



1.1. COVID vaccination in the last six months (at least one dose, % of the population) (R-10); COVID vaccination in the last six months (at least one dose, % of the population aged 65+) (R-11)

1.1.1. Documentation sheet

Description	<p>Principal indicators</p> <p>Percentage of the adult population who received at least one COVID-19 vaccine dose in the last six months (R-10)</p> <p>Percentage of the population aged 65 years or more who received at least one COVID-19 vaccine dose in the last six months (R-11)</p> <p>Secondary indicators</p> <p>Percentage of the healthcare professionals who received at least one COVID-19 vaccine dose in the last six months</p> <p>Percentage of the population aged 85 years or more who received at least one COVID-19 vaccine dose in the last six months</p> <p>Percentage of the considered population (18+, 65+, 85+, healthcare professionals) who is vaccinated (primary course)</p> <p>Percentage of the considered population (18+, 65+, 85+, healthcare professionals) who is vaccinated (primary course + first booster)</p>
Calculation	<p>Percentage of the adult population (resp. aged 65+, 85+ years) who received at least one COVID-19 vaccine dose in the last six months: <u>Numerator</u>: number of Belgian adult residents (resp. persons aged 65 years or more, persons aged 85 years or more, on the 1st January of the considered year) having received a COVID-19 vaccine dose in the last six months, calculated per two weeks; <u>Denominator</u>: total adult population (resp. aged 65 years or more, aged 85 years or more) on the 1st January of the considered year.</p> <p>Percentage of the healthcare professionals who received at least one COVID-19 vaccine dose in the last six months: <u>Numerator</u>: number of healthcare professionals having received a COVID-19 vaccine dose in the last six months, calculated per two weeks; <u>Denominator</u>: total number of healthcare professionals alive and active in Belgium at the start of the vaccination campaign.</p> <p>Percentage of the targeted population (aged 18+, 65+, 85+ years) who is vaccinated (primary course) (resp. primary course + first booster): <u>Numerator</u>: number of Belgian adults (resp. persons aged 65 years or more, persons aged 85 years or more, on the 1st January of the considered year) having received the full primary vaccination course (resp. primary vaccination course and first booster) of the COVID-19 vaccine, calculated per week; <u>Denominator</u>: total adult resident population (resp. aged 65 years or more, aged 85 years or more) on the 1st January of the considered year.</p> <p>Percentage of the healthcare professionals who is vaccinated (primary course) (resp. primary course + first booster): <u>Numerator</u>: number of healthcare professionals alive and active in Belgium at the start of the vaccination campaign having received the primary schedule (resp. primary schedule and first booster) of the COVID-19 vaccine, calculated per week; <u>Denominator</u>: total number of healthcare professionals alive and active in Belgium at the start of the vaccination campaign.</p>
Rationale	<p>The rapid development and deployment of vaccines were important elements contributing to pandemic management.¹ Coverage of COVID-19 vaccination in the adult population and among specific groups (aged 65+, 85+ years, etc.) have been widely monitored using indicators such as the percentage of the population who received primary course vaccination, or primary course and booster vaccinations.² However, as time passes and a large share of the population is vaccinated, continuing to monitor these indicators appears to be less relevant. The selected main indicators (percentage of the population, and of the population aged ≥65 years, who received at least one vaccine dose in the last six months) allow a meaningful analysis both in the first stages of deployment of the vaccine as well as when a large coverage is already achieved.</p>



In Belgium, the primary course vaccination campaign started at the end of 2020 in several phases according to pre-defined priority target groups:³ (1) residents and staff of nursing homes and community care institutions, (2) healthcare professionals in hospitals and working on the front line, (3) other hospital and health service staff, (4) people aged ≥ 65 years, (5) people aged 18-64 years with specific underlying health conditions. The campaign was operationalised by the federated entities (Brussels, Flanders, Wallonia and the German-speaking community Ostbelgien), with practical implementation differences. The vaccination campaign for the overall non-elderly population (first adults, then children) started in June 2021. The first booster campaign started in September 2021 following similar priority criteria (although only people with immunocompromising conditions were in a priority group, instead of people with underlying health conditions).⁴ In December 2021, the first booster campaign extended to the overall population. A second booster campaign in Flanders started during the spring 2022 targeting persons with a weakened immune system, residents of nursing homes and persons aged 80 years or over. In the fall of 2022, the following campaign was organised. Persons aged 50 years or more, nursing home residents, healthcare professionals and persons with a weakened immune system were formally invited on a national level, while all adults were formally invited in Flanders. Booster vaccination was available on a voluntary basis for the overall adult population.

Data source Sciensano (Vaccinnet+)

Technical definitions Weekly data, from the week of 28 December 2020 to the week of 26 December 2022.
Primary vaccination course is defined as 1 vaccine dose for Janssen (Johnson & Johnson) or 2 vaccine doses for Comirnaty (Pfizer/BioNTech), Spikevax (Moderna), Vaxzevria (AstraZeneca), Nuvaxovid (Novavax) and other WHO or EMA approved vaccines.
Population data are based on the Belgian population structure on 1 January of the considered year released by Statbel.
The age of vaccinated persons is defined as their age on 1 January of the considered year and may differ from their age at the date of vaccination. This impacts the repartition of vaccinated people by age groups.
For healthcare professionals, estimates are based on the linkage between the national COVID-19 vaccine registry (Vaccinnet+) and the Common Base Registry for HealthCare Actor (CoBRHA). These data only include healthcare professionals residing in Belgium listed as alive at the start of the vaccination campaign and as active in the CoBRHA database. The active/inactive status was determined on the basis of RIZIV – INAMI numbers and data from the FPS Public Health.
Regional distribution is based on place of residence and not place of vaccination, nor place of practice for healthcare professionals. Results for Ostbelgien are presented separately and are excluded from Wallonia data.

International comparability No international comparison is available for the principal indicators.
Comparison with OECD countries is provided for primary course vaccination and first booster vaccination of adults.

Limitations The relevance of the principal indicator is highly dependent on stage of the epidemics and the type of variants that are prevalent. In particular, at the beginning of the vaccination campaign, it was advised to have a short delay between doses, in order to ensure a fast protection of the population. The first booster was advised for the whole adult population, and was mainly given during winter. Once the acute phase was passed, an annual booster, before each winter, was advised for at-risk populations.^{5, 6} Therefore, the 6-month interval is relevant to analyse during the winter, but is less relevant during summer. On the contrary, the number of persons receiving a vaccine dose during summer should be reduced, because these persons would face decreased vaccine effectiveness during the winter. In addition, vaccination is particularly advised to ensure protection against aggressive variants, and should be performed at the adequate moment to ensure it is adapted to the concerned variant. Due to that, the interpretation of the principal indicator must be nuanced, taking into account both the period of the year and the predominant type of variant.

In the analysed data, it is not possible to distinguish the type of vaccine that has been received (adapted vaccine or not).

The share of the at-risk population who received at least one COVID-19 vaccine dose is not analysed despite the fact that specific groups (immunocompromised, etc.) were targeted in early vaccination campaigns in Belgium. Interested readers are referred to Stouven et al. (2023).⁷



Regarding estimates for healthcare professionals, the CoBRHA includes healthcare professionals with a Belgian "license to practice" even if they have shifted careers to another sector. Retired professionals are not excluded from the database. In contrast, administrative staff or students working in a healthcare facility are not identifiable in the CoBRHA database. Cross-border healthcare workers vaccinated at their workplace in a neighbouring country are also not systematically included.

The measured indicators do not allow to measure vaccine effectiveness.⁸

Dimension	Resilience
Related indicators	
Reviewers	Sabine Stordeur (Taskforce Vaccination COVID-19), Joris van Loenhout (Sciensano)

1.1.2. Results

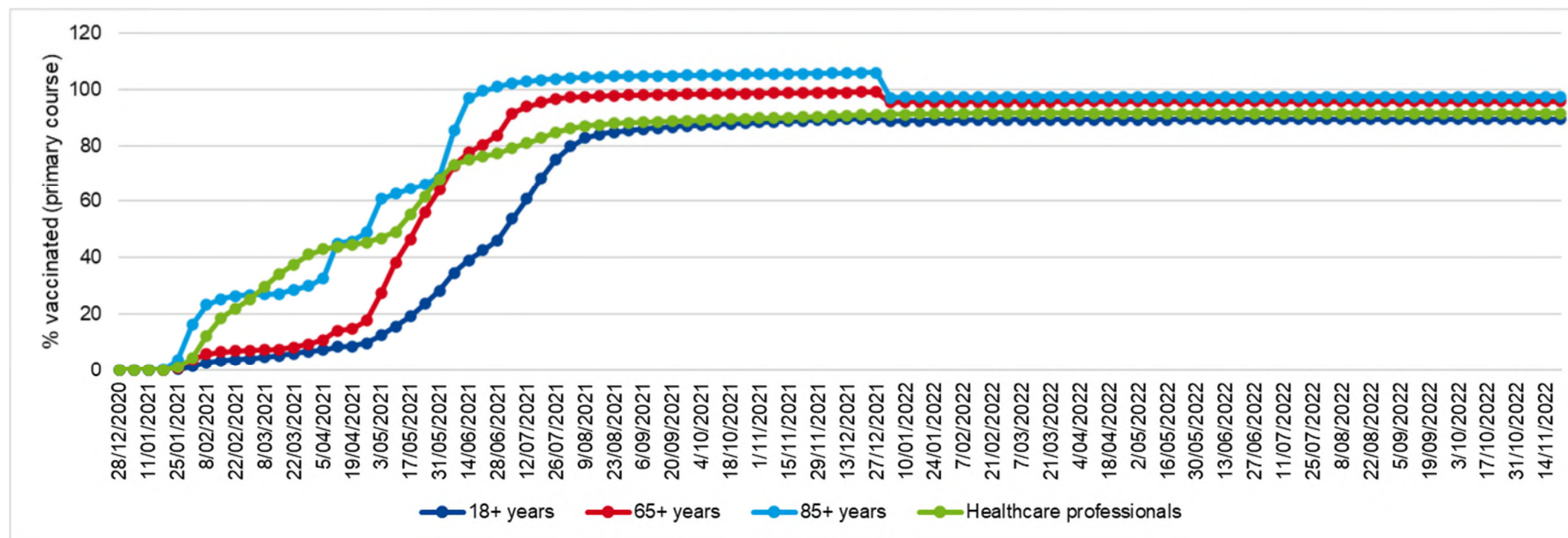
Belgium

The primary course vaccination campaign started in December 2020, focusing first on vulnerable target groups. By May 2021, 60% of the persons aged 85 years or more finished their primary course (Figure 1). From the week of 21 June 2021, virtually all (>97%) persons aged 85 years or more finished their primary course. Note that this percentage can appear to be larger than 100% due to the fact that age categories are defined by the age

on 1st January of the considered year, not by the age at the vaccination date. By June 2021, 60% of the persons aged 65 years or more were also vaccinated and in August 2021, virtually all of them (>97%) finished their primary course. At the Belgian level, 60% of the adults (aged 18 or more) finished their primary course by mid-July 2021. This share reached 88% in November 2021 and did not evolve much after that date (the maximum was 89.4%).



Figure 1 – Percentage of the population who is vaccinated (primary course)



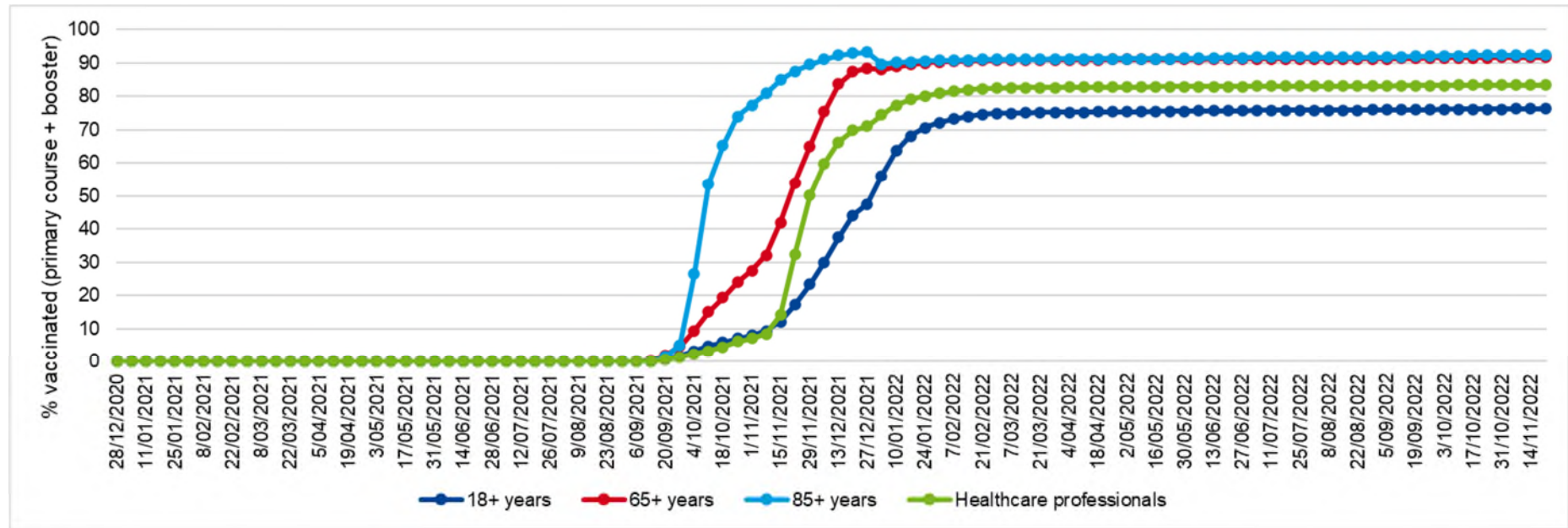
Note: a decline is observed on 1st January because of a change in the population groups. As age groups are based on the age on 1st January of the considered year, on 1st January each person in the population is considered to be one year older. In addition, people who died during the previous year are removed.

The first booster campaign started in September 2021, and the share of vaccinated persons increased faster than during the primary course campaign (Figure 2). Within 6-7 weeks (before 18 October 2021), 60% of the persons aged 85 years or more were fully vaccinated (primary course + first booster) and 90% of them were fully vaccinated within 3 months (before 6 December 2021). At the end of November 2021, more than 60% of the

persons aged 65 years or more were fully vaccinated and this share was 90% at the end of January 2022. At the Belgian level, 60% of the adults (aged 18 years or more) were vaccinated by mid-January 2022. This share reached 75% in March 2022 and did not evolve much after that date (the maximum was 76.3%)



Figure 2 – Percentage of the population who is vaccinated (primary course + first booster)



Note: a decline is observed on 1st January because of a change in the population groups. As age groups are based on the age on 1st January of the considered year, on 1st January each person in the population is considered to be one year older. In addition, people who died during the previous year are removed.

At the beginning of the vaccination campaign, the percentage of the population who received at least one COVID-19 vaccine dose in the last six months (Figure 3) was obviously equivalent to the percentage of the population who was vaccinated (Figure 1). As the delay between the start of the primary course campaign (December 2020) and the start of the booster campaign (September 2021) was longer than six months, the share of the population who received at least one dose in the last six months decreased for the group aged 85 years or more from August 2021 onwards. After the start of the booster campaign this share increased again from October 2021 onwards, to reach 90% at the end of November 2021. The same pattern was

observed for the age group 65+ years but at a later time, as they had received their primary course vaccination later: the share of the population aged 65 years or more who received at least one dose in the last six months decreased slowly from end July 2021, but more importantly from November 2021, and increased again in December 2021, to reach 88% in January 2022. Such a decrease was not as clearly observed between the two campaigns among the population aged 18 years and over, because, as a result of increased vaccine availability, there was less time in between younger and older people for the administration of the booster dose, compared to the primary course.



Six months after the start of the booster campaign (from March 2022 onwards), a sharp decrease is observed in the share of the population aged 85 years or more who received at least one dose in the last six months, reaching a minimum of 15.7% during the week of 30 May 2022. It should be noted that the decreases shown in Figure 3 occurred in a period where a less aggressive variant (Omicron) was dominant (see Table 1) and treatments against COVID-19 were increasingly available.

Due to the second and third booster campaigns, this share increased later on, but stayed largely below its previous level (a maximum of 70% was reached in November 2022).

The same evolution is observed for the age groups 65+ and 18+ years, with a delay in time. During the week of 5 September 2002, 16.3% of the persons aged 65 years or more, and 5.7% of the adults had received a vaccine dose in the last six months. These shares increased later on, but stayed largely below their previous levels (with a maximum of 68.1% for the 65+ age group and 38.0% for the 18+ age group).

Figure 3 – Percentage of the population (aged 18+, 65+, 85+ years) who received at least one COVID-19 vaccine dose in the last six months, Belgium

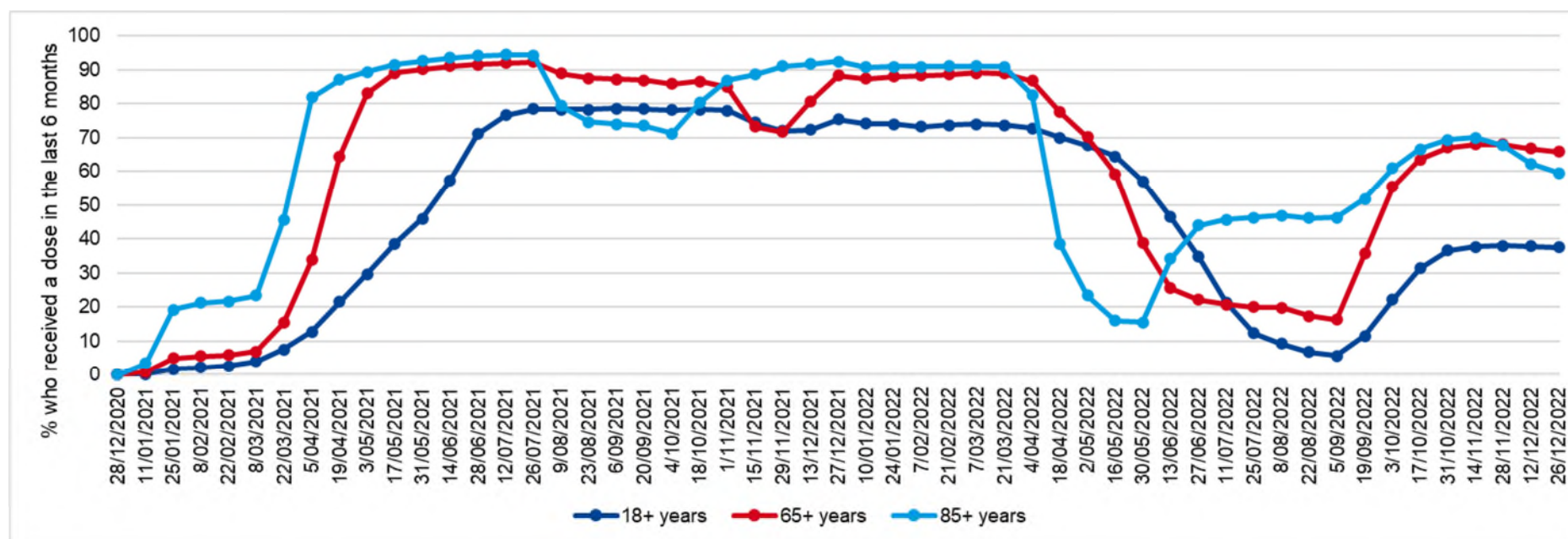




Table 1 – Predominant COVID-19 variant in Belgium, February 2021 – February 2023

Period	Predominant variant
15 February 2021 – 28 June 2021	Alpha (B.1.1.7)
29 June 2021 – 30 December 2021	Delta (B.1.617.2)
31 December 2021 – 3 March 2022	Omicron (B.1.1.529)
4 March 2021 – 15 June 2022	Omicron BA.2 (B.1.1.529.2 or BA.2)
16 June 2022 – 7 November 2022	Omicron BA.5/BF (B.1.1.529.5 or BA.5 or B.1.1.529.5.2.1 or BA.5.2.1)
8 November 2022 – 23 February 2023	Omicron BQ (B.1.1.529.5.3.1.1.1.1 or BA.5.3.1.1.1.1 or BE.1.1.1)

Predominant variant is defined as the most identified variant (14-day forward moving average) in a sequence of 400-500 positive samples diagnosed in Belgium per week. Source: Sciensano.

Regional comparison

Figure 4 and Figure 5 show that the percentage of the population, aged 18+ and 65+ years respectively, who received at least one COVID-19 vaccine dose in the last six months followed a similar evolution in all regions of the country. However, these shares were almost always the lowest in Brussels and the largest in Flanders. The maximum reached in Flanders for adults (Figure 4) was 83.8%, compared to 78.7% at the national level, 73.0% in Wallonia, 70.1% in Ostbelgien and 62.2% in Brussels. For the group aged 65 years or more (Figure 5), the maxima were 95.5% in Flanders, 92.3% at

the national level, 88.0% in Ostbelgien, 87.8% in Wallonia and 78.6% in Brussels.

The difference between regions was stronger from September 2022 onwards, showing a better success of the second and third booster campaigns in Flanders than in the other regions. At the end of 2022, the share of the adult population who had received at least one dose in the last six months (Figure 4) was 48.6% in Flanders, 37.6% at the national level, 23.6% in Wallonia, 21.9% on Ostbelgien and 17.0% in Brussels. For the age group 65+ years (Figure 5), the shares were 73.8% in Flanders, 65.8% at the national level, 54.5% in Wallonia, 45.8% in Brussels and 41.3% in Ostbelgien.

For the age group 85+ years (Figure 6), the share of the population who received at least one vaccine dose in the last six months also followed a similar evolution in all regions of the country during the primary course and booster campaigns. Also for this group, the share was almost always the highest in Flanders. From June 2022 however, strong regional differences appeared. In Flanders, the percentage of the population aged 85 years or more who received at least one vaccine dose in the last six months rapidly increased during the second booster campaign, to reach 70% in August 2022. During the same period, this percentage was only 5.5% in Wallonia, 10.3% in Brussels and 25.4% in Ostbelgien. The increase occurred later (around September 2022) in other parts of the country. At the end of the year 2022, the percentage of the population aged 85 or more who received at least one vaccine dose in the last six months was almost similar in all regions (ranging between 53.2% and 61.7%) except in Ostbelgien (36.8%).



Figure 4 – Percentage of the population aged 18+ years who received at least one COVID-19 vaccine dose in the last six months, Belgium and regions

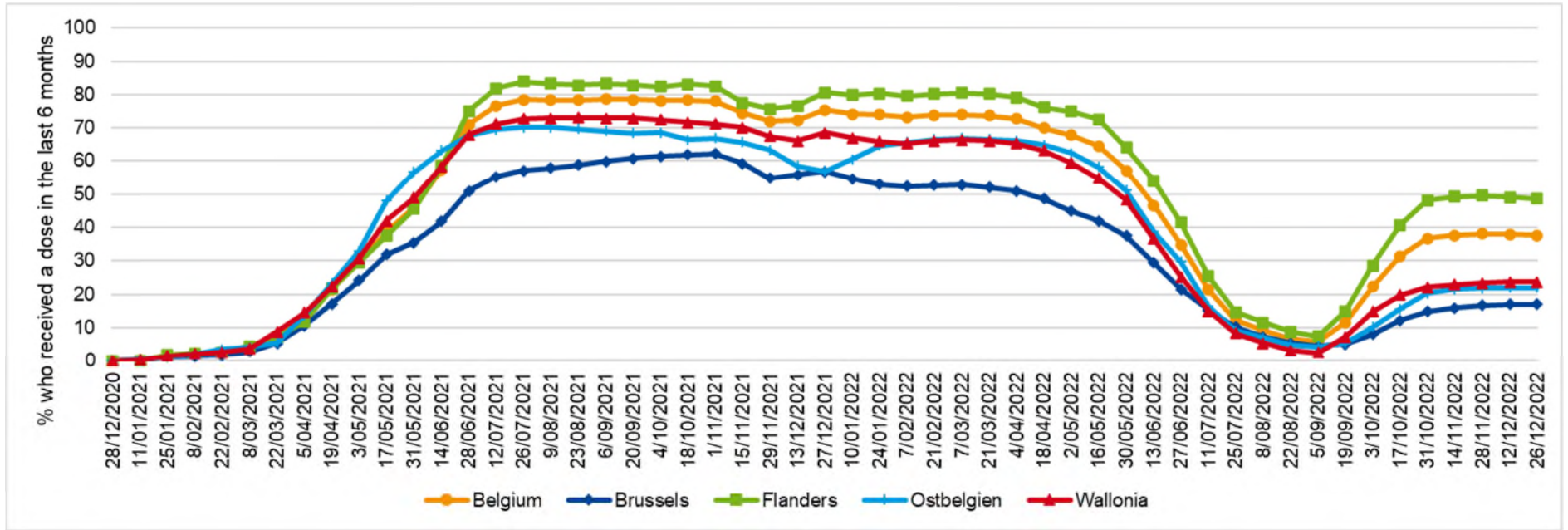
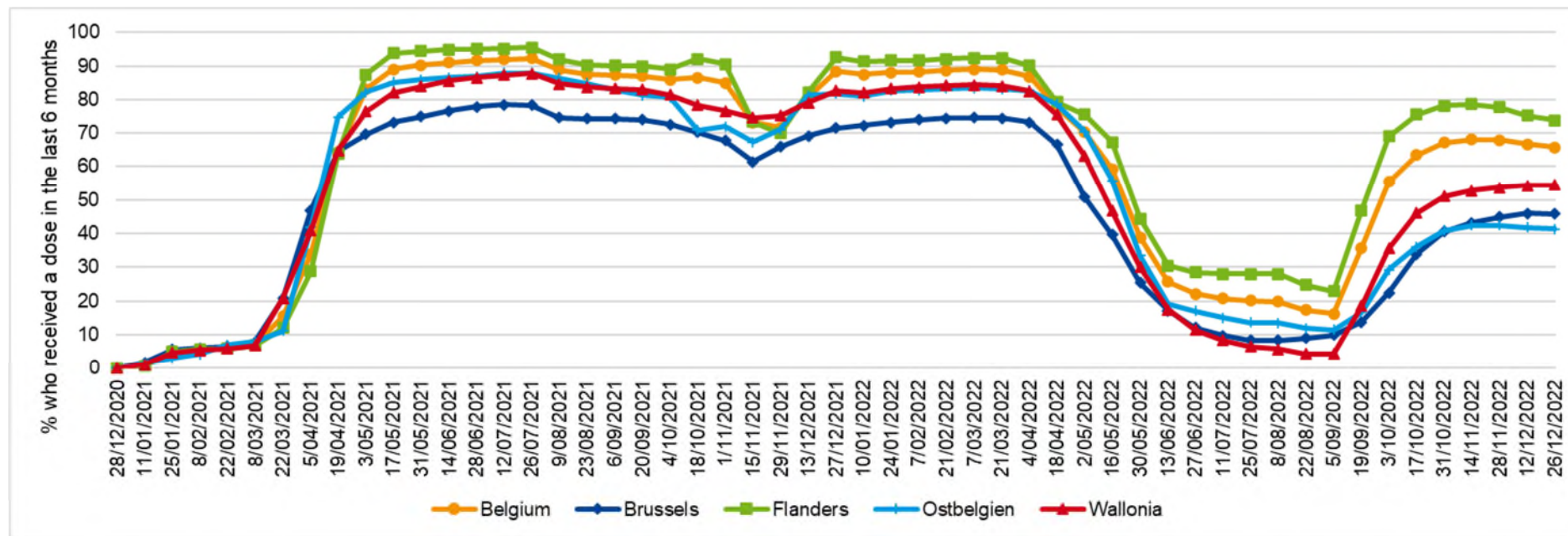
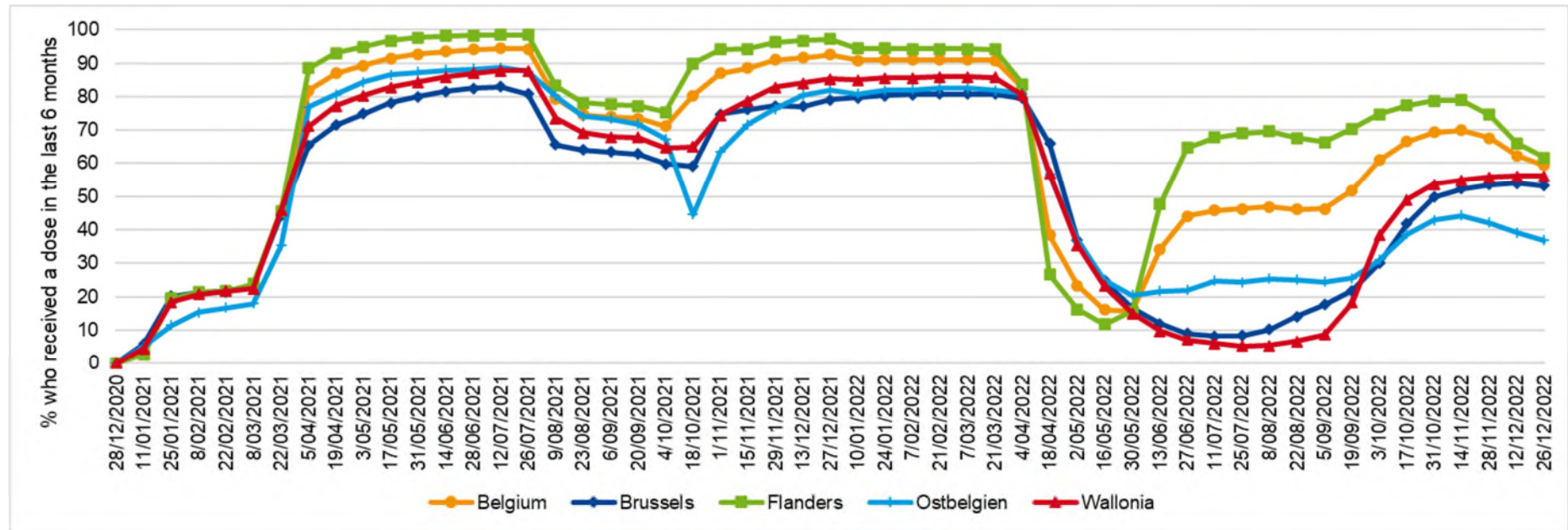




Figure 5 – Percentage of the population aged 65+ years who received at least one COVID-19 vaccine dose in the last six months, Belgium and regions



**Figure 6 – Percentage of the population aged 85+ years who received at least one COVID-19 vaccine dose in the last six months, Belgium and regions**

Healthcare professionals

Figure 1 and Figure 2 also show the percentage of healthcare professionals who were vaccinated (primary course or primary course + booster respectively) at the national level. As groups of healthcare professions were targeted in priority early in the primary course campaign, the percentage of vaccinated healthcare professionals increased steadily from January 2021 onwards. By the end of May 2021, 60% of them were vaccinated and this proportion was 90% mid-November 2021 (and reached 91.5%). Regarding the first booster campaign, most healthcare professionals were vaccinated between mid-November 2021 and mid-December 2021 (where the proportion of healthcare professionals fully vaccinated increased from 8.5% to 66.4%). The share of healthcare professionals vaccinated with primary

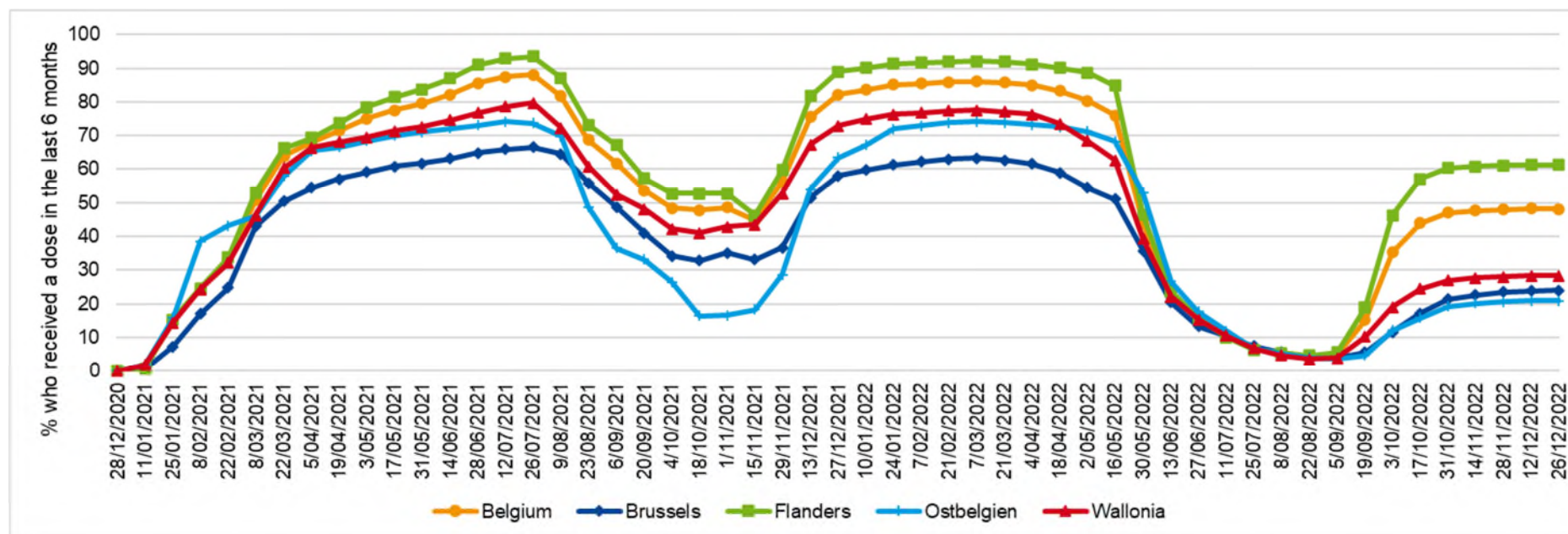
course and a first booster reached a maximum of 83.4% (compared to 76.3% for the adult population in general).

Figure 7 shows the share of healthcare professionals who received at least one COVID-19 vaccine dose in the last six months in Belgium and in the different regions. Overall, the evolution over time was similar in all regions but systematic differences appeared in the proportion. The percentage of healthcare professionals who received at least one dose in the last six months was most of the time the highest in Flanders. There, it reached 93.5%, compared to a maximum of 79.7% in Wallonia, 74.2% in Ostbelgien and 66.6% in Brussels (88.1% at the national level). The regional differences were also more marked after September 2022. At the end of the year 2022, 61.3 % of healthcare professionals in Flanders had received at least one



dose in the last six months, while this proportion was only 28.4% in Wallonia, 24.0% in Brussels and 21.0% in Ostbelgien (48.2% at the national level).

Figure 7 – Percentage of the healthcare professionals who received at least one COVID-19 vaccine dose in the last six months, Belgium and regions



International comparison

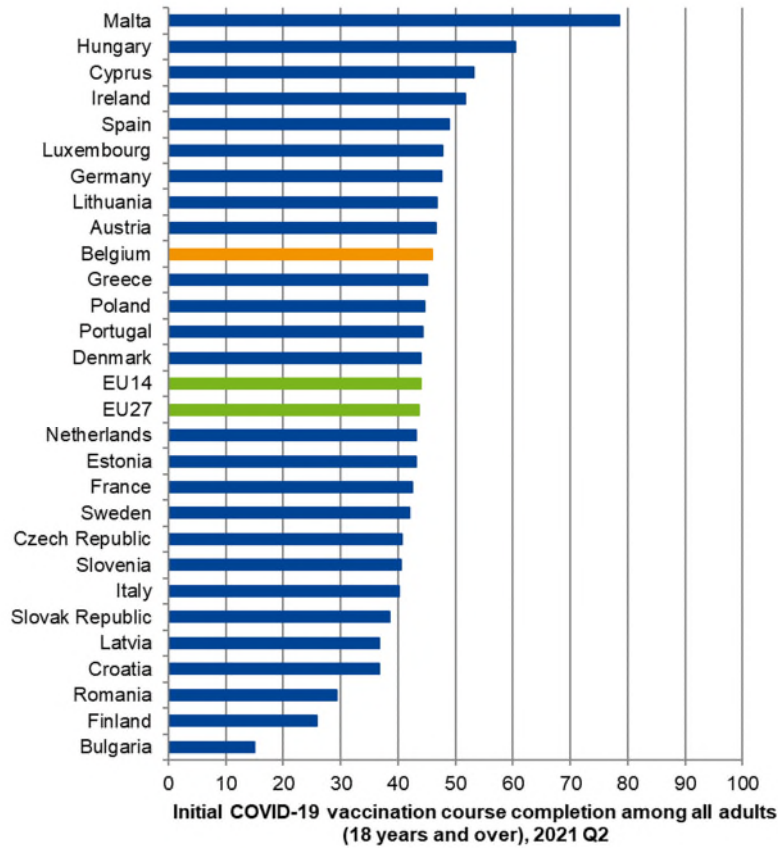
In mid-2021, EU-27 countries had vaccinated (primary course) an (unweighted) average of 43.7% of the population aged 18 years or more (see Figure 8). The (unweighted) average among EU-14 countries was 44.0%. Belgium completion rate (45.9%) was close to the EU-27 and EU-14 averages. The share of vaccinated adults increased in all countries during the second half of 2021 so that, by the end of 2021, in EU-27 countries an (unweighted) average of 77.0% of the population aged 18 years or more

was vaccinated (primary course), but with large differences between countries (see Figure 9). The (unweighted) average among EU-14 countries was 88.5%. Belgium achieved one of the highest completion rates (89.2%). Also, based on survey data, Belgium showed higher acceptance of COVID-19 vaccines than the EU-27 average.⁹

Figure 10 shows the percentage of adults who received the first booster vaccination in EU countries (data of 16 June 2023). This percentage reached 76.7% in Belgium, which is above the average in the EU-27 countries (65.4%) and in the EU-14 countries (73.1%).

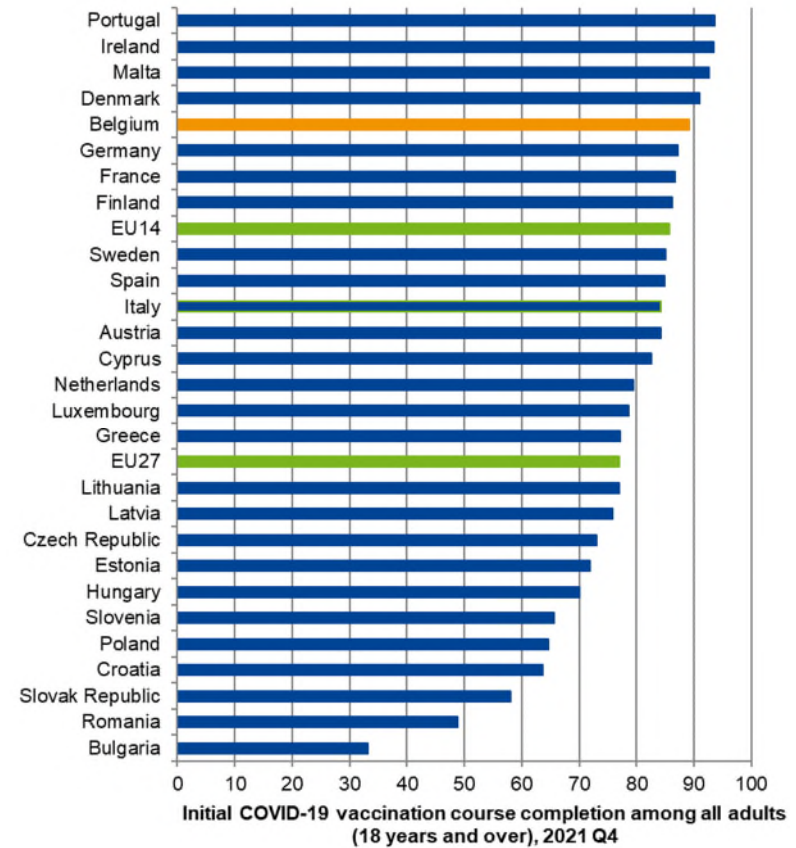


Figure 8 – Primary COVID-19 vaccination course completion among all adults (18+ years) in EU countries, 2021 Q2



Source: OECD/EU (2022)¹

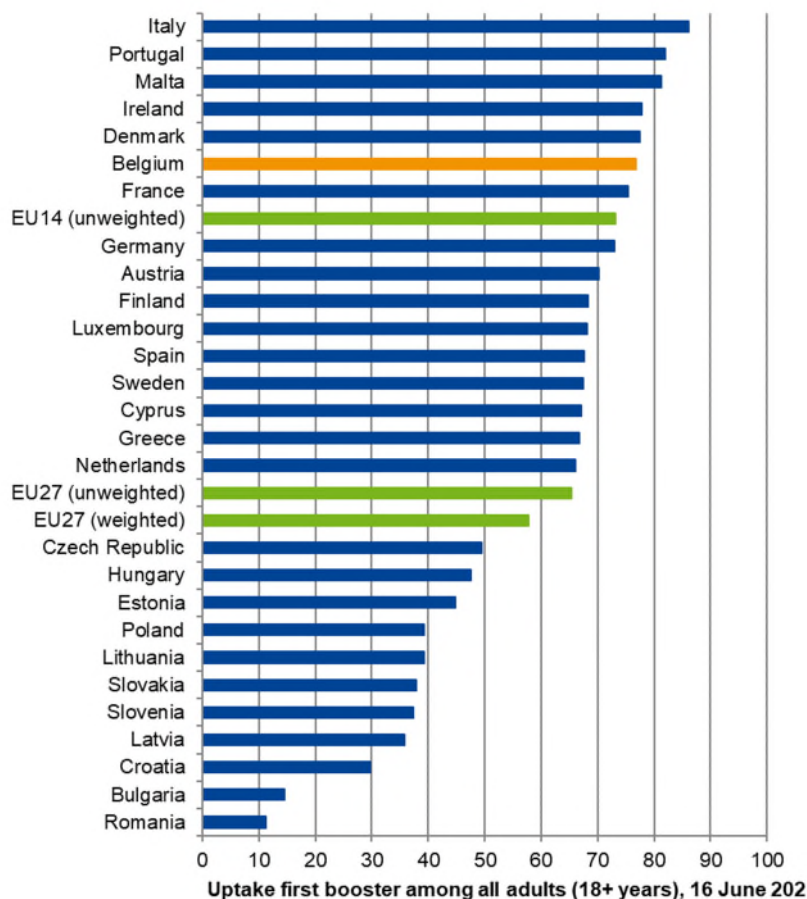
Figure 9 – Primary COVID-19 vaccination course completion among all adults (18+ years) in EU countries, 2021 Q4



Source: OECD/EU (2022)¹



Figure 10 – Uptake first booster among all adults (18+ years) in EU countries, 16 June 2023



Source: ECDC (2023)¹⁰

Key points

- In Belgium, the overall majority (>97%) of persons aged 85 years or more and aged 65 years or more were vaccinated with primary course vaccination. The share reached 89.3% for the overall adult population (aged 18 years or more).
- The share of vaccinated adults (primary course) in Belgium was above the average in the EU-27 countries (77.0%) and in the EU-14 countries (88.5%).
- In Belgium, more than 90% of the persons aged 85 years or more and aged 65 years or more were vaccinated with primary course and first booster. The share reached 76.3% for the adult population. This was above the average in the EU-27 countries (65.4%) and in the EU-14 countries (73.1%).
- After the first booster campaign a decrease was observed in the share of the population who received at least one dose in the last six months. Owing the second and third booster campaigns, this share increased later on, but stayed largely below its previous level (a maximum of 70.1% was reached for the age group 85+ years, 68.1% for the age group 65+ years and 38.0% for the adult population).
- The second and third booster campaigns showed better success in Flanders than in the other regions, so that the proportion of the population who received at least one dose in the last six months increased more in Flanders than in the other regions. Also, for the age group 85+ years, it increased sooner in Flanders than in the other regions, due to an earlier second booster campaign organised in Flanders for the population aged 80 years and over.
- At the end of 2022, 37.6% of the adults (18 years or more) in Belgium had received at least one dose in the last six months. This proportion was 48.6% in Flanders, 23.6% in Wallonia, 21.9% in Ostbelgien and 17.0% in Brussels.



- At the end of 2022, 65.8% of the persons aged 65 years or more in Belgium had received at least one dose in the last six months. This proportion was 73.8% in Flanders, 54.5% in Wallonia, 45.8% in Brussels and 41.3% in Ostbelgien.
- Healthcare professionals were targeted in priority in the vaccination campaign, so that by the end of May 2021, 60% of them were vaccinated and this proportion was 90% during mid-November 2021 (and reached a maximum of 91.5%). The share of healthcare professionals vaccinated with primary course and a first booster reached a maximum of 83.4% (compared to 76.3% for the adult population in general).
- At the end of 2022, 48.2% of healthcare professionals in Belgium had received at least one dose in the last six months. This proportion was 61.3% in Flanders, 28.4% in Wallonia, 24.0% in Brussels and 21.0% in Ostbelgien.

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