

## 4. HEALTH CARE ACTIVITIES

### 4.2. Medical technologies

Progress in medical technologies continues to transform health care delivery and to improve life expectancy and quality of life, but it is also one of the main drivers of rising health expenditure across OECD countries. This section presents data on the availability and use of two diagnostic technologies – computed tomography (CT) scanners and magnetic resonance imaging (MRI) units.

CT scanners and MRI units help physicians diagnose a range of conditions by producing cross-sectional views of the inside of the body. Unlike conventional radiography and CT scanning, newer imaging technology used in MRI units does not expose patients to ionising radiation which may cause damage in living tissue.

The availability of CT scanners and MRI units has increased rapidly in most OECD countries over the past two decades. Japan has, by far, the highest number of MRI and CT scanners per capita, followed by the United States for MRI units and by Australia for CT scanners (Figures 4.2.1 and 4.2.2). At the other end of the scale, the number of MRI units and CT scanners were the lowest in Mexico, Hungary and Israel.

Data on the use of MRI and CT scanners are available for a smaller group of countries, excluding Japan. Based on this more limited country coverage, the number of MRI and CT examinations per capita is highest in Greece and the United States, followed by Luxembourg and Iceland (Figures 4.2.3 and 4.2.4).

In Greece, most CT and MRI scanners are installed in private diagnostic centres, and only a minority are found in public hospitals. There are no regulations concerning the purchase of MRI units in Greece, while the purchase of CT scanners requires a licence that is granted following a review that is based on a criterion of population density. There are also no guidelines concerning the use of CT and MRI scanners (Paris *et al.*, 2010). The current situation has led the Greek Ministry of Health and Social Solidarity to establish an expert committee to review regulations and propose new criteria for the purchase of CT and MRI scanners.

In the United States, evidence suggests that there is an overuse of CT and MRI examinations. Between 1997 and 2006, the number of scans in the United States increased dramatically while the occurrence of illnesses has remained constant (Smith-Bindman *et al.*, 2008).

Furthermore, payment incentives allow doctors to benefit from exam referrals which also increase the likelihood of overuse. Many studies have attempted to assess tangible medical benefits of the substantial increase in CT and MRI examinations in the United States but have found no conclusive evidence of such benefits (Baker *et al.*, 2008).

Other OECD countries are also examining ways to promote the more rational purchase and use of diagnostic technologies (OECD, 2010b). In the United Kingdom, the National Institute for Health and Clinical Excellence set up in 2009 a Diagnostics Advisory Committee to evaluate and make recommendations for the appropriate use of diagnostic technologies within the NHS in England (NICE, 2009).

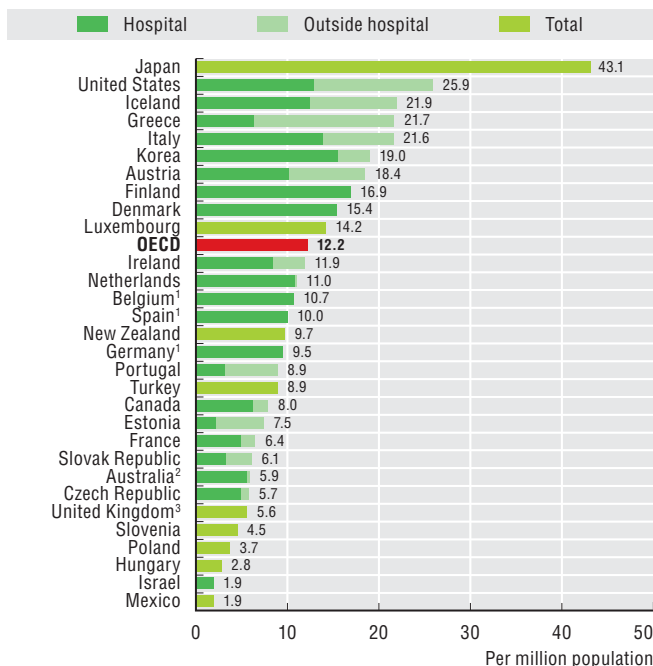
#### Definition and comparability

For MRI units and CT scanners, the numbers of equipment per million population are reported. MRI exams and CT exams relate to the number of exams per 1 000 population. In most countries, the data cover equipment installed both in hospitals and the ambulatory sector.

However, there is only partial coverage for some countries. CT scanners and MRI units outside hospitals are not included in some countries (Belgium, Germany and Spain). For the United Kingdom, the data only include scanners in the public sector. For Australia, the number of MRI units and CT scanners includes only those eligible for reimbursement under Medicare, the universal public health system (in 1999, 60% of total MRI units were eligible for Medicare reimbursement). Also for Australia, MRI and CT exams only include those for outpatients and private inpatients (excluding those in public hospitals). MRI and CT exams for Ireland only cover public hospitals, while Korea and the Netherlands only include publicly financed exams.

Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

4.2.1 MRI units, 2009 (or nearest year)



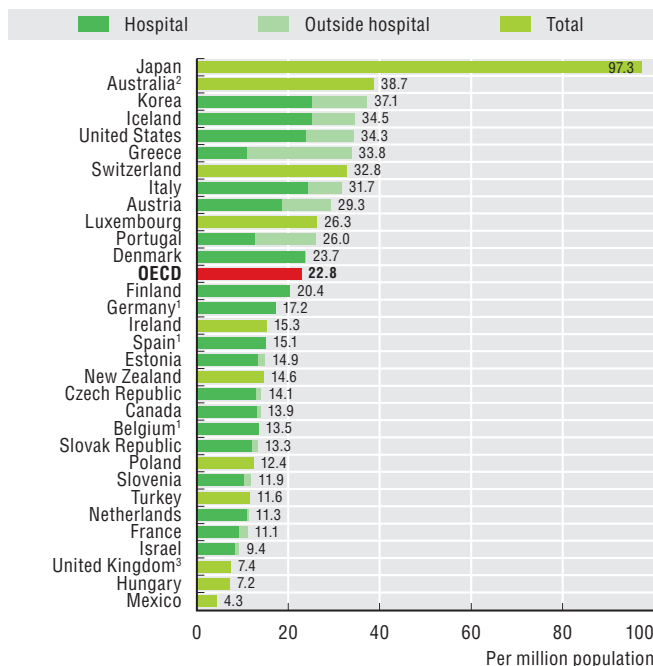
Note: The OECD average does not include countries which only report equipment in hospital (Belgium, Germany and Spain).

1. Equipment outside hospital not included.
2. Only equipment eligible for reimbursement under Medicare.
3. Any equipment in the private sector not included.

Source: OECD Health Data 2011.

StatLink <http://dx.doi.org/10.1787/888932524469>

4.2.2 CT scanners, 2009 (or nearest year)



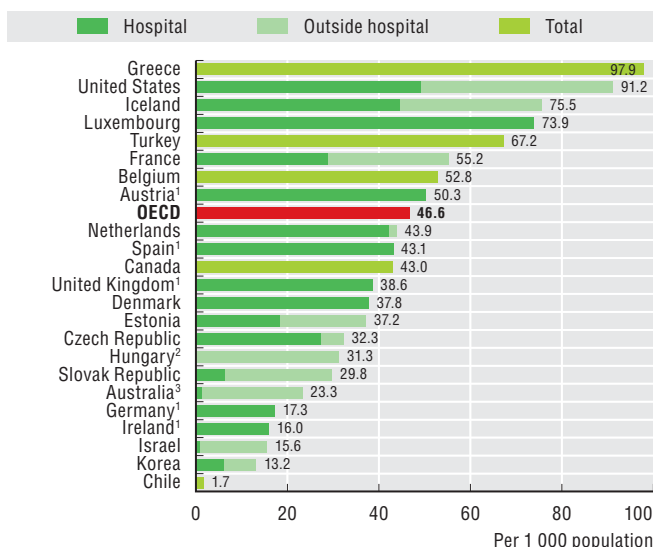
Note: The OECD average does not include countries which only report equipment in hospital (Belgium, Germany and Spain).

1. Equipment outside hospital not included.
2. Only equipment eligible for reimbursement under Medicare.
3. Any equipment in the private sector not included.

Source: OECD Health Data 2011.

StatLink <http://dx.doi.org/10.1787/888932524488>

4.2.3 MRI exams, 2009 (or nearest year)



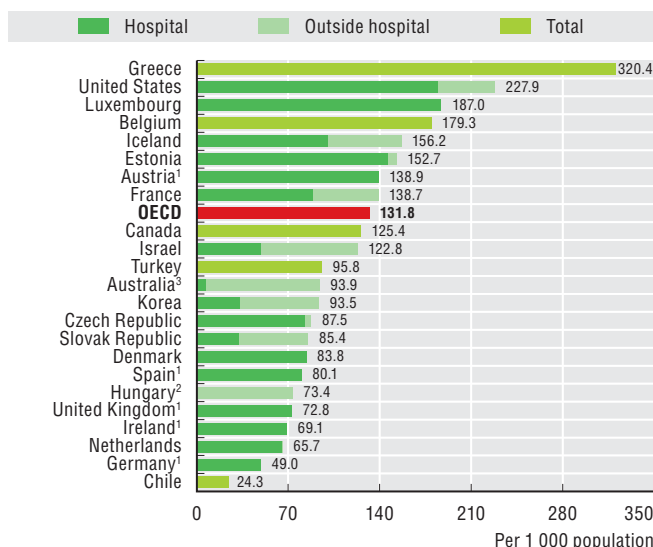
Note: The OECD average does not include countries which only report exams in or outside hospital.

1. Data for exams outside hospital are not available.
2. Data for exams in hospital are not available.
3. Only include exams for outpatients and private inpatients (excluding exams in public hospitals).

Source: OECD Health Data 2011.

StatLink <http://dx.doi.org/10.1787/888932524507>

4.2.4 CT exams, 2009 (or nearest year)



Note: The OECD average does not include countries which only report exams in or outside hospital.

1. Data for exams outside hospital are not available.
2. Data for exams in hospital are not available.
3. Only include exams for outpatients and private inpatients (excluding exams in public hospitals).

Source: OECD Health Data 2011.

StatLink <http://dx.doi.org/10.1787/888932524526>



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