

Heart diseases are a leading cause of hospitalisation and death in European countries (see Indicator 1.4). Coronary artery bypass graft and angioplasty have revolutionised the treatment of ischemic heart diseases in the past few decades. A coronary bypass is an open-chest surgery involving the grafting of veins and/or arteries to bypass one or multiple obstructed arteries. A coronary angioplasty is a much less invasive procedure involving the threading of a catheter with a balloon attached to the tip through the arterial system to distend the coronary artery at the point of obstruction; the placement of a stent to keep the artery open accompanies the majority of angioplasties.

In 2012, Germany, Hungary, the Netherlands, Belgium and Austria had the highest rates of revascularisation procedures overall and coronary angioplasty more specifically (Figure 3.8.1).

A number of reasons can explain cross-country variations in the rate of coronary bypass and angioplasty, including: i) differences in the capacity to deliver and pay for these procedures; ii) differences in clinical treatment guidelines and practices; and iii) differences in coding and reporting practices.

However, the large variations in the number of revascularisation procedures across countries do not seem to be closely related to the incidence of ischemic heart disease (IHD), as measured by IHD mortality (see Indicator 1.3). For example, IHD mortality in Germany is below the EU average, but Germany has the highest rate of revascularisation procedures.

National averages can hide important variations in utilisation rates within countries. For example, in Germany, the rate of coronary bypass surgery and angioplasty is nearly three times higher in certain regions compared with others. There are also wide variations in the use of these revascularisation procedures across regions in other countries such as Finland, France and Italy (OECD, 2014).

The use of angioplasty has increased rapidly over the past 20 years in most European countries, overtaking coronary bypass surgery as the preferred method of revascularisation around the mid-1990s – about the same time that the first published trials of the efficacy of coronary stenting began to appear. On average across EU countries, angioplasty now accounts for 80% of all revascularisation procedures (Figure 4.6.2), and exceeds 85% in Estonia, France and Spain. In Denmark, the share of angioplasty increased quickly between 2000 and 2006, but has fallen slightly since then. This slight reduction may be due partly to the fact that the data reported by Denmark does not cover the growing number of angioplasties that are performed as day cases (without any overnight stay in

hospital). In addition, in Denmark as in other countries, the greater use of drug-eluting stents reduces the likelihood that the same patient will need another angioplasty.

Coronary angioplasty is an expensive intervention, but it is much less costly than a coronary bypass surgery because it is less invasive. The estimated price of an angioplasty on average across European countries was about EUR 5 600 in 2011 compared with EUR 13 800 for a coronary bypass (Koechlin et al., 2014). Hence, for patients who would otherwise have received bypass surgery, the introduction of angioplasty has not only improved outcomes but has also decreased costs. However, because of the expansion of surgical interventions, overall costs have risen.

#### Definition and comparability

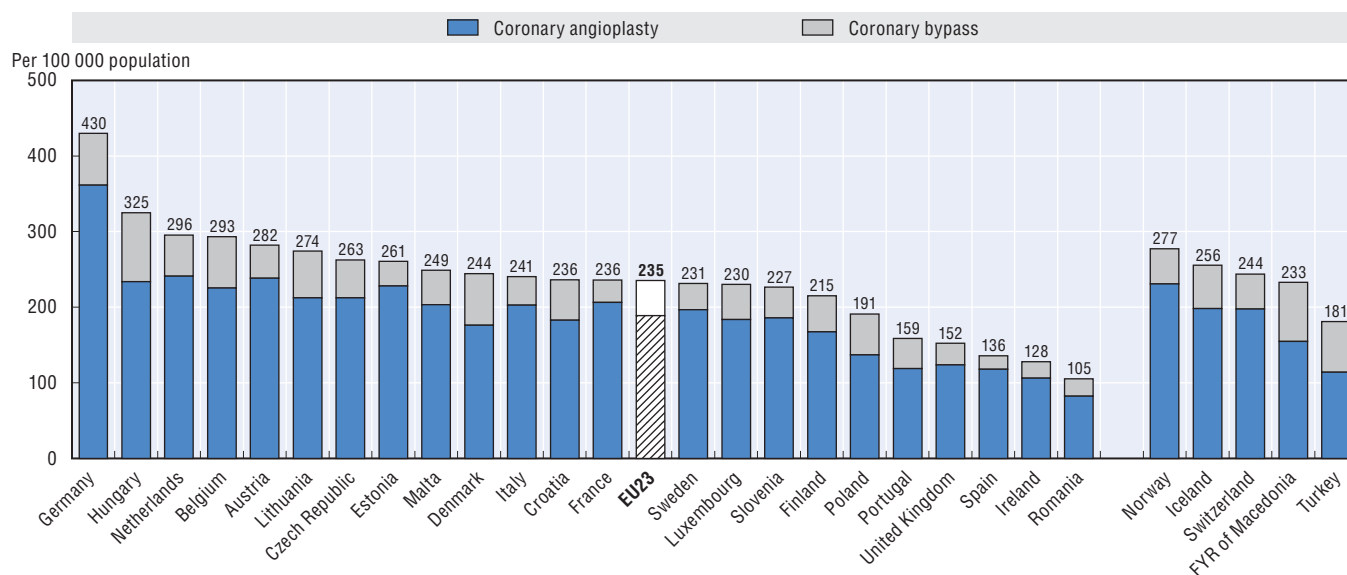
The data for most countries cover both inpatient and day cases, with the exception of Denmark, Iceland, Norway, Portugal and Switzerland, where they only include inpatient cases (resulting in some under-estimation in the number of coronary angioplasties; this limitation in data coverage does not affect the number of coronary bypasses since nearly all patients are staying at least one night in hospital after such an operation). Some of the variations across countries may also be due to the use of different classification systems and different codes for reporting these two procedures.

In Ireland and the United Kingdom, the data only include activities in publicly-funded hospitals, resulting in an under-estimation (it is estimated that approximately 15% of all hospital activity in Ireland is undertaken in private hospitals). Data for Portugal relate only to public hospitals on the mainland. Data for Spain only partially include activities in private hospitals.

#### References

- Koechlin, F. et al. (2014), “Comparing Hospital and Health Prices and Volumes Internationally: Results of a Eurostat/OECD Project”, *OECD Health Working Papers*, No. 75, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5jxznwrj32mp-en>.
- OECD (2014), *Geographic Variations in Health Care Use: What Do We Know and What Can Be done to Improve Health System Performance?*, OECD Health Policy Studies, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264216594-en>.

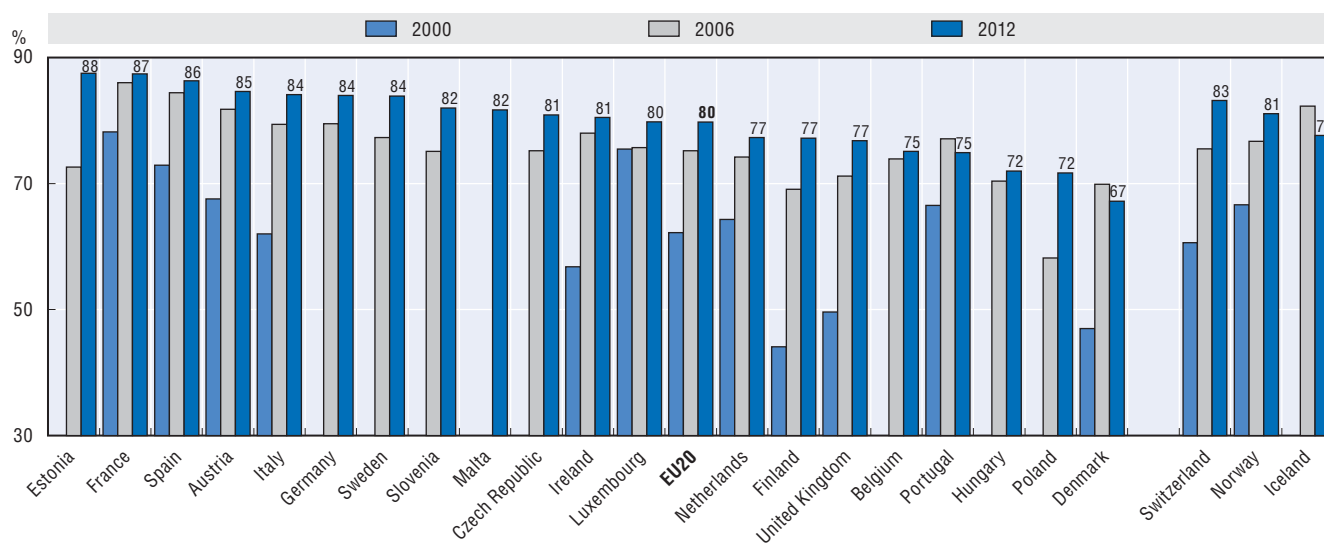
## 3.8.1. Coronary revascularisation procedures, 2012 (or nearest year)



Note: Some of the variations across countries are due to different classification systems and recording practices.


Source: OECD Health Statistics 2014, <http://dx.doi.org/10.1787/health-data-en>; Eurostat Statistics Database.

## 3.8.2. Coronary angioplasty as a share of total revascularisation procedures, 2000 to 2012 (or nearest year)



Note: Revascularisation procedures include coronary bypass and angioplasty.

Source: OECD Health Statistics 2014, <http://dx.doi.org/10.1787/health-data-en>.

StatLink  <http://dx.doi.org/10.1787/888933155625>



**From:**  
**Health at a Glance: Europe 2014**

**Access the complete publication at:**  
[https://doi.org/10.1787/health\\_glance\\_eur-2014-en](https://doi.org/10.1787/health_glance_eur-2014-en)

**Please cite this chapter as:**

OECD/European Union (2014), “Cardiac procedures”, in *Health at a Glance: Europe 2014*, OECD Publishing, Paris.

DOI: [https://doi.org/10.1787/health\\_glance\\_eur-2014-32-en](https://doi.org/10.1787/health_glance_eur-2014-32-en)

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document 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.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to [rights@oecd.org](mailto:rights@oecd.org). Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at [info@copyright.com](mailto:info@copyright.com) or the Centre français d'exploitation du droit de copie (CFC) at [contact@cfcopies.com](mailto:contact@cfcopies.com).