Use of diagnostic technologies

Modern diagnostic technologies play an important role in health systems, allowing physicians to better diagnose health issues. However, they can also drive up costs, particularly if they are overused or misused.

This section focuses on the use of three diagnostic imaging technologies that can help diagnose different health issues: computed tomography (CT), magnetic resonance imaging (MRI) and positron emission tomography (PET) exams. CT and MRI exams both show images of internal organs and tissues, while PET scans show other information and problems at the cellular level. Unlike more traditional radiography and CT scanning, MRI and PET exams do not expose patients to ionising radiation, which can increase the risk of cancer if the exposition of radiation is not properly managed. CT exams were first introduced in the 1970s, MRI exams in the 1970s and the 1980s, while PET exams were introduced around the year 2000.

In 2019 (the year before the pandemic), the use of these three diagnostic exams taken together was highest in Austria, France, Luxembourg, Belgium and Germany, with utilisation rates at least 40% higher than the average across EU countries. The utilisation rate was lowest in Romania and Bulgaria with rates less than half the EU average (Figure 7.21).

Figure 7.22 highlights the large variation in the use of MRI exams between Western European countries and Central and Eastern European countries. While the use of MRI exams has increased over the past two decades in all countries, there was still in 2019 a ten-fold difference in their use between the three countries that use them the most (Germany, Austria and France) and the three countries that use them the least (Cyprus, Romania and Bulgaria).

During the pandemic that started in early 2020, diagnostic activities as well as other health services were disrupted and sometime temporarily suspended to divert efforts towards COVID-19 patients and avoid people getting infected while seeking diagnostics or care. Across 22 EU countries, over 7 million fewer MRI, CT and PET diagnostic exams were performed in 2020 compared with 2019. The reduction was particularly marked in Greece and Lithuania (Figure 7.21). This reduction in diagnostic activities has generated backlogs in some countries, leading to longer waiting times and waiting lists in 2020 and 2021.

Several EU countries have developed policies to increase the supply of diagnostic tests following the first waves of the pandemic, including creating diagnostic dedicated hubs and performance monitoring (OECD, forthcoming[1]).

Definition and comparability

While the data in most countries cover CT, MRI and PET exams in hospitals as well as in the ambulatory sector, the data coverage is more limited in some countries. Any CT, MRI and PET exams performed outside hospitals are not included in Portugal, Switzerland and the United Kingdom. Exams in Cyprus only cover public hospitals. The Netherlands only report data on publicly-financed exams.

References

OECD (forthcoming), *Ready for the Next Crisis? Investing in Resilient Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris. [1]
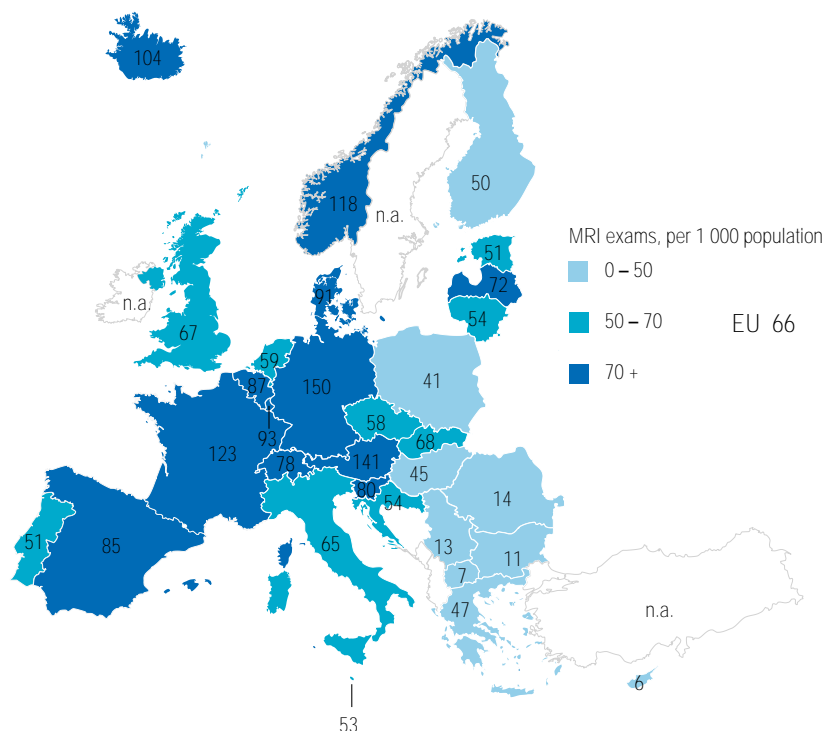
Figure 7.21. CT, MRI and PET exams per 1 000 population, 2019 and 2020
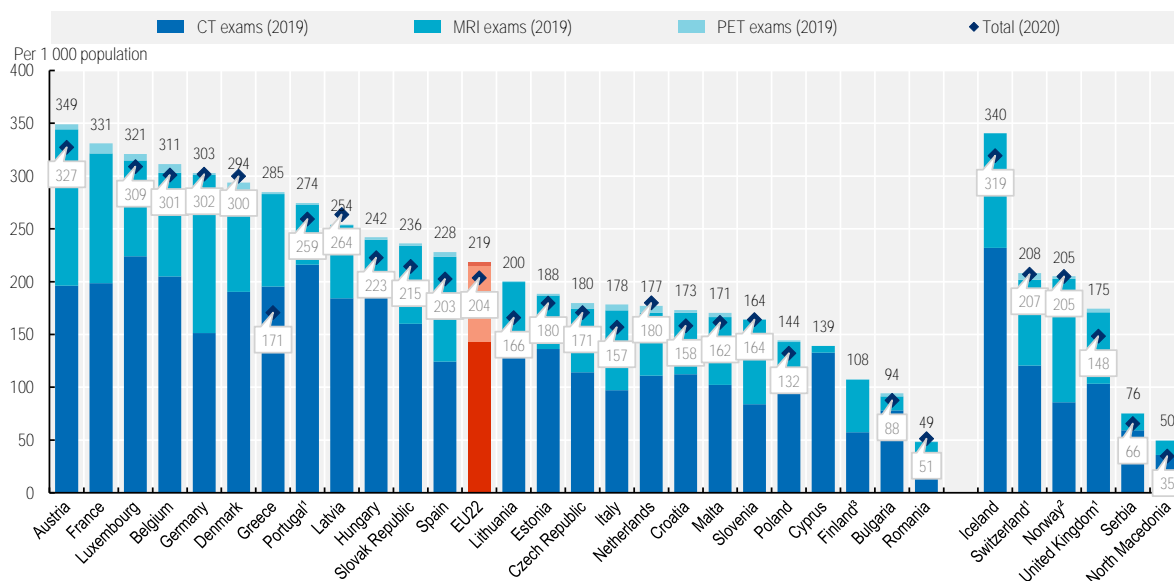

Note: The EU average is unweighted. 1. Any exams outside hospital are not included in Portugal, Switzerland and the United Kingdom. 2. Any exams in hospital are not included in Norway. 3. The data for Finland relate to 2018.
Source: OECD Health Statistics 2022; Eurostat Database.

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Figure 7.22. MRI exams per 1 000 population, 2020 (or nearest year)

Note: The EU average is unweighted. Exams outside hospital are not included in Portugal, Switzerland and the United Kingdom. Exams in hospital are not included for Norway.
Source: OECD Health Statistics 2022; Eurostat Database.
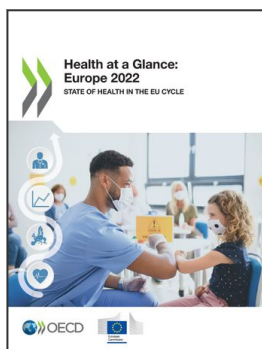
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