>st</sup> December.

Coverage: Refers to all institutions in Slovenia.

### **Magnetic Resonance Imaging units**

Source of data: **Slovenian Radiation Protection Administration**, Registry of radiation sources in medicine and veterinary medicine and **Health Insurance Institute of Slovenia**.

Reference period: 31<sup>st</sup> December.

Coverage: Refers to all institutions in Slovenia.

### **Positron Emission Tomography scanners**

Source of data: **Slovenian Radiation Protection Administration**, registry of radiation sources in medicine and veterinary medicine.

Reference period: 31<sup>st</sup> December.

Coverage: Refers to all institutions in Slovenia.

- Number of Positron Emission Tomography scanner units (PET units): Gamma camera that enables a limited PET diagnosis.

### **Gamma cameras**

Source of data: **Slovenian Radiation Protection Administration**, registry of radiation sources in medicine and veterinary medicine.

Reference period: 31<sup>st</sup> December.

Coverage: Refers to all institutions in Slovenia.

### **Mammographs**

Source of data: **Slovenian Radiation Protection Administration**, registry of radiation sources in medicine and veterinary medicine.

Reference period: 31<sup>st</sup> December.

Coverage: Refers to all institutions in Slovenia.

### **Radiation therapy equipment**

Source of data: **Slovenian Radiation Protection Administration**, registry of radiation sources in medicine and veterinary medicine.

Reference period: 31<sup>st</sup> December.

Coverage: Refers to all institutions in Slovenia.

- Number of units of Radiation therapy equipment (RAD units): four accelerators, two Co-60 radiotherapy units, two low energy x-ray units and one brachytherapy unit.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Slovenian Radiation Protection Administration, registry of radiation sources in medicine and veterinary medicine

Reference period: 31<sup>st</sup> December

Coverage: Refers to all institutions in Slovenia.

- Number of **Digital Subtraction Angiography units** (DSA units) refers to all angiographic systems

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Slovenian Radiation Protection Administration, registry of radiation sources in medicine and veterinary medicine.

Reference period: 31<sup>st</sup> December.

Coverage: Refers to all institutions in Slovenia.

## **Slovakia**

### **Computed Tomography scanners**

Source of data: **National Health Information Center.**

- A revision of data within the register of medical technology was made in SR in 2004; therefore, data for CT scanners, radiation therapy units and Lithotriptors were submitted only from 2003. Data for CT scanners, radiation therapy units and Lithotriptors up to the year 2003 are inconsistent, and their numbers were not submitted for the table "Medical technology available in HP1 + HP3 together".

Reference period: 31<sup>st</sup> December.

Coverage: Medical technologies available regardless of frequency of use.

Type of health care facilities:

- HP.1 (hospital) - Institutional care including out-patient units included in general hospital, specialised hospital and sanatorium.

- HP.3 (ambulatory sector) - Out-patient healthcare included in general out-patient care unit, specialised out-patient care unit, emergency out-patient unit, facility providing day care, residential healthcare unit, healthcare centre, nursing care service, facility for common.

Note: The increase in the availability of medical equipment in ambulatory setting in year 2014 is caused by purchase of new equipment and the expansion of the number of reports from statistical units which have been sent to National Health Information Center.

### **Magnetic Resonance Imaging units**

Source of data: **National Health Information Center.**

Reference period: 31<sup>st</sup> December.

Coverage: Medical technologies available regardless of frequency of use.

Type of health care facilities:

- HP.1 (hospital) - Institutional care including out-patient units included in general hospital, specialised hospital and sanatorium.

- HP.3 (ambulatory sector) - Out-patient healthcare included in general out-patient care unit, specialised out-patient care unit, emergency out-patient unit, facility providing day care, residential healthcare unit, healthcare centre, nursing care service, facility for common.

Note: The increase in the availability of medical equipment in ambulatory setting in year 2014 is caused by purchase of new equipment and the expansion of the number of reports from statistical units which have been sent to National Health Information Center.

### **Positron Emission Tomography scanners**

Source of data: **National Health Information Center.**

Reference period: 31<sup>st</sup> December.

Coverage: Medical technologies available regardless of frequency of use.

Type of health care facilities:

- HP.1 (hospital) - Institutional care including out-patient units included in general hospital, specialised hospital and sanatorium.

- HP.3 (ambulatory sector) - Out-patient healthcare included in general out-patient care unit, specialised out-patient care unit, emergency out-patient unit, facility providing day care, residential healthcare unit, healthcare centre, nursing care service, facility for common.

### **Gamma cameras**

Source of data: **National Health Information Center.**

Reference period: 31<sup>st</sup> December.

Coverage: Medical technologies available regardless of frequency of use.

Type of health care facilities:

- HP.1 (hospital) - Institutional care including out-patient units included in general hospital, specialised hospital and sanatorium.
- HP.3 (ambulatory sector) - Out-patient healthcare included in general out-patient care unit, specialised out-patient care unit, emergency out-patient unit, facility providing day care, residential healthcare unit, healthcare centre, nursing care service, facility for common.

## **Mammographs**

Source of data: **National Health Information Center.**

Reference period: 31<sup>st</sup> December.

Coverage: Medical technologies available regardless of frequency of use.

- Data for Mammographs up to the year 2003 are inconsistent, and their numbers were not submitted.

Type of health care facilities:

- HP.1 (hospital) - Institutional care including out-patient units included in general hospital, specialised hospital and sanatorium.
- HP.3 (ambulatory sector) - Out-patient healthcare included in general out-patient care unit, specialised out-patient care unit, emergency out-patient unit, facility providing day care, residential healthcare unit, healthcare centre, nursing care service, facility for common.

Note: The increase in the availability of medical equipment in ambulatory setting in year 2014 is caused by purchase of new equipment and the expansion of the number of reports from statistical units which have been sent to National Health Information Center.

## **Radiation therapy equipment**

Source of data: **National Health Information Center.**

- A revision of data within the register of medical technology was made in SR in 2004; therefore, data for CT scanners, radiation therapy units and Lithotriptors were submitted only from 2003. Data for CT scanners, radiation therapy units and Lithotriptors up to the year 2003 are inconsistent, and their numbers were not submitted for the table "Medical technology available in HP1 + HP3 together".

Reference period: 31<sup>st</sup> December.

Coverage: Medical technologies available regardless of frequency of use.

Type of health care facilities:

- HP.1 (hospital) - Institutional care including out-patient units included in general hospital, specialised hospital and sanatorium.
- HP.3 (ambulatory sector) - Out-patient healthcare included in general out-patient care unit, specialised out-patient care unit, emergency out-patient unit, facility providing day care, residential healthcare unit, healthcare centre, nursing care service, facility for common.

## **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: National Health Information Center.

Reference period: 31<sup>st</sup> December.

Coverage: Medical technologies available regardless of frequency of use.

## **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: National Health Information Center.

- A revision of data within the register of medical technology was made in SR in 2004; therefore, data for CT scanners, radiation therapy units and Lithotriptors were submitted only from 2003. Data for CT scanners, radiation therapy units and Lithotriptors up to the year 2003 are inconsistent, and their numbers were not submitted for the table "Medical technology available in HP1 + HP3 together".

Reference period: 31st December.

Coverage: Medical technologies available regardless of frequency of use.

## **Finland**

### **Computed Tomography scanners**

Source of data: **Radiation and Nuclear Safety Authority Finland.**

Coverage: All hospitals.

Note: Previously number of all kind of CT scanners has been reported in the column "CT scanners". That was justified, because most of the SPECT-CT and PET-CT scanners were used more than 50 % for CT only. Now the practice has changed so that most gamma cameras are equipped with CT and all these hybrid equipment are reported in the column "Gamma cameras" together with few gamma cameras without CT. Though, the total number of CTs has not changed dramatically, but we have changed the reporting to be in line with the given instructions.

### **Magnetic Resonance Imaging units**

Source of data: **Radiation and Nuclear Safety Authority Finland and university hospitals.**

Coverage: All hospitals.

### **Positron Emission Tomography scanners**

Source of data: **Radiation and Nuclear Safety Authority Finland and university hospitals.**

Coverage: All hospitals.

### **Gamma cameras**

Source of data: **Radiation and Nuclear Safety Authority Finland and university hospitals.**

Coverage: All hospitals.

Note: Previously number of all kind of CT scanners has been reported in the column "CT scanners". That was justified, because most of the SPECT-CT and PET-CT scanners were used more than 50 % for CT only. Now the practice has changed so that most gamma cameras are equipped with CT and all these hybrid equipment are reported in the column "Gamma cameras" together with few gamma cameras without CT. Though, the total number of CTs has not changed dramatically, but we have changed the reporting to be in line with the given instructions.

### **Mammographs**

Source of data: **Radiation and Nuclear Safety Authority Finland.**

Coverage: All hospitals.

### **Radiation therapy equipment**

Source of data: **Radiation and Nuclear Safety Authority.**

Coverage: All hospitals.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Radiation and Nuclear Safety Authority Finland.

Coverage: All hospitals. Until 2014, the number of all fixed installations for angiography and cardioangiography equipment has been used (currently the number is 110). Since 2015, the number includes only a number of DSA equipment (per instructions) without noting that one can perform DSA as well with some of the angiography or cardioangiography equipment.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Radiation and Nuclear Safety Authority Finland.

Coverage: All hospitals.

## **Sweden**

### **Computed Tomography scanners**

Source of data:

- Swedish Association of Local Authorities and Regions (earlier Federation of Swedish County Councils). Statistics collected mainly from health care Regions and The Swedish Radiation Safety Authority.

Reference period:

- 2015 December.
- 2016 December.
- 2017 December.
- 2018 December.
- 2019 December.

Coverage:

- Most of the health care givers from local regions are included. Some non-radiation equipment owned by private health care providers may be excluded.

### **Magnetic Resonance Imaging units**

Source of data:

- Swedish Association of Local Authorities and Regions (earlier Federation of Swedish County Councils). Statistics collected mainly from health care Regions and The Swedish Radiation Safety Authority.

Reference period:

- 2015 December.
- 2016 December.
- 2017 December.
- 2018 December.
- 2019 December.

Coverage:

- Most of the health care givers from local regions are included. Some non-radiation equipment owned by private health care providers may be excluded.

### **Positron Emission Tomography scanners**

#### Source of data:

- Swedish Association of Local Authorities and Regions (earlier Federation of Swedish County Councils). Statistics collected mainly from health care Regions and The Swedish Radiation Safety Authority.

#### Reference period:

- 2015 December.
- 2016 December.
- 2017 December.
- 2018 December.
- 2019 December.

#### Coverage:

- Most of the health care givers from local regions are included. Some non-radiation equipment owned by private health care providers may be excluded.

### **Gamma cameras**

#### Source of data:

- Swedish Association of Local Authorities and Regions (earlier Federation of Swedish County Councils). Statistics collected mainly from health care Regions and The Swedish Radiation Safety Authority.

#### Reference period:

- 2015 December.
- 2016 December.
- 2017 December.
- 2018 December.
- 2019 December.

#### Coverage:

- Most of the health care givers from local regions are included. Some non-radiation equipment owned by private health care providers may be excluded.

### **Mammographs**

#### Source of data:

- Swedish Association of Local Authorities and Regions (earlier Federation of Swedish County Councils). Statistics collected mainly from health care Regions and The Swedish Radiation Safety Authority.

#### Reference period:

- 2015 December.
- 2016 December.
- 2017 December.
- 2018 December.
- 2019 December.

#### Coverage:

- Most of the health care givers from local regions are included. Some non-radiation equipment owned by private health care providers may be excluded.

### **Radiation therapy equipment**

#### Source of data:

- Swedish Association of Local Authorities and Regions (earlier Federation of Swedish County Councils). Statistics collected mainly from health care Regions and The Swedish Radiation Safety Authority.

#### Reference period:

- 2015 December.
- 2016 December.
- 2017 December.
- 2018 December.
- 2019 December.

#### Coverage:

- Most of the health care givers from local regions are included. Some non-radiation equipment owned by private health care providers may be excluded.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

#### Source of data:

Swedish Association of Local Authorities and Regions (earlier Federation of Swedish County Councils), Statistics collected from local authorities by Swedish Association of Local Authorities and Regions.

#### Reference period:

- 2015 December.
- 2016 December.

#### Coverage:

- Most of the health care givers from local regions are included. Some private health care givers may be excluded.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

#### Source of data:

Swedish Association of Local Authorities and Regions (earlier Federation of Swedish County Councils), Statistics collected from local authorities by Swedish Association of Local Authorities and Regions.

#### Reference period:

- 2015 December.
- 2016 December.

#### Coverage:

- Most of the health care givers from local regions are included. Some private health care givers may be excluded.

## **Iceland**

### **Computed Tomography scanners**

Source of data: Icelandic Radiation Safety Authority.

Reference period: 31<sup>st</sup> December.

### **Magnetic Resonance Imaging units**

Source of data: Icelandic Radiation Safety Authority.  
Reference period: 31<sup>st</sup> December.

### **Positron Emission Tomography scanners**

Source of data: Icelandic Radiation Safety Authority.  
Reference period: 31<sup>st</sup> December.

### **Gamma cameras**

Source of data: Icelandic Radiation Safety Authority.  
Reference period: 31<sup>st</sup> December.

### **Mammographs**

Source of data: Icelandic Radiation Safety Authority.  
Reference period: 31<sup>st</sup> December.

### **Radiation therapy equipment**

Source of data: Icelandic Radiation Safety Authority.  
Reference period: 31<sup>st</sup> December.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Icelandic Radiation Safety Authority.  
Reference period: 31<sup>st</sup> December.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Icelandic Radiation Safety Authority.  
Reference period: 31<sup>st</sup> December.

## **Liechtenstein**

### **Computed Tomography scanners**

Source of data: data report from hospitals.

### **Magnetic Resonance Imaging units**

Source of data: data report from hospitals.  
Coverage: 100%.

### **Positron Emission Tomography scanners**

Source of data: data report from hospitals.  
Coverage: 100%.

### **Gamma cameras**

Source of data: data report from hospitals.  
Coverage: 100%.

### **Mammographs**

Source of data: data report from hospital.

### **Radiation therapy equipment**

Source of data: data report from hospital.  
Coverage: 100%.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: data report from hospitals.  
Coverage: 100%

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: data report from hospitals.

## **Norway**

### **Computed Tomography scanners**

Source of data: **The Norwegian Radiation and Nuclear Safety Authority (DSA)**. Undertakings that expect to acquire, lease, use or handle radiation sources that are subject to registration shall register their activities and each radiation source to DSA via DSA's radiation source registration system (<https://ems.dsa.no/>). Equipment that is no longer in use is also reported through the same registration system.

Coverage: Data covers CBCT and EBCT. Dental and veterinary use is not covered.

Equipment is reported for HP.1 and HP.3 together (hospital and ambulatory sector). It is not possible to differentiate between HP.1 and HP.3 in the source data.

The reported data is limited to equipment that is subject to authorization from DSA according to the Radiation Protection Regulations (see "Strålevernforskriften på engelsk" here: <https://dsa.no/regelverk/>).

DSA's radiation source registration system was updated in 2016, and data before this is therefore not easily accessible.

Reference period: The reported data include registrations of equipment that have been registered and processed by DSA as of December 31 each year. Due to delays in the processing of registrations the actual number of equipment might be slightly higher or lower than reported on this date.

### **Magnetic Resonance Imaging units**

Source of data: **The Norwegian Radiation and Nuclear Safety Authority (DSA)**. Undertakings that expect to acquire, lease, use or handle radiation sources that are subject to registration shall register their activities and each radiation source to DSA via DSA's radiation source registration system (<https://ems.dsa.no/>). Equipment that is no longer in use is also reported through the same registration system.

Coverage: PET/MR and veterinary use is not covered.

Equipment is reported for HP.1 and HP.3 together (hospital and ambulatory sector). It is not possible to differentiate between HP.1 and HP.3 in the source data.

The reported data is limited to equipment that is subject to authorization from DSA according to the Radiation Protection Regulations (see "Strålevernforskriften på engelsk" here:

<https://dsa.no/regelverk>).

DSA's radiation source registration system was updated in 2016, and data before this is therefore not easily accessible.

Reference period: The reported data include registrations of equipment that have been registered and processed by DSA as of December 31 each year. Due to delays in the processing of registrations the actual number of equipment might be slightly higher or lower than reported on this date.

### **Positron Emission Tomography scanners**

Source of data: **The Norwegian Radiation and Nuclear Safety Authority (DSA)**. Undertakings that expect to acquire, lease, use or handle radiation sources that are subject to registration shall register their activities and each radiation source to DSA via DSA's radiation source registration system (<https://ems.dsa.no/>). Equipment that is no longer in use is also reported through the same registration system.

Coverage: PET/MR (1) is also included.

Equipment is reported for HP.1 and HP.3 together (hospital and ambulatory sector). It is not possible to differentiate between HP.1 and HP.3 in the source data.

The reported data is limited to equipment that is subject to authorization from DSA according to the Radiation Protection Regulations (see "Strålevernforskriften på engelsk" here:

<https://dsa.no/regelverk>).

DSA's radiation source registration system was updated in 2016, and data before this is therefore not easily accessible.

Reference period: The reported data include registrations of equipment that have been registered and processed by DSA as of December 31 each year. Due to delays in the processing of registrations the actual number of equipment might be slightly higher or lower than reported on this date.

### **Gamma cameras**

Source of data: **The Norwegian Radiation and Nuclear Safety Authority (DSA)**. Undertakings that expect to acquire, lease, use or handle radiation sources that are subject to registration shall register their activities and each radiation source to DSA via DSA's radiation source registration system (<https://ems.dsa.no/>). Equipment that is no longer in use is also reported through the same registration system.

Coverage: Ordinary gamma cameras are not included, only gamma cameras with CT and SPECT/CT.

Equipment is reported for HP.1 and HP.3 together (hospital and ambulatory sector). It is not possible to differentiate between HP.1 and HP.3 in the source data.

The reported data is limited to equipment that is subject to authorization from DSA according to the Radiation Protection Regulations (see "Strålevernforskriften på engelsk" here:

<https://dsa.no/regelverk>).

DSA's radiation source registration system was updated in 2016, and data before this is therefore not easily accessible.

Reference period: The reported data include registrations of equipment that have been registered and processed by DSA as of December 31 each year. Due to delays in the processing of registrations the actual number of equipment might be slightly higher or lower than reported on this date.

### **Mammographs**

Source of data: **The Norwegian Radiation and Nuclear Safety Authority (DSA).** Undertakings that expect to acquire, lease, use or handle radiation sources that are subject to registration shall register their activities and each radiation source to DSA via DSA's radiation source registration system (<https://ems.dsa.no/>). Equipment that is no longer in use is also reported through the same registration system.

Coverage: Equipment is reported for HP.1 and HP.3 together (hospital and ambulatory sector). It is not possible to differentiate between HP.1 and HP.3 in the source data.

The reported data is limited to equipment that is subject to authorization from DSA according to the Radiation Protection Regulations (see "Strålevernforskriften på engelsk" here: <https://dsa.no/regelverk>).

DSA's radiation source registration system was updated in 2016, and data before this is therefore not easily accessible.

Reference period: The reported data include registrations of equipment that have been registered and processed by DSA as of December 31 each year. Due to delays in the processing of registrations the actual number of equipment might be slightly higher or lower than reported on this date.

### **Radiation therapy equipment**

Source of data: **The Norwegian Radiation and Nuclear Safety Authority (DSA).** Undertakings that expect to acquire, lease, use or handle radiation sources that are subject to registration shall register their activities and each radiation source to DSA via DSA's radiation source registration system (<https://ems.dsa.no/>). Equipment that is no longer in use is also reported through the same registration system.

Coverage: Brachytherapy with eye applicators is counted with the number of 2, since this is done in two hospitals in Norway. The number of sources/seeds are not counted, which would be a larger amount. The Gammaknife is also counted as one unit, and not the number of sources within the equipment.

Equipment is reported for HP.1 and HP.3 together (hospital and ambulatory sector). It is not possible to differentiate between HP.1 and HP.3 in the source data.

The reported data is limited to equipment that is subject to authorization from DSA according to the Radiation Protection Regulations (see "Strålevernforskriften på engelsk" here: <https://dsa.no/regelverk>).

DSA's radiation source registration system was updated in 2016, and data before this is therefore not easily accessible.

Reference period: The reported data include registrations of equipment that have been registered and processed by DSA as of December 31 each year. Due to delays in the processing of registrations the actual number of equipment might be slightly higher or lower than reported on this date.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

## Switzerland

### **Computed Tomography scanners :**

Source of data: FSO Federal Statistical Office, Neuchâtel. For HP.1: Hospitals Statistics; yearly census.

Coverage:

- Full administrative data from the Federal Office of Public Health, Bern, Division of Radiological Protection.

- Since 2007, the data represent the number of apparatuses in use.

Deviation from the definition: 1997-2006 and 2015 in hospitals (HP.1) only; the data represent the number of hospitals running at least one unit.

Estimation method: Time series are not complete. Some data are available at irregular dates. To estimate data with consistent time periods, interpolation is therefore used on punctual data from permanent administrative registers.

Break in time series: New data since 2007. CT non-human health have been excluded since 2010. For HP.1: Hospital statistics have been revised (data year 2010); new counting of all equipment.

### **Magnetic Resonance Imaging units**

Source of data: FSO Federal Statistical Office, Neuchâtel, Hospitals Statistics; yearly census.

Coverage: Hospitals (HP.1).

Deviation from the definition: 1997-2006 and 2010-2015 in hospitals (HP.1) only; the data represent the number of hospitals running at least one unit.

Break in time series: Hospital statistics have been revised (data year 2010); new counting of all equipment.

### **Positron Emission Tomography scanners**

Source of data: FSO Federal Statistical Office, Neuchâtel.

Coverage: Full administrative data from the Federal Office of Public Health, Bern, Division of Radiological Protection.

### **Gamma cameras**

Source of data: FSO Federal Statistical Office, Neuchâtel.

Coverage: Full administrative data from the Federal Office of Public Health, Bern, Division of Radiological Protection.

Deviation from the definition: Number of health care providers with a valid permit to run Gamma cameras; it is assumed that hospitals have more than one gamma camera but the total number of units is unknown.

### **Digital Subtraction Angiography units**

Source of data: FSO Federal Statistical Office, Neuchâtel.

Coverage: Full administrative data from the Federal Office of Public Health, Bern, Division of Radiological Protection.

Estimation method: Interpolation on punctual data from a permanent administrative register.

### **Mammographs:**

Source of data: FSO Federal Statistical Office, Neuchâtel.

Coverage: Full administrative data from the Federal Office of Public Health, Bern, Division of Radiological Protection.

Estimation method: Time series are not complete. Some data are available at irregular dates. To estimate data with consistent time periods, interpolation is therefore operated on punctual data from permanent administrative registers.

### **Radiation therapy equipment**

Data collection discontinued in 2017 (reference year 2015)

Source of data: FSO Federal Statistical Office, Neuchâtel.

Coverage:

- Full administrative data from the Federal Office of Public Health, Bern, Division of Radiological Protection.

- Since 2007, the data represent the number of apparatuses in use.

Deviation from the definition: 1997 - 2006 in Hospitals (HP.1) only: the data represent the number of hospitals running at least one unit.

Estimation method: Time series are not complete. Some data are available at irregular dates. To estimate data with consistent time periods, interpolation is therefore operated on punctual data from permanent administrative registers.

Break in time series:

- New data on HP1 since 2010 from FSO Federal Statistical Office, Neuchâtel, hospital statistics; yearly census.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: FSO Federal Statistical Office, Neuchâtel , hospital statistics; yearly census.

Coverage: Hospitals (HP.1).

Deviation from the definition: 1997-2006 in Hospitals (HP.1) only: the data represent the number of hospitals running at least one unit.

Break in time series: Hospital Statistics has been revised (data year 2010); new counting of all equipment.

## **Montenegro**

### **Computed Tomography scanners**

Data not available.

### **Magnetic Resonance Imaging units**

Data not available.

### **Positron Emission Tomography scanners**

Data not available.

### **Gamma cameras**

Data not available.

### **Mammographs**

Data not available.

### **Radiation therapy equipment**

Data not available.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

## **North Macedonia**

### **Computed Tomography scanners**

Source of data: **Ministry of health.**

Reference period: 31<sup>st</sup> December.

Coverage: Data include only equipment from publicly owned hospitals and ambulatory sector, private sector is excluded.

### **Magnetic Resonance Imaging units**

Source of data: **Ministry of health.**

Reference period: 31<sup>st</sup> December.

Coverage: Data include only equipment from publicly owned hospitals and ambulatory sector, private sector is excluded.

### **Positron Emission Tomography scanners**

Source of data: **Ministry of health.**

Reference period: 31<sup>st</sup> December.

Coverage: Data include only equipment from publicly owned hospitals and ambulatory sector, private sector is excluded.

### **Gamma cameras**

Source of data: **Ministry of health.**

Reference period: 31<sup>st</sup> December.

Coverage: Data include only equipment from publicly owned hospitals and ambulatory sector, private sector is excluded.

### **Mammographs**

Source of data: **Ministry of health.**

Reference period: 31<sup>st</sup> December.

Coverage: Data include only equipment from publicly owned hospitals and ambulatory sector, private sector is excluded.

### **Radiation therapy equipment**

Source of data: **Ministry of health.**

Reference period: 31<sup>st</sup> December.

Coverage: Data include only equipment from publicly owned hospitals and ambulatory sector, private sector is excluded.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Ministry of health.

Reference period: 31st December.

Coverage: Data include only equipment from publicly owned hospitals and ambulatory sector, private sector is excluded.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Ministry of health.

Reference period: 31st December.

Coverage: Data include only equipment from publicly owned hospitals and ambulatory sector, private sector is excluded.

## **Albania**

### **Computed Tomography scanners**

Data not available.

### **Magnetic Resonance Imaging units**

Data not available.

### **Positron Emission Tomography scanners**

Data not available.

### **Gamma cameras**

Data not available.

### **Mammographs**

Data not available.

### **Radiation therapy equipment**

Data not available.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Data not available.

## **Serbia**

### **Computed Tomography scanners**

Source of data: Institute of Public Health of Serbia, Register of medical equipment of national interest. <http://www.batut.org.rs/>

Reference period: 31<sup>st</sup> of December.

Coverage: Data for Kosovo-Metohija province are not included in the coverage of data for the Republic of Serbia. Data from health institutions under other ministries (military services, prisons, social services) than the Ministry of Health are not included. Data from private health sector are not included.

### **Magnetic Resonance Imaging units**

Source of data: Institute of Public Health of Serbia, Register of medical equipment of national interest. <http://www.batut.org.rs/>

Reference period: 31<sup>st</sup> of December.

Coverage: Data for Kosovo-Metohija province are not included in the coverage of data for the Republic of Serbia. Data from health institutions under other ministries (military services, prisons, social services) than the Ministry of Health are not included. Data from private health sector are not included.

### **Positron Emission Tomography scanners**

Source of data: Institute of Public Health of Serbia, Register of medical equipment of national interest. <http://www.batut.org.rs/>

Reference period: 31<sup>st</sup> of December.

Coverage: Data for Kosovo-Metohija province are not included in the coverage of data for the Republic of Serbia. Data from health institutions under other ministries (military services, prisons, social services) than the Ministry of Health are not included. Data from private health sector are not included.

### **Gamma cameras**

Source of data: Institute of Public Health of Serbia, Register of medical equipment of national interest. <http://www.batut.org.rs/>

Reference period: 31<sup>st</sup> of December.

Coverage: Data for Kosovo-Metohija province are not included in the coverage of data for the Republic of Serbia. Data from health institutions under other ministries (military services, prisons, social services) than the Ministry of Health are not included. Data from private health sector are not included.

### **Mammographs**

Source of data: Institute of Public Health of Serbia, Register of medical equipment of national interest. <http://www.batut.org.rs/>

Reference period: 31<sup>st</sup> of December.

Coverage: Data for Kosovo-Metohija province are not included in the coverage of data for the Republic of Serbia. Data from health institutions under other ministries (military services, prisons, social services) than the Ministry of Health are not included. Data from private health sector are not included.

### **Radiation therapy equipment**

Source of data: Institute of Public Health of Serbia, Register of medical equipment of national interest. <http://www.batut.org.rs/> Data as of December 31.

Coverage: Data for Kosovo-Metohija province are not included in the coverage of data for the Republic of Serbia. Data from health institutions under other ministries (military services, prisons, social services) than the Ministry of Health are not included. Data from private health sector are not included.

### **Digital Subtraction Angiography units**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Institute of Public Health of Serbia, Register of medical equipment of national interest. <http://www.batut.org.rs/>

Reference period: 31st of December.

Coverage: Data for Kosovo-Metohija province are not included in the coverage of data for the Republic of Serbia. Data from health institutions under other ministries (military services, prisons, social services) than the Ministry of Health are not included. Data from private health sector are not included.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: Institute of Public Health of Serbia, Register of medical equipment of national interest. <http://www.batut.org.rs/>

Reference period: 31st of December.

Coverage: Data for Kosovo-Metohija province are not included in the coverage of data for the Republic of Serbia. Data from health institutions under other ministries (military services, prisons, social services) than the Ministry of Health are not included. Data from private health sector are not included.

## **Turkey**

### **Computed Tomography scanners**

Source of data: **General Directorate for Health Services, Ministry of Health.**

Coverage:

- Data cover the number of devices in the MoH, universities, private and other sector (other public establishments, local administrations and since 2012 MoND-affiliated facilities) as well as those used by outsourcing in Turkey.

### **Magnetic Resonance Imaging units**

Source of data: **General Directorate for Health Services, Ministry of Health.**

Coverage:

- Data cover the number of devices in the MoH, universities, private and other sector (other public establishments, local administrations and since 2012 MoND-affiliated facilities) as well as those used by outsourcing in Turkey.

### **Positron Emission Tomography scanners**

Source of data: **General Directorate for Health Services, Ministry of Health.**

Coverage:

- Data cover the number of devices in the MoH, university hospitals, private and other sector (other public establishments, local administrations and since 2012 MoND-affiliated facilities) in addition to those used by outsourcing in Turkey.

Note: The strong increase in 2012 is mainly due to improvements in data reporting and not to a real increase in the capacity.

### **Gamma cameras**

Source of data: **General Directorate for Health Services, Ministry of Health.**

Coverage:

- Data cover the number of devices in the MoH, university hospitals, private and other sector (other public establishments, local administrations and MoND-affiliated facilities) in addition to those used by outsourcing in Turkey.

Note: The strong increase in 2012 is mainly due to improvements in data reporting and not to a real increase in the capacity.

### **Mammographs**

Source of data: **General Directorate for Health Services, Ministry of Health.**

Coverage:

- Data cover the number of devices in the MoH, university hospitals, private and other sector (other public establishments, local administrations and MoND-affiliated facilities) in addition to those used by outsourcing in Turkey.

Note: The strong increase in 2012 is mainly due to improvements in data reporting and not to a real increase in the capacity.

### **Radiation therapy equipment**

Source of data: **General Directorate for Health Services, Ministry of Health.**

Coverage:

- Data cover the number of devices in the MoH, university hospitals, private and other sector (other public establishments, local administrations and MoND-affiliated facilities) in addition to those used by outsourcing in Turkey.

- Linear accelerators, Cobalt-60 units and brachytherapy units are included in **Radiation therapy equipment**.

### **Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: General Directorate for Health Services, Ministry of Health.

Coverage:

- Data cover the number of devices in the MoH, university hospitals, private and other sector (other public establishments, local administrations and MoND-affiliated facilities) in addition to those used by outsourcing in Turkey.

### **Lithotriptors**

Data collection discontinued in 2017 (reference year 2015)

Source of data: General Directorate Health Services, Ministry of Health.

Coverage:

- Data cover the number of devices in the MoH, university hospitals private and other sector (other public establishments, local administrations and MoND-affiliated facilities) in addition to those used by outsourcing in Turkey.

## **United Kingdom**

### **Computed Tomography scanners**

#### Source of data:

- **England:** NHS. Health Protection Agency, now Public Health England.
- **Scotland:** Scottish Healthcare Supplies (for 2004 and 2005 data).
- **Wales:** Welsh Health Estates.
- **Northern Ireland:** Social Services and Public Safety (for 2004 and 2005 data).

#### Coverage:

- Does not include private sector.
- **Wales** - Excludes CT Scanners used for radiation therapy planning purposes (CT Sims) and Hybrid imaging systems eg Ct-**Gamma cameras**.

#### Estimation method:

- 2000 to 2001 and 2008: Only available data was for England. UK figure estimated based on a pro-rata increase using UK population data.
- 2002 to 2003: Only Great Britain data available. UK estimate based on a pro-rata increase using UK population data.
- 2006: UK figure estimated as Scottish data unavailable. 2005 Scottish data used, following agreement with the Health Protection Agency.
- For 2010 onwards only available data was for England and Wales, and UK level figure was submitted based on a pro-rata increase using UK population data.
- No England and therefore UK data from 2015 onwards.

### **Magnetic Resonance Imaging units**

#### Source of data:

- **England:** NHS. Health Protection Agency, now Public Health England.
- **Scotland:** Scottish Healthcare Supplies (for 2004 and 2005 data).
- **Wales:** Welsh Health Estates.
- **Northern Ireland:** Social Services and Public Safety (for 2004 and 2005 data).

#### Coverage:

- Does not include private sector.

#### Estimation method:

- 2000 to 2001 and 2008: Only available data were for England. UK estimate based on a pro-rata increase using UK population data.
- 2002 to 2003: Only Great Britain data available. UK estimate based on a pro-rata increase using UK population data.
- 2006: UK figure estimated as Scottish data unavailable. 2005 Scottish data used, following agreement with the Health Protection Agency.
- For 2010 onwards only available data was for England and Wales, and UK level figure was submitted based on a pro-rata increase using UK population data.
- No England and therefore UK data from 2015 onwards.

### **Positron Emission Tomography scanners**

Source of data:

- 'A framework for the development of Positron Emission Tomography Services in England' ([www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4121029](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4121029));

- **Royal College of Radiologists**

(<http://www.rcr.ac.uk/Publications.aspx?pageid=310&PublicationID=214>).

Coverage: UK, NHS and Private.

- Since 2006, no England data available so a UK level estimate not created.

### **Gamma cameras**

Source of data: Medical technology data are not collected on a regular basis. UK data for 1989/1990, 1992/1993 and 2003/2004 are from HPA -

[http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_c/1194947340193](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_c/1194947340193). But since 2004 no England data available so a UK level estimate not created.

### **Mammographs**

Source of data: **NHS Cancer Screening Programme taken from the NCCPM equipment reports.**

No source available from 2012 onwards.

Reference period: Data are for the year ending October until 2001, year ending November in 2002 and 2003, year ending December in 2004, year ending June in 2005, year ending September in 2006-2009, and year ending October in 2010.

Coverage:

- Mammography sets in use in the NHS Screening Programme. They cannot be used for anything other than mammography, but could be used for either screening mammography or for investigation of symptoms. There are other machines used only for investigations of symptoms, but their number is not known. Does not include those machines used for private mammography.

Break in time series: 2010. Pre-2010 is England only. 2010 onwards is based on a UK estimate.

### **Radiation therapy equipment**

Source of data:

- **England:** NHS, Public Health England.

- **Wales:** Welsh Health Estates.

Coverage:

- Does not include private sector.

- 2002, 2003, 2005: England and Wales. 2004: England, Wales and Northern Ireland. 2008: England only. 2010 onwards (for years provided) is based on data for England and Wales.

- 2010, 2011 and 2014 figures only include Linacs.

Estimation method:

- Raw numbers for England and Wales have been increased pro-rata by the OECD Secretariat to provide appropriate numbers for the UK, enabling the correct computation of rates using the UK population data stored within the database.

- 2017 data: At the time of calculation, the 2017 population data was not available. Therefore, the UK level estimation has been calculated using the 2016 population data.

Break in time series: 2016. Change in data collection methodology. Since 2016, data include Brachytherapy Treatment Machines, Kilovoltage Treatment Machines and Other Treatment Machines (Cyberknife, GammaKnife and Adrienne Systems) in addition to Linacs.

### **Digital Subtraction Angiography units:**

Data collection discontinued in 2017 (reference year 2015)

Source of data: <http://www.library.nhs.uk/cardiovascular/viewresource.aspx?resID=289546>.

Coverage:

- England and Wales.
- 2006/2007 comprises 35 angiographs in England, two in Wales and one in London Chest Hospital.
- 2007/2008 comprises 54 in England, two in Wales, one in London Chest Hospital.
- 2007 onwards – no England data available so a UK level estimate not created.

Estimation method: Raw numbers of angiography units for 2006-2007 have been increased pro-rata by the OECD Secretariat to provide appropriate numbers for the UK, enabling the correct computation of rates using the UK population data stored within the database.

**Lithotriptors:**

Data collection discontinued in 2017 (reference year 2015)

Data not available.