Magnetic Resonance Imaging units

Number of Magnetic Resonance Imaging units (MRI units).

MRI is an imaging technique designed to visualise internal structures of the body using magnetic and electromagnetic fields which induce a resonance effect of hydrogen atoms. The electromagnetic emission created by these atoms is registered and processed by a dedicated computer to produce the images of the body structures.

Sources and Methods

Australia

Source of data:

Reference period: Years reported are financial years 1st July to 31st June (e.g. data for 2012 are as at 30th June 2012).

Coverage:
- MRI units are assumed to be ambulatory if flagged as a ‘Mobile MRI unit’.

Note: The large increase in the number of MRI units between 2012 and 2013 is due to a Government program, the 2012 MRI Expansion initiative. As a result of this initiative approximately 200 further MRI units have Medicare eligibility (that is, they are accessible as publicly funded health care).

Austria


Reference period: 31st 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).

Belgium


Reference period: 31st December.

Coverage:
- 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.
- 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 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.

Canada

Source of data:
- 1982-2001: Canadian Coordinating Office for Health Technology Assessment (CCOHTA), renamed the Canadian Agency for Drugs and Technology in Health (CADTH) in April 2006, National Inventory of Selected Imaging Equipment.
- 2015 and 2017: Canadian Agency for Drugs and Technology in Health (CADTH), Canadian Medical Imaging Inventory. See cadth.ca/medical-imaging.

Coverage:
- 1982-2001: The first MRI unit was installed in 1982. Surveys were not carried out in 1996, 1998, 1999 and 2002. MRI units in Quebec are not included in 2000. MRI units located in both hospitals and in free-standing imaging facilities are included. The number of units in free-standing imaging facilities was compiled for years prior to 2003 based on data collected in the 2003 National Survey of Selected Medical Imaging Equipment, conducted by the Canadian Institute for Health Information.
- 2003-2012: CIHI undertook a national survey of selected medical imaging equipment in 2003 similar to the survey conducted by CCOHTA in previous years. The survey was decommissioned in 2012. No survey was conducted in 2008. The CIHI survey tracked data on machines installed in Canadian hospitals and those in free-standing imaging facilities (sometimes called “non-hospital”, “community-based”, and /or “private” facilities). As at 1st January 2012, there were 242 MRI units in hospitals and 66 MRI units in free-standing imaging facilities.
- 2013: The 2012 MIT survey collected the number of MRI units installed after 1st January 2012. This number was added to the 2012 number to get the total count of MRI units installed as of 1st January 2013.
- 2015 and 2017: In 2015, CADTH has taken on the collection of data on medical imaging technologies in Canada and will continue to maintain the national inventory and publish a report of the findings every two years. The unit counts were supplied to CADTH by provincial validators and include units in publicly funded sites only in 2015 while they also include some privately funded units in 2017. No distinction between units in hospitals and free-standing imaging facilities is available from CADTH’s reports The Canadian Medical Imaging Inventory, 2015 and The Canadian Medical Imaging Inventory, 2017 published on cadth.ca/medical-imaging.
- Provisional data for 2018 based on historical trends in MRI exams data reported in the Canadian MIS Database (CMDB) at the Canadian Institute for Health Information while assuming the same number of exams per MRI unit as in 2017.

Chile

Source of data: Ministry of Health, Investment Division.
- The data collection was conducted through an annual survey from the Ministry of Health to all country health services (by the office of Secretary for Care Networks, addressed to the Directors of Health and Experimental Centres, and Chief of the local Imaging Departments).

Methodology: The methodology used was to ask providers of this type of equipment their installed base of equipment in operation, for both public and private area.

Coverage:
- Public and private sector
- The information submitted reflects the capacity up to 31st December, available in both public and private sectors of Health.
- Hospitalisation (Hospitals and Clinics) and ambulatory care (Medical Offices and clinics of specialties). Some equipment may be used for both hospital and outpatient care (they are shared equipment).

Break in time series: in 2013, there was a change in the methodology of the survey.

Czech Republic

Source of data: Institute of Health Information and Statistics of the Czech Republic; Survey on medical apparatus in health establishments.
Reference period: 31st 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.


**Denmark**

Source of data: National Board of Health, “The Scanner report”.
Reference period: 31st of December.
Coverage: The 2009 data have been provided by the Danish Regions.

**Estonia**

Reference period: 31st 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”.

**Finland**

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

**France**

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: 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.

**Germany**

Stationary sector:
Reference period: 31st 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.

**Greece**

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

**Coverage:** Country Total (in HP1 military hospitals are not included).

**Hungary**

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

**Reference period:** 31st 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 MRI units which are owned by health care institutions under contract with the National Insurance Fund (OEP).

**Iceland**

**Source of data:** Icelandic Radiation Safety Authority.

**Reference period:** 31st December.

**Ireland**

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

**Israel**

**Source of data:** The data are based on the Medical Institutions License Registry maintained by the Department of Medical Facilities and Equipment Licensing and the Health Information Division in the Ministry of Health.

**Reference period:** End of the year.

**Coverage:** Includes all licensed MRI units (includes MRI for diagnosis, for research and I-MRI for surgery).

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

**Italy**

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

**Reference period:** 1st 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.

**Japan**
Source of data: Ministry of Health, Labour and Welfare, Survey of Medical Institutions (several issues).
Coverage:
- In hospitals only until 1999; and in all hospitals and medical clinics in 2002.
- The survey items on medical technology are included in the large-scale survey conducted every three years.
- Figures of 2011 exclude data of Ishinomaki medical area and Kesennuma medical area of Miyagi Prefecture, and Fukushima Prefecture.

Korea

Source of data: Health Insurance Review & Assessment Service, National Health Insurance Corporation, National Health Insurance Statistical Yearbook, each year.

Latvia

Source of data: Centre for Disease Prevention and Control; Statistical Report no.49 "About Diagnostic Radiology".
Reference period: 31st December.

Lithuania

Reference period: 31st December.
Coverage: The number of functioning equipment.

Luxembourg

Source of data: Direction de la Santé, Division de la Radioprotection.
Coverage: Includes all equipment in use.

Mexico

Source of data:
- From 2003 to 2017: data are taken from the National Health Information System (SINAIS). The data source for private providers is National Institute of Statistics and Geography (INEGI). National Survey on Medical units with Inpatient Hospital Services.
Coverage:
- Includes information from public institutions (MOH, IMSS-Oportunidades, Services of the Federal District, IMSS, ISSSSTE, PEMEX, SEDENA, SEMAR, state health hospitals, university hospitals) and private providers.
- The observed increase probably is due to improvements in reporting and not to a real increase in equipment.
- From 2004 onwards, the equipment was identified by type of provider, using the same source, associating the unique ID included in the catalog of health establishments of health facilities (CLUES) by medical unit to confirm whether it is a hospital or ambulatory unit.

Netherlands

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.
New Zealand

Source of data: Royal Australian and New Zealand College of Radiologists.
Coverage:
- As at 24 January 2019 there were 72 MRI’s in both public and private locations, this indicates there are an increase by 7 units from January 2018.
- These are the figures the College believes to be accurate. This is not an estimation, rather a reflection of physical resources currently in use.
- The database does not distinguish between hospital and ambulatory care settings.

Norway

Data not available.

Poland

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 31st December.
- MZ-29 - report on activity of general hospital. Data as at 31st 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 31st December.
Since 2014:
Ministry of Health:
- MZ-29 - report on activity of general hospital. Data as at 31st 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 31st December.
Break in time series:
- 2014: change in data source as described above.

Portugal

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.

Slovak Republic

Source of data: National Health Information Center.
Reference period: 31st December.
Coverage: Medical technologies available regardless of frequency of use.
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.

Slovenia

Source of data: Slovenian Radiation Protection Administration, Registry of radiation sources in medicine and veterinary medicine and Health Insurance Institute of Slovenia.
Reference period: 31st December.
Coverage: Refers to all institutions in Slovenia.

Spain

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

Reference period: 31st 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.
- Change in data source.
- Information about medical technology and diagnostic activity for centers HP.3 included since 2010.

Sweden

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.
- 2017 December.

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

Switzerland

Coverage: Hospitals (HP.1).
- The data refer to the number of equipment available in hospitals (HP.1) only.
- Hospital statistics have been revised (data year 2010); new counting of all equipment.

Turkey

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.

United Kingdom

Source of data:
- Wales: Welsh Health Estates.

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.

**United States**

**Source of data:**

**Coverage:**
- Nationwide. IMV’s MRI reports utilize a survey methodology to query hospital and non-hospital sites in the United States performing MRI procedures using fixed MRI scanners or using mobile MRI services. The survey results are projected to the universe of identified MRI sites. Candidate MRI sites are identified using proprietary IMV databases, supplemented by the American Hospital Association’s AHA guide (The AHA Guide to the Health Care Field), and site lists identified through secondary research.
- US territories are not included.
- The U.S. ambulatory sector data provides the estimated number of units in non-hospitals sites which include: 1) imaging centres owned/co-owned by a hospital or health care systems, and 2) freestanding (i.e. independent) which includes owned or co-owned by radiology practices, multispecialty physician practices, orthopedics practices, or companies that own multiple imaging centers, and 3) estimates for MRI scanners in mobile MRI vans. Excludes units in mobile vans that serve multiple sites (hospitals and non-hospitals).
- IMV does not include units dedicated to research - i.e. National Institute of Health and other research-only sites.
- A source of error in the sample is the possible omission of sites from the universe of all sites, which have thus far still escaped identification, particularly non-hospital sites.

**Deviation from the definition:** Data match the OECD definition.

**Estimation method** - Further information on the estimation method for the selected IMV Benchmark Reports can be found at [http://www.imvinfo.com](http://www.imvinfo.com).

**Break in time series:** No breaks in time series.

**NON-OECD ECONOMIES**

**Brazil**

**Source:** Ministério da Saúde/SAS - Cadastro Nacional de Estabelecimentos de Saúde (CNES).


**China**

Data not available.

**Colombia**

**Source:** Hospital Information System (SIHO), *Ministry of Health and Social Protection*.

**Coverage:** Data correspond only to public health care providers (IPS). Private IPS are not included.

**Costa Rica**


**India**

Data not available.
**Indonesia**

Data not available.

**Russian Federation**


Note: This document, as well as any data and any map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

**South Africa**

Data not available.


[http://www.oecd.org/health/health-data.htm](http://www.oecd.org/health/health-data.htm)