Medical practice variations

Diagnostic cystoscopy

Analysis of the distribution of medical practice in Belgium, in terms of volume and expenditure per patient and per insured (distribution, occurrence, trends by region, province and district), for the year **2023**

NIHDI – Healthcare Service – Directorate for Research, Development and Quality promotion

Appropriate care unit

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1. INTRODUCTION

The Appropriate Care Unit was set up within the NIHDI's Directorate for Research, Development and Quality under NIHDI's Administration Contract for 2016-2018[1]. Article 35 of this contract refers to 'the setting up of an Appropriate Care Unit, aiming specifically to promote an integrated approach to the rational use of resources'. The Appropriate Care Unit has been up and running since the second quarter of 2017.

The tasks of the Unit were set out formally in the '2016-2017 Healthcare monitoring Action plan', published by NIHDI on 18 July 2016[1]. This plan lists around thirty measures designed to make healthcare provision more efficient, by encouraging appropriate practice and tackling unnecessary or inappropriate care.

The plan states that one of the tasks of the Appropriate Care Unit is to analyse the 'appropriateness of care', in order to identify unexplained variations in consumption patterns, identified after standardisation. Such variations can potentially point to non-optimal use of resources.

'Variations in medical practice' documents report on the analyses carried out in this framework. Each report focuses on a particular topic.

In this document, we present the figures and graphs relating to analyses[2] of practice in the area of Diagnostic cystoscopy, and give the explanations necessary to understand these.

We have deliberately chosen not to attempt to interpret the figures, preferring to present the results to experts who are in a better position to do so. This document has nevertheless been made available to the public in order to provide objective, open input to discussions on this issue.

[1] (Institut national d'assurance maladie-invalidité, 2016)

[2] Readers interested in the methodology used in these quantitative analyses should consult the document entitled 'Variations in practice – Methodology'.

2. SPECIFIC METHOD OF ANALYSIS

A. NIHDI nomenclature codes selected for analysis

The NIHDI nomenclature codes selected for the analysis are listed below:

Outpatient	Inpatient	Rates	Expenses	Label	Creation	Deletion	Group N	Value
260271	**260282**	yes	yes	Cystoscopie avec ou sans prélèvement biopsique chez l'homme	01-04-1985		N30	K40
260330	**260341**	yes	yes	Cystoscopie avec ou sans prélèvement biopsique, chez la femme	01-04-1985		N30	K35
431152	**431163**	yes	yes	Cystoscopie, avec ou sans prélèvement biopsique, chez la femme	01-04-1985		N11	K35

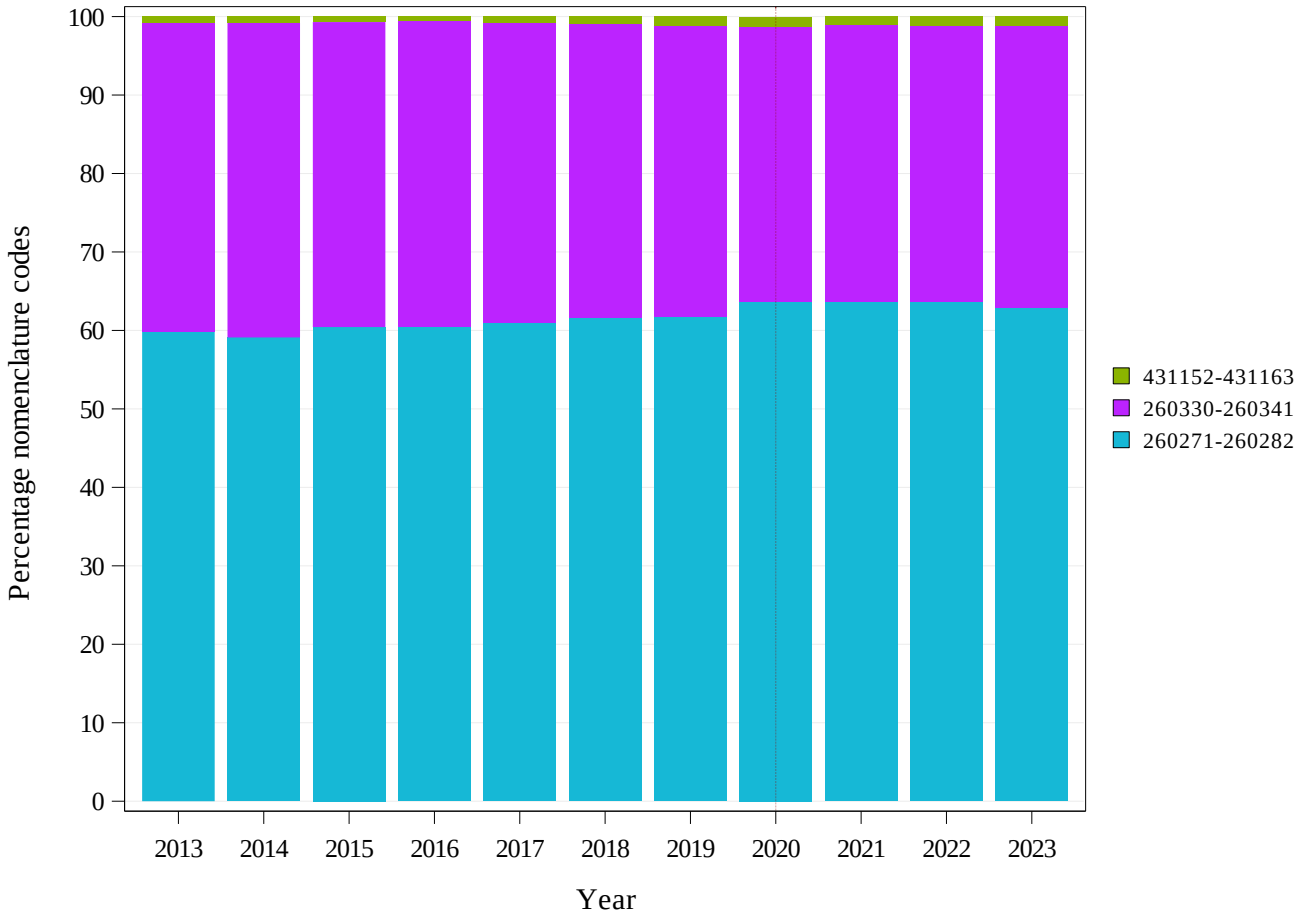
This table shows the NIHDI nomenclature codes selected for this analysis, stating whether or not they were included in the analyses of services and expenditure, and giving, for each one, a description, dates of creation and deletion, where appropriate, their N group (in the NIHDI nomenclature) and their value.

B. Past history of nomenclature codes

[No modification implemented during the period]

This table displays the historic evolution of the definitions of the NIHDI-nomenclature codes taken into account for this analysis, if modifications were implemented during the period 2013-2023.

C. Trends in the breakdown of nomenclature codes provided, by volume



See page 4 for details about the NIHDI nomenclature codes selected for analysis.
Note : The year 2020 was highlighted by a vertical dashed line, in order to draw the attention on the impact of the COVID-19 crisis.

D. Source of data and analysis period

The data used in the analyses have been taken from the following databases:

Document N	for the utilisation rate and amount of expenses of insured persons (who meet the selection criteria) whose age, sex, preferential regime and residence are known 2013-2023
Document P	for the utilisation rate and amount of expenses of insured persons (who meet the selection criteria) by type of medical specialities in 2023
Document P, SHA, ADH	for the practice occurrences and analysis of patient care settings (private ambulatory or polyclinic, day or inpatient hospitalisation) in 2022
-	-

Analysis period	2013-2023

'N Documents' are monthly data sent by the sickness funds to NIHDI, within three months. These data show the number of services provided, dates and the fees involved. Every six months, these data are compiled by the insurers, which also add data on patients: age, gender, social category and district of residence. N Documents, however, cannot be used to analyse the combinations of services received by individual patients.

'P Documents' are six-monthly data sent by the sickness funds to NIHDI, within four months. These data show the services provided, the service-provider, the prescriber, the place of provision of service, and the hospital where patients were treated. P Documents can be used to monitor medical consumption and pricing, but not (yet) to analyse services per patient.

'Documents SHA, ADH' are sent annually and within six months by the insurer-organisations to the NIHDI. They include all the services provided respectively in day admission and standard hospitalisation, in general hospitals per hospital stay.

Occurrence: Occurrence values are based on the most recent year that allows consolidation by patient between P and SHA-ADH documents, usually the year preceding the last year of the analysis period.

E. Specific selection criteria

Several filters may have been applied to the data, so that only one section of the population is considered in the analyses. If so, the filters used are shown in the table below:

FILTERS APPLIED TO DATA	
Sex	women and men
Age	all
-	-

The indicators presented in the analysis always refer to this population.

F. Specialisation of healthcare providers

Specialisation of the provider	Total providers	Concerned providers	% Providers	Median of H.C. services	Q3 of H.C. services	% Total H.C. services
Urology	461	425	92%	247	389	98,78%
Other specialities	6.905	107	2%	1	3	1,22%
Total	7.366	532	7%	185	352	100,00%

This table shows the following non-standardised data, by medical specialities (figures for the year 2023):

- The number of service-providers per specialisation who have recorded at least one service (the figures are exceptionally extrapolated from a single semester if an * is indicated in the header, otherwise the full year is taken into account);
- The number of service-providers recording services under the nomenclature codes selected for this analysis;
- The service-providers for these codes as a percentage of the total number of service-providers recording provision of at least one service;
- The median number and third quartile of services per service-provider (recording provision under these codes);
- The service percentage, i.e. the number of services recorded for this specialisation as a percentage of total services provided.

G. Specialisation of prescribers

[Specialisation of prescribers unknown or not applicable]

This table shows, in order, the following non-standardised data per specialities (figures for the year 2023):

- The number of prescribers who have prescribed at least one service (the figures are exceptionally extrapolated from a single semester if an * is indicated in the header, otherwise the full year is taken into account);
- The number of prescribers prescribing the nomenclature codes selected for this analysis;
- The prescribers prescribing these codes as a percentage of the number of prescribers prescribing at least one service;
- The median number and third quartile of services per prescriber (prescribing these codes);
- The percentage of services prescribed, i.e. the number of prescriptions issued for this specialisation as a percentage of total services prescribed.

H. (Estimated) number of patients per year

Sometimes several codes (similar or different) relating to the same practice are charged several times on the same day and/or in the same year for the same patient.

To estimate the number of patients treated, the total number of services accounted for per year is divided by an average division factor (total average occurrence).

In this analysis, the average division factor is 1,26. The latter is calculated based on 2022 and results from dividing the total number of services provided by the total number of different insured persons who have used these services (by age group, sex and district).

This average division factor is called the total average occurrence. This total average occurrence is the product of the average occurrence per patient per day (**average number of services per day per patient**) and the average occurrence per patient per year (**average number of days per year per patient**). Explanations of these average occurrences per day and per year can be found in the appendix 'Frequency of practice occurrences (per patient)'.

However, volumes are not divided for the data on providers and prescribers (see pages 6, 9-10), nor for the graphs and tables showing the distribution of volumes and occurrences of the practice (see pages 18-19 and Annexes B to D).

I. Standardisation

Data presented by geographical subset* or population category are standardised per year, based on age (by year), sex and preferential regime of the national population in 2023.

Note: Districts with fewer than 100 000 insured persons are associated with a neighbouring district from the same province. The following districts are therefore considered together: Oostende/Veurne, Ieper/Diksmuide, Roeselare/Tielt, Gent/Eeklo, Charleroi/Thuin, Huy/Waremme, Namur/Philippeville, Neufchâteau/Marche-en-Famenne, Virton/Bastogne/Arlon. These regroupings and labels apply to all measurements, maps and graphs produced by district. Throughout the document, the concept of regrouped district is reflected in the use of the term "district"

Standardisation renders populations comparable in relation to one or several criteria. If a difference is observed between these populations, we can therefore assume that it is not due to the criteria covered by the standardisation process.

3. RESULTS

A. National standardised usage rate

	TOTAL
Number of services per year	*115.049*
Average occurrence per patient per day (average number of services per day)	1,00
Average occurrence per patient per year (average number of days per year)	1,26
Total average occurrence (divides the number of services)	1,26
Estimated number of patients per year	*91.323*
Standardised usage rate per 100 000 insured persons	793

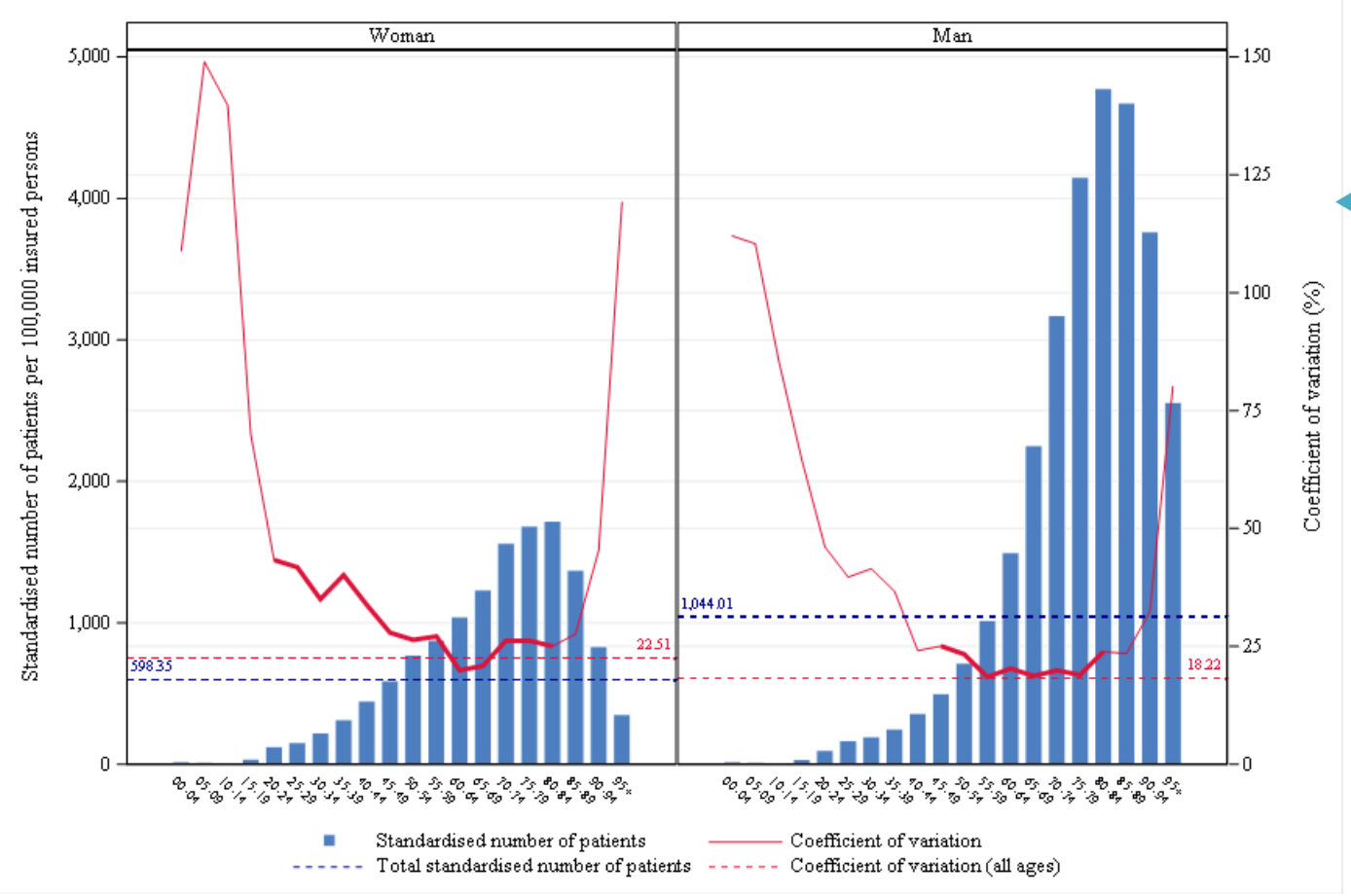
B. Standardised usage rate by sex and age

	TOTAL
Estimated number of patients per year	*91.323*
Median age (years)	69
Mean age (years)	66,54
Max/Min Ratio of the median age (by district*)	1,09
Standardised usage rate: women (per 100 000)	598
Standardised usage rate: men (per 100 000)	1.044
Ratio women/men	0,57
Percentage of women	39,85%

Max/Min Ratio:

The max/min ratio measures the dispersion of values. It is calculated as the ratio of the maximum value found for the variable, in all districts*, to the minimum value, excluding outliers. If this minimum value is equal to zero, the max/min ratio cannot be calculated, and is reported as 'NA' ('not applicable').

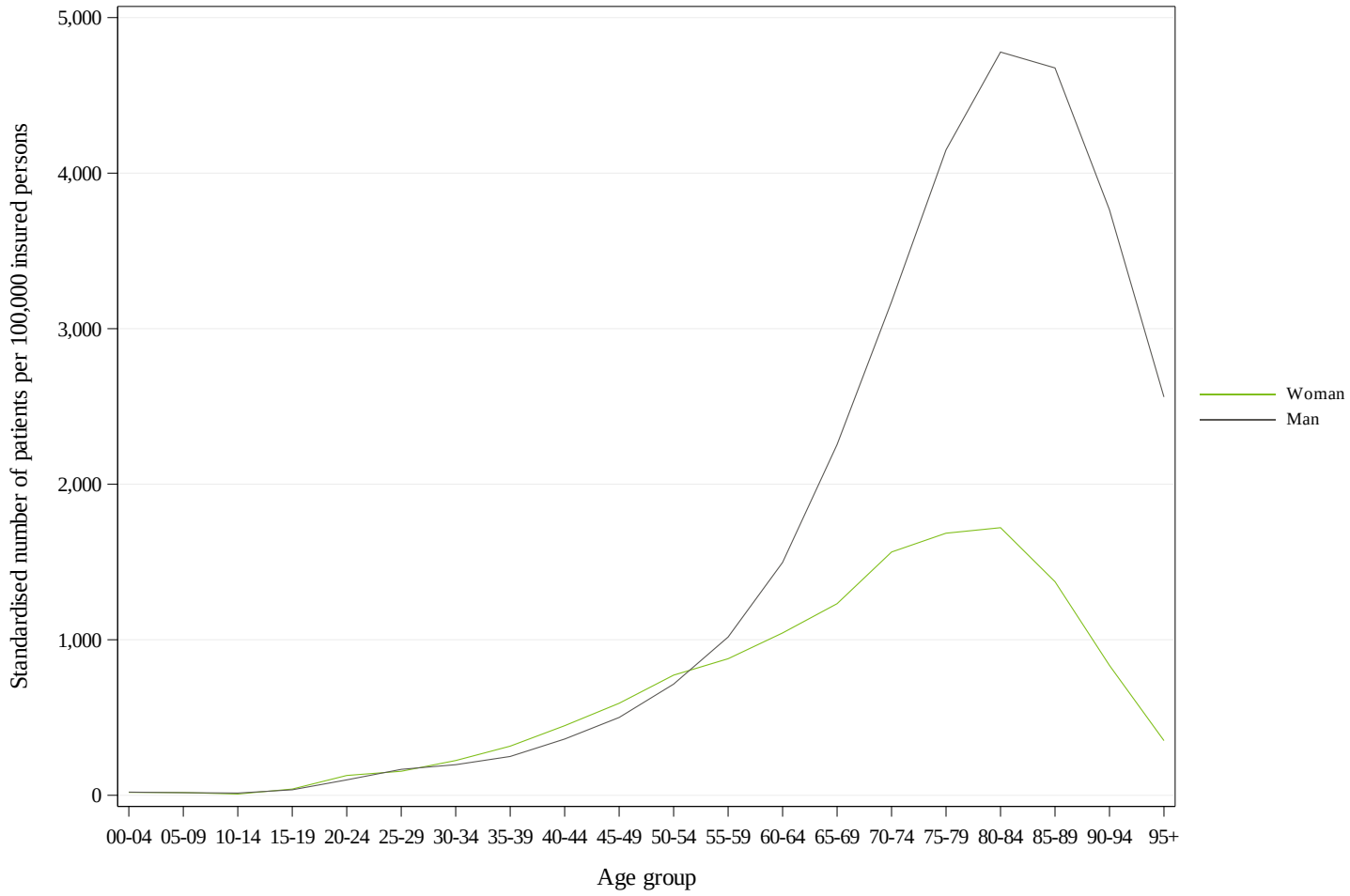
* Some districts are grouped together, see page 12, Standardisation



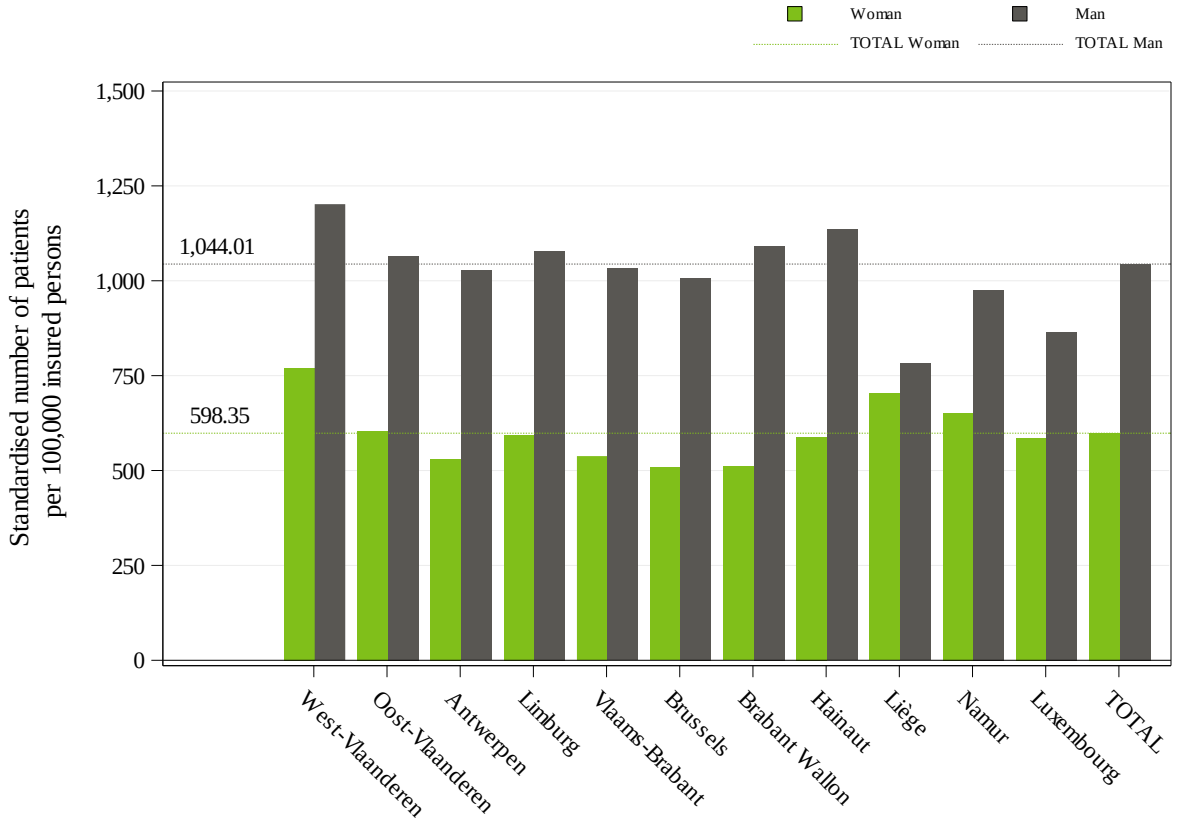
Standardised usage rate per 100 000 insured persons, and coefficient of variation for the districts*, by age group and sex, for the year 2023

This figure is made up of bar charts for each sex. The **coefficient of variation**, shown by the red line, measures the relative dispersion of the standardised usage rates observed for each district*, by age group and sex (standard deviation divided by the mean). This line is shown in bold for age groups where the coefficient of variation can be validly interpreted (i.e. for age groups in which there are sufficient insured persons per district* to allow for a proper comparison).

The left-hand vertical axis of the graph represents the standardised usage rate, and the right-hand axis the coefficient of variation. The horizontal axis shows the age groups. The horizontal dotted lines show the total values of the standardised usage rates (in blue) and of the coefficient of variation (in red).



Comparison of the standardised usage rates by age group and by sex (per 100 000 insured persons) in 2023

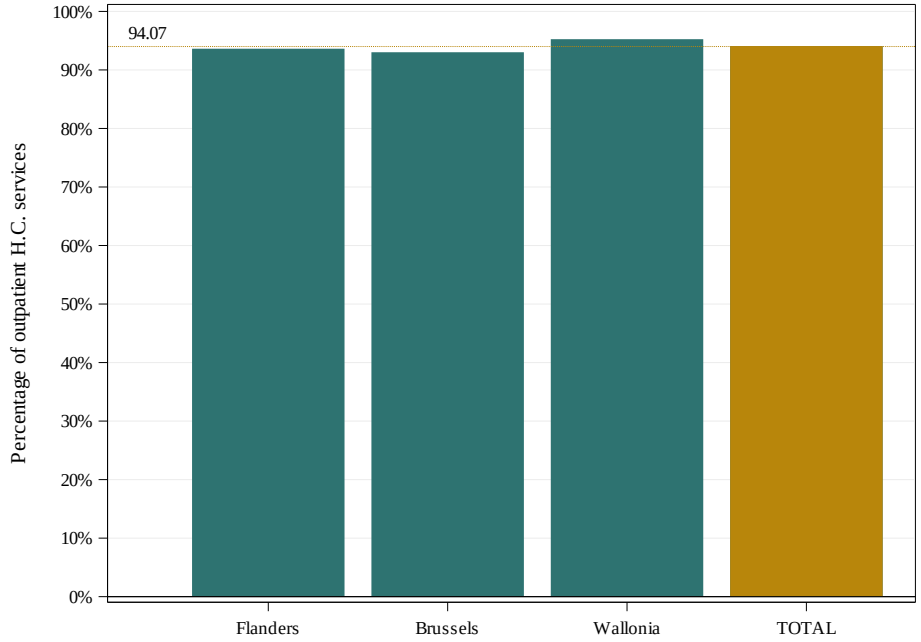


Standardised usage rate per 100 000 insured persons, by sex and by province for the year 2023

This histogram shows standardised usage rates by province and by sex. The grey bars show the rates for men, while the green bars show the rates for women, for each province. The grey and green broken lines show the total standardised usage rates, again grey for men, green for women.

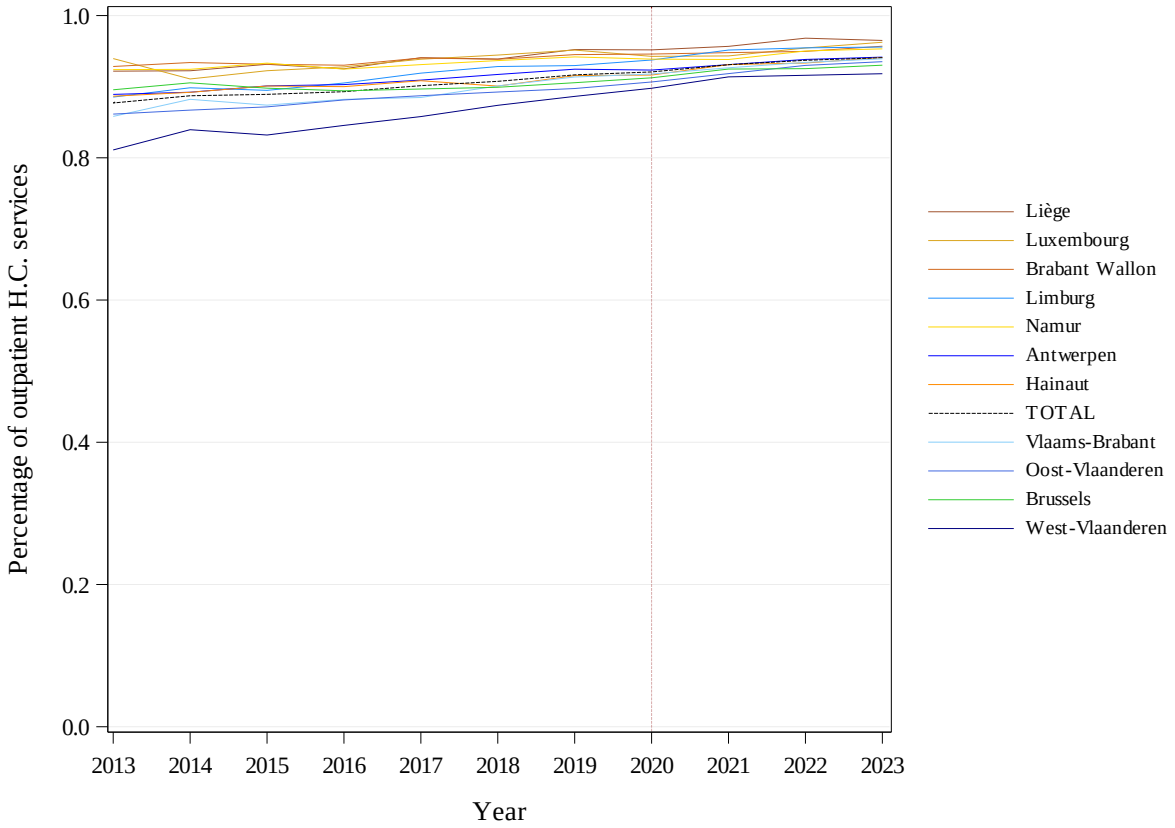
C. Rate of outpatient care

	TOTAL
Number of services per year	*115.049*
Percentage of out-patient care	94,07%
Max/min ratio of out-patient care percentage (by district*)	1,08



Percentage of outpatient care, total and by region

This graph shows the percentage of outpatient services (including hospital day admissions), i.e. the number of outpatient services provided as a percentage of total services (outpatient and hospital stays). Besides the bar per region, there is a bar for the entire Belgian population. A dotted line also shows this overall ratio.



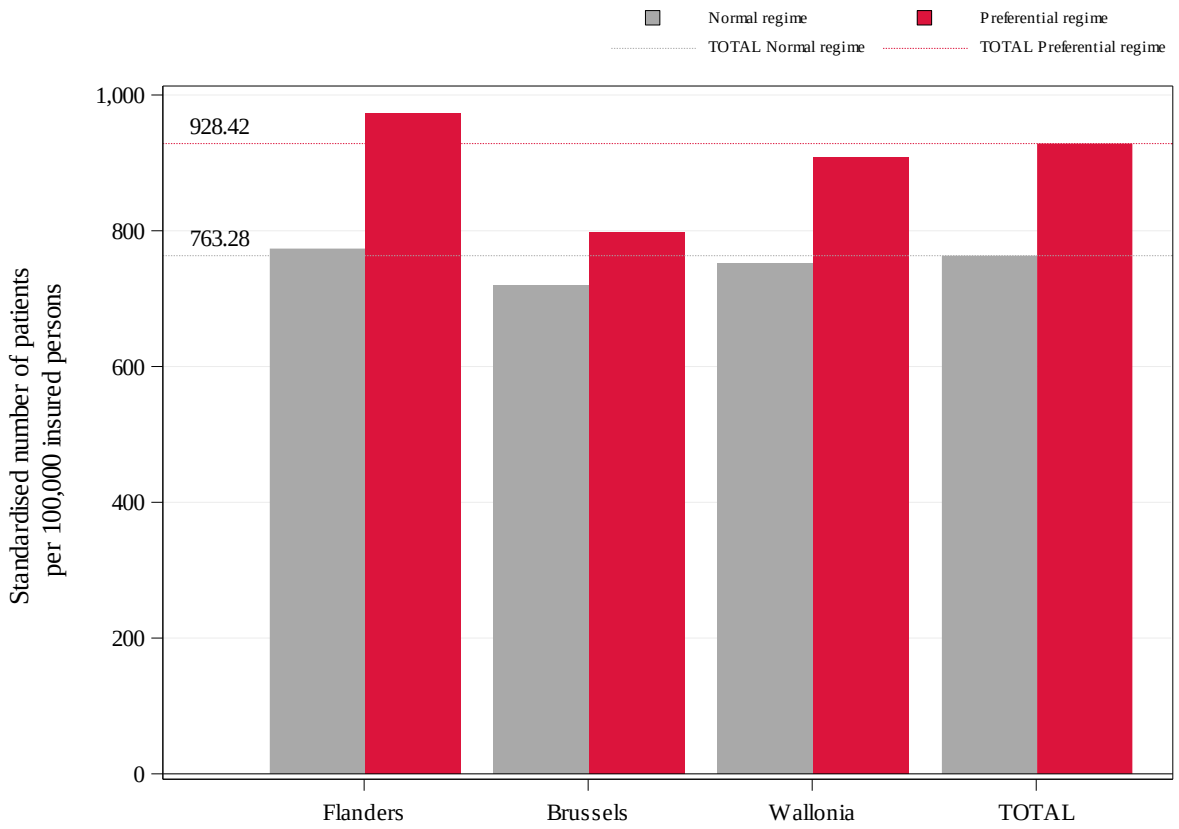
Trends in the percentage of outpatient care by province

N.B.:

- The year 2020 was highlighted by a vertical dashed line, in order to draw the attention on the impact of the COVID-19 crisis
- A complementary document to this chapter, about the patient care per type, is enclosed in this report (see Annex C)

D. Standardised usage rate by reimbursement scheme

	TOTAL
Estimated number of patients per year	*91.323*
Percentage provided under the preferential reimbursement scheme	24,55%
Standardised usage rate with preferential reimbursement scheme (per 100 000)	928
Standardised usage rate without preferential reimbursement scheme (per 100 000)	763
Ratio Preferential scheme /General scheme	1,22



Standardised usage rate by reimbursement scheme and by region

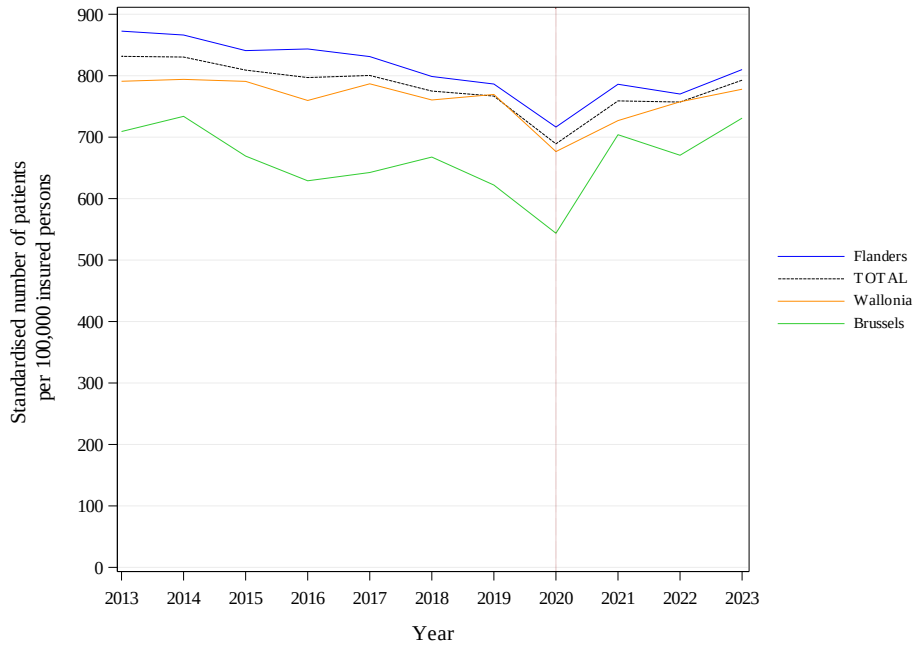
This graph shows the standardised usage rates per 100000 insured with (in red) and without (in grey) the preferential reimbursement scheme, by region and in total. The red and grey dotted lines show the overall standardised rates of use of patients per 100 000 insured, with and without the preferential reimbursement scheme, respectively.

E. Trends in standardised usage rates

	TOTAL	Statistical significance
Estimated number of patients per year	***91.323***	
Trend (2013-2023)	**-0,48%**	**NS (-0,51%)**
Trend (2013-2021)	-1,13%	***
Trend (2021-2023)	2,19%	

These trends correspond to the average annual growth rate.

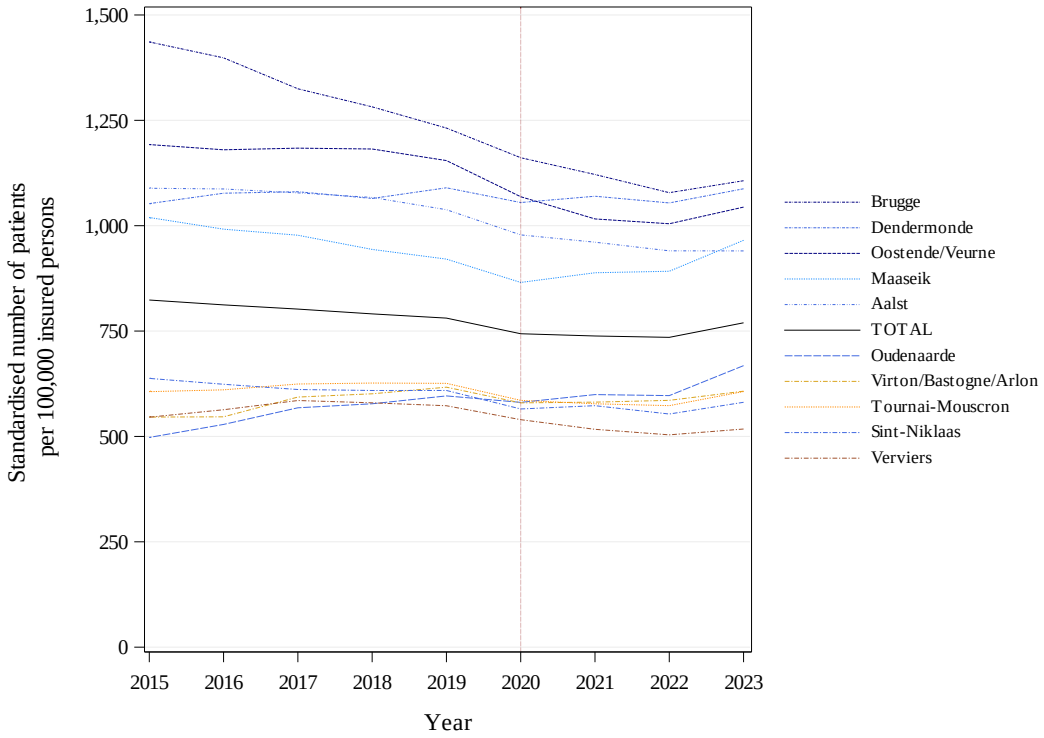
A non-significant statistical test indicates that the trend estimated by the model (in brackets) is stable, or that there is no break in the trend



Trends in the standardised usage rate per 100 000 insured persons, by region

This graph shows a coloured curve for each region and a black curve for the entire Belgian population. The x-axis shows the years, and the y-axis shows the standardised usage rate per 100 000 insured persons.

Note : The year 2020 was highlighted by a vertical dashed line, in order to draw the attention on the impact of the COVID-19 crisis.



Trends in the standardised usage rate per 100 000 insured persons by district*

This graph shows a colored line for each district* and a black line for the entire Belgian population. The x-axis shows the years, and the y-axis shows the standardised usage rate per 100 000 insured persons.

To better highlight changes over time, the rates shown are **rolling averages** of the rates for the three years preceding the year in question (including the year itself).

The graph only shows the five districts* with the highest average rates and the five districts* with the lowest average rates over the last 3 years studied (excluding the districts of Hainaut heavily impacted by the 2019 administrative reorganization).

Note : The year 2020 was highlighted by a vertical dashed line, in order to draw the attention on the impact of the COVID-19 crisis.

		Usage Rate	Annual increase			
		2023 *(per 10^5 insured)*	**2013-2023**	**2013-2021**	**2021-2023**	**Structural break**
Provinces	West Flanders	*954*	-1,05%	-2,29%	4,04%	NA
	East Flanders	*806*	0,53%	0,34%	1,28%	NA
	Antwerp	*749*	-1,17%	-1,58%	0,50%	NA
	Limburg	*805*	-1,15%	-1,65%	0,89%	NA
	Flemish Brabant	*756*	-0,98%	-1,37%	0,56%	NA
	Brussels	*731*	0,30%	-0,09%	1,90%	NA
	Walloon Brabant	*767*	1,35%	-0,19%	7,73%	NA
	Hainaut	*832*	0,75%	0,03%	3,70%	NA
	Liège	*729*	-2,10%	-3,06%	1,81%	NA
	Namur	*787*	0,05%	-0,47%	2,16%	NA
	Luxembourg	*704*	1,31%	0,44%	4,85%	NA
Regions	Flanders	*810*	-0,74%	-1,30%	1,51%	NA
	Brussels	*731*	0,30%	-0,09%	1,90%	NA
	Wallonia	*778*	-0,16%	-1,05%	3,45%	NA
	TOTAL	***793***	**-0,48%**	**-1,13%**	**2,19%**	***

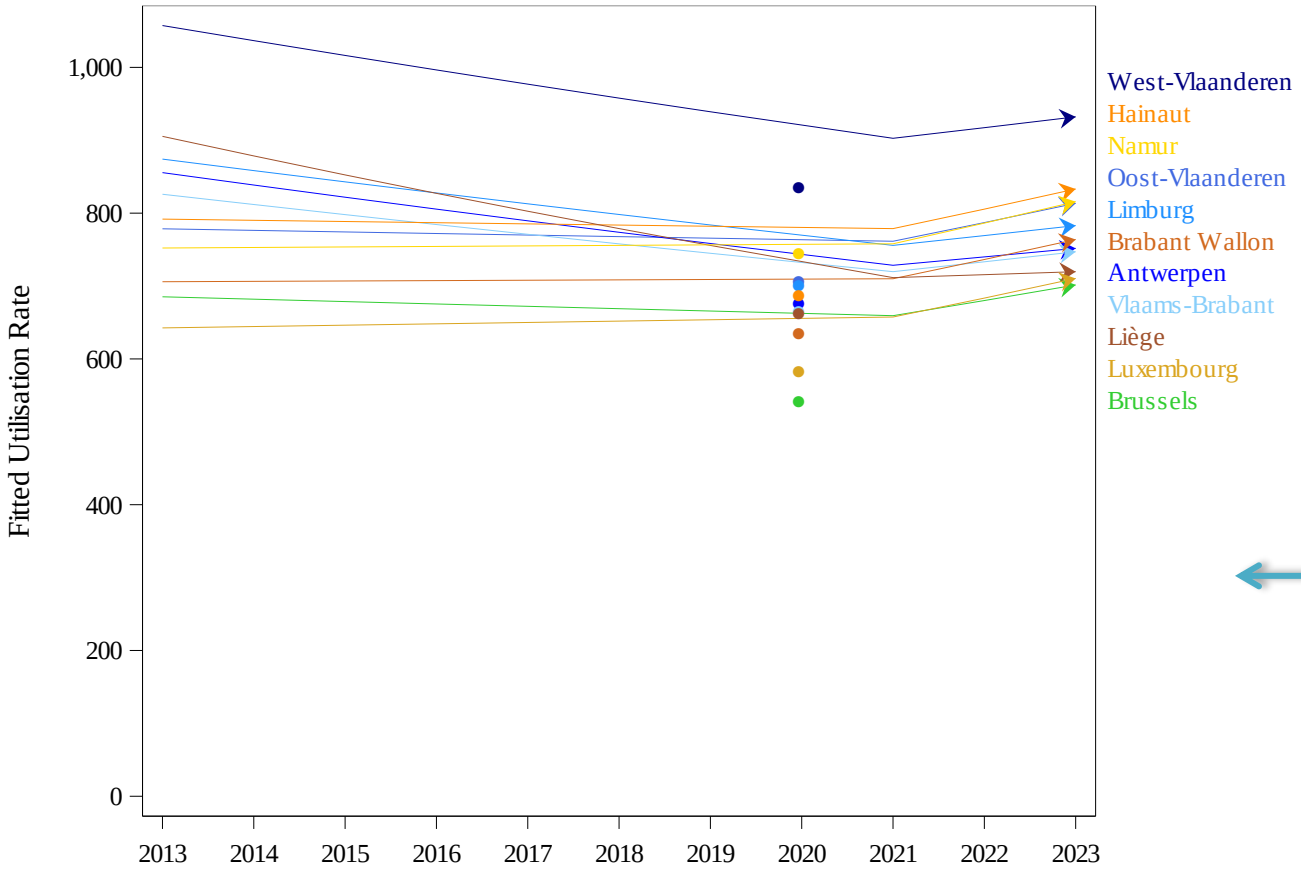
Trends in the usage rates, by province and region

This table reports the standardised **usage rates** for the last year analysed (2023), as well as the average **rates of increase**, by province, by region and in total, for the entire period (2013-2023), for the last years (2021-2023) and for the period preceding the last years (2013-2021)

In order to find out whether the trend in the last years differs from that in the years before, a linear mixed model was fitted in two steps. In the first step a change in trend on the national level is tested. If this test is significant, in a second step, the model tests whether the difference in trend is significant for each province, region and at the national level. The data of 2020 are excluded from the models.

The significance of the test for a change in trend is reported in the Structural break column : * P-value ≤ 0.05 / ** P-value ≤ 0.01 / *** P-value ≤ 0.001 and NS for a non-significant result.

'NA' is shown where the nomenclature codes selected for the analysis have not been used for the entire last period or when the statistical tests cannot be evaluated.



Regression lines per province showing a possibly different slope for the last years (2021-2023) compared to the years before (2013-2021).

Data of 2020 was excluded from this analysis, but is indicated on the graph for information.

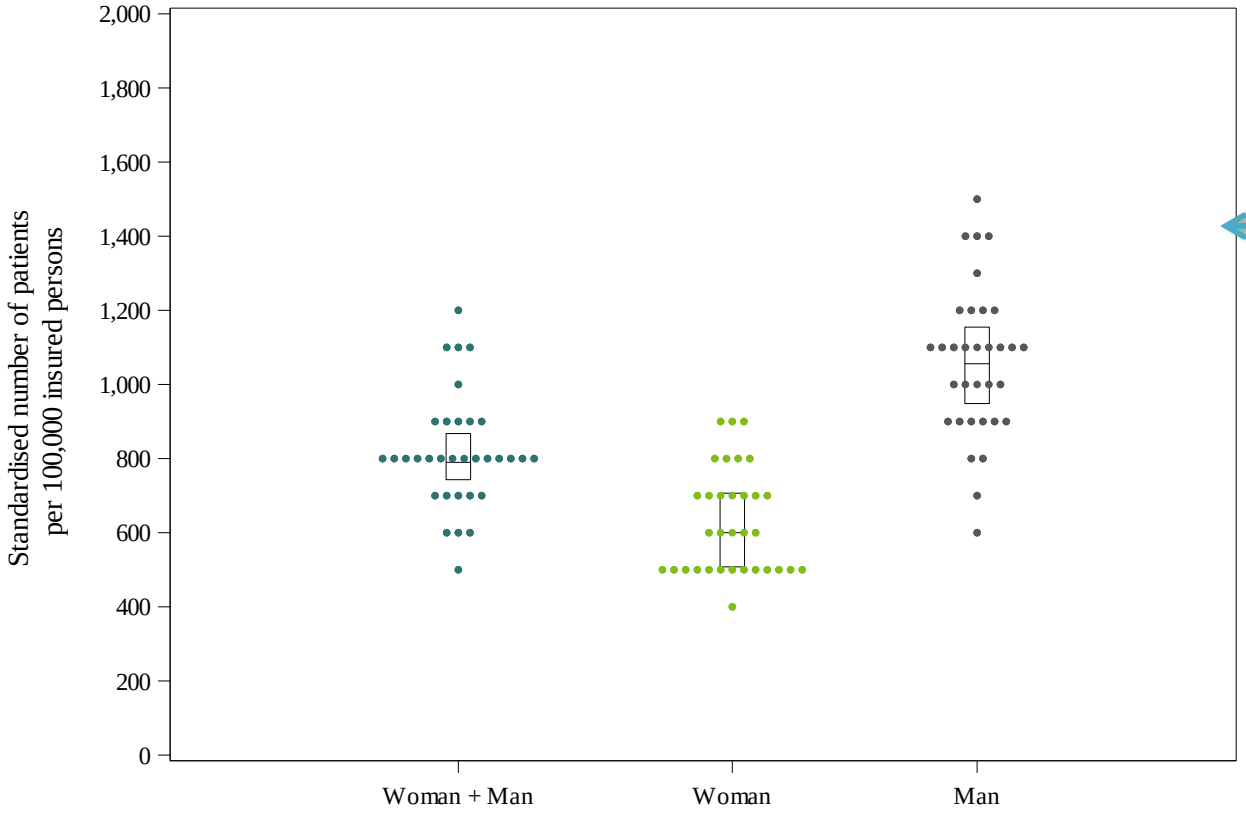
Trend break assessment model by province – Regression lines

F. Geographical variations in standardised usage rates

	TOTAL
Estimated number of patients per year	***91.323***
Coefficient of Variation (2023)	**17,71**
Max/Min Ratio* of the standardised usage rates (by region)	**1,11**
Max/Min Ratio* of the standardised usage rates (by district*)	**1,75**

Coefficient of Variation (2021-2023)	**18,37**
Coefficient of Variation (2013-2015)	**24,48**
Statistically significant difference? ($p \leq 0.05$)	*No*

** An 'NA' result indicates a ratio which cannot be calculated, i.e. the minimum value = zero (cf. B. Standardised usage rate by sex and age)*

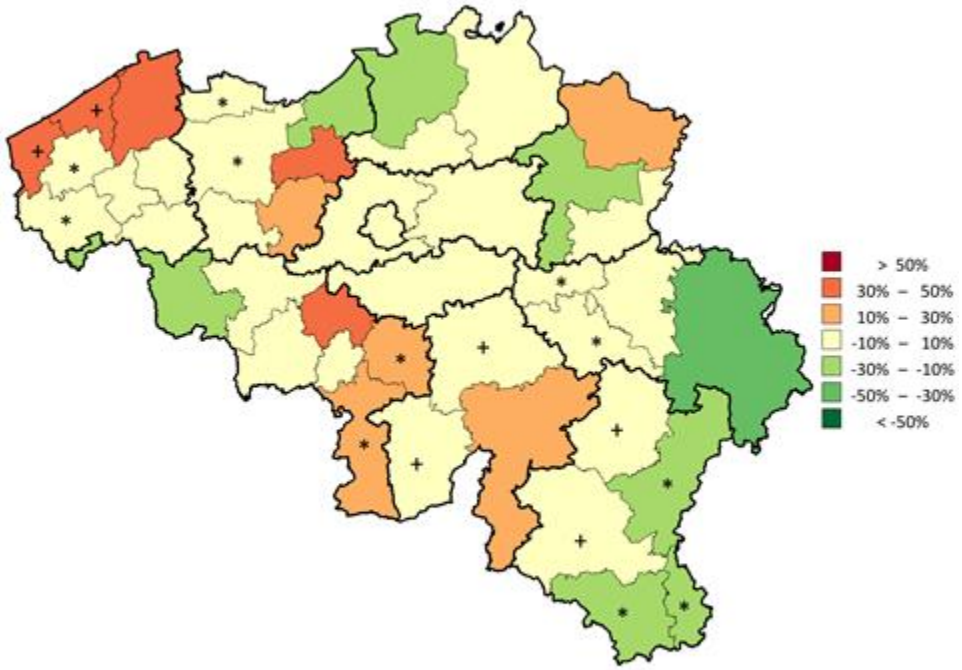


'Dot plot' showing standardised usage rates by district*, by sex

A **dot plot** is a distribution chart, which is useful for highlighting groups in the data, gaps in the distribution and outliers. Here, each dot represents the usage rate of a district*, for its entire population or broken down by sex.

The rates are rounded to the nearest unit, ten, hundred, etc., depending on the value of the maximum rate, in order to better group the values.

The graph also shows a box with the 25th, 50th and 75th percentiles of the non-rounded standardised usage rates for all patients. The bottom line of the box represents the 25th percentile, while the upper line represents the 75th percentile. The line inside the box represents the 50th percentile.



Map showing distribution of standardised usage rates, by district*

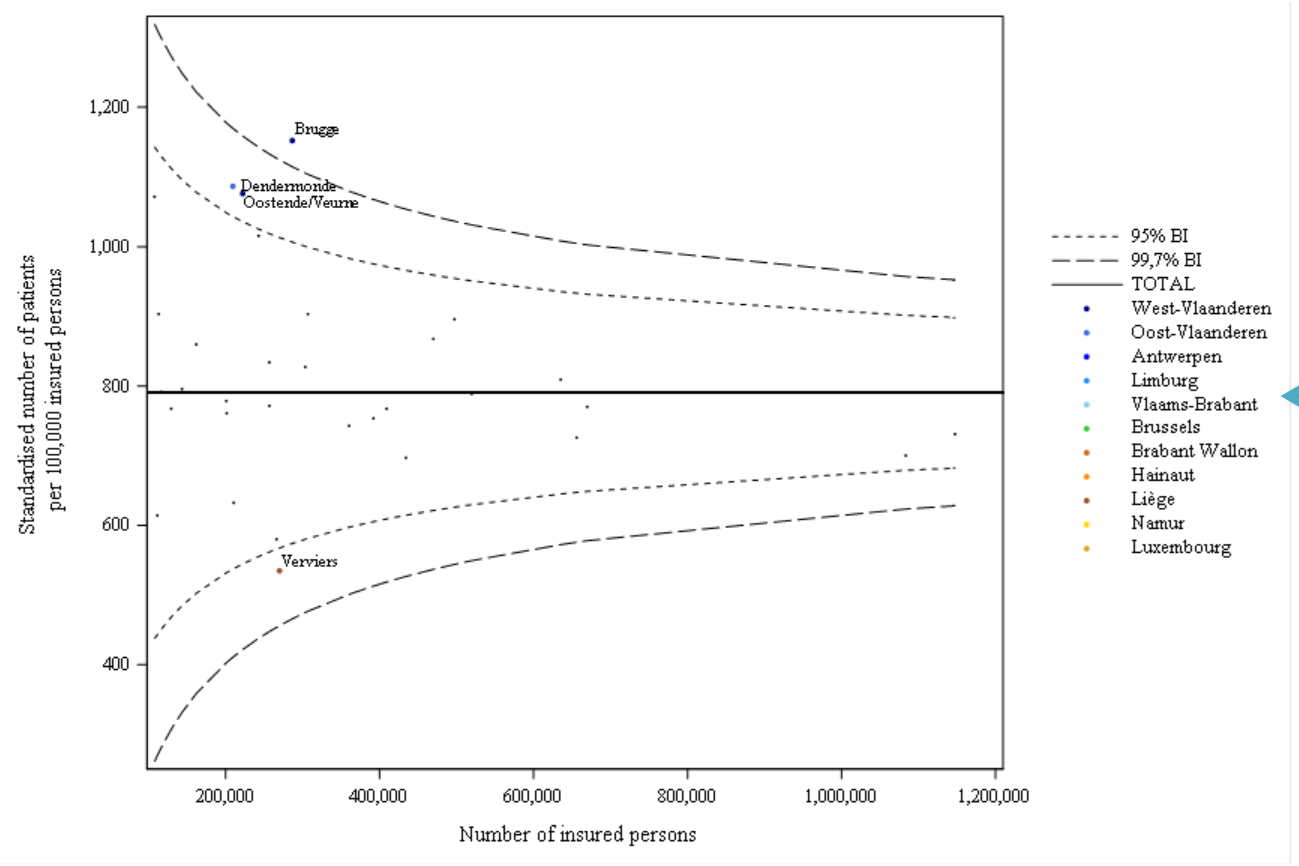
On this map of Belgium, thin lines show the boundaries of the districts, while thick lines show the provincial borders. The districts* are coloured using a colour scale based on the level of usage rate in the district* compared to the Belgian national rate (overall rate). This ratio is expressed as a percentage: e.g. 0% if the district* rate is equal to the overall rate, 20% if the rate is 20% above the overall rate, and -20% if the rate is 20% below the overall rate. The percentages are calculated using the standardised rates of the last year analysed, and are displayed in bands of 20%. The following colour coding applies:

Colour	Category
	More than 50%
	Between 30% and 50%
	Between 10% and 30%
	Between - 10% and 10%
	Between -30% and -10%
	Between -50% and - 30%
	Less than -50%
	Not used

N.B.: The interpretation of this map is to be done in parallel with the graph in funnel plot (next page).

* Districts marked with * or + are grouped together within the same province.

see page 12, Standardisation



'Funnel plot' showing the standardised usage rates by district* by the number of insured persons

In this graph, the standardised usage rate in a district* is positioned versus the size of its population. Besides the dots representing the districts*, 95% and 99.7% **confidence intervals** are also shown on the graph. These are dependent of the size of the districts*. The thicker horizontal line shows the national standardised usage rate. The outlier districts* are identified as those districts* that fall outside the 99.7% confidence intervals, the zone between the 95% and 99.7% confidence intervals being considered as "warning zone".

N.B.: The interpretation of this graph is to be done in parallel with the map of the distribution of usage rates (previous page).

G. Standardised healthcare expenditure borne by the insurance

	TOTAL
Number of services per year	*115.049*
Annual expenditure (€)	*5.481.572*
Average cost per patient (€)	60,02
Average cost per insured[1] (€)	0,48
Max/Min Ratio* of expenditure per insured (by region)	1,1
Max/Min Ratio* of expenditure per insured (by district*)	1,91

** An 'NA' result indicates a ratio which cannot be calculated, i.e. the minimum value = zero (cf. B. Standardised usage rate by sex and age)*

[1] Reminder: Expenditure is based on the insured selected for the analysis (see section 2.E, Specific selection criteria)

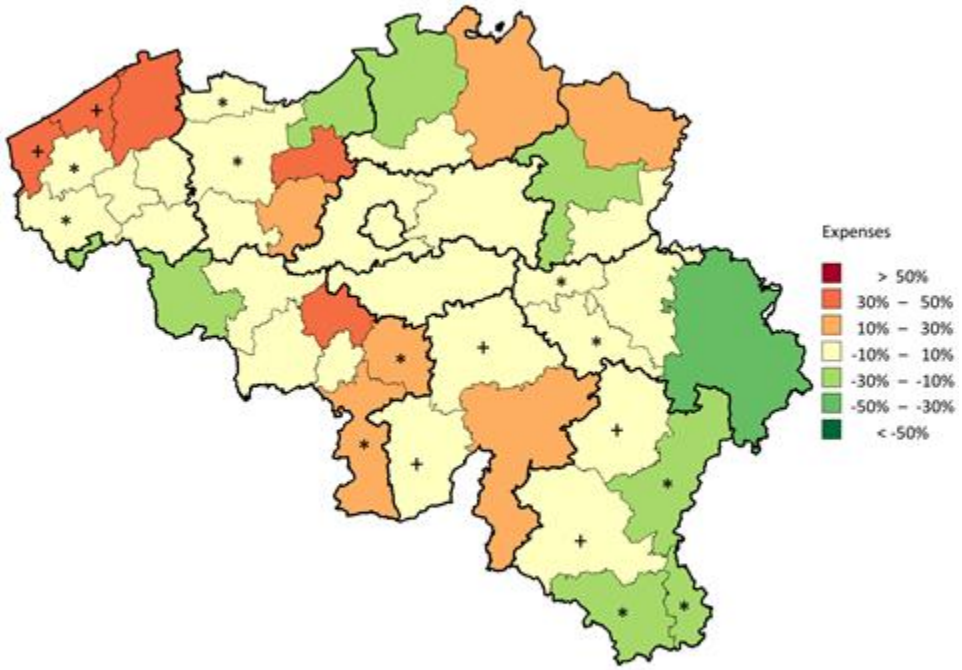
		Standardised expenditure (per insured[1])	Relative difference compared to total
Provinces	West Flanders	0,57 €	18,75%
	East Flanders	0,48 €	0,00%
	Antwerp	0,46 €	-4,17%
	Limburg	0,49 €	2,08%
	Flemish Brabant	0,46 €	-4,17%
	Brussels	0,44 €	-8,33%
	Walloon Brabant	0,47 €	-2,08%
	Hainaut	0,51 €	6,25%
	Liège	0,41 €	-14,58%
	Namur	0,48 €	0,00%
	Luxembourg	0,41 €	-14,58%
Regions	Flanders	0,49 €	2,08%
	Brussels	0,44 €	-8,33%
	Wallonia	0,46 €	-4,17%
	TOTAL	**0,48 €**	

Regional and provincial distribution of standardised expenditure (2023)

[1] Reminder: Expenditure is based on the insured selected for the analysis (see section 2.E, Specific selection criteria)

Trends in expenditure, by service and by nomenclature code

Nomenclature	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average annual growth rate
260271-260282	43,97	44,58	44,62	44,61	44,90	45,50	45,50	45,89	46,25	47,00	49,68	1,23%
260330-260341	38,69	39,23	39,25	39,27	39,48	40,04	40,11	40,46	40,80	41,51	43,90	1,27%
431152-431163	46,34	47,01	47,13	47,09	47,43	48,14	48,21	48,71	49,18	50,04	52,91	1,34%



Map showing distribution of standardised expenditure, by district* (per insured person)

On this map of Belgium, thin lines show the boundaries of the districts, while thick lines show the provincial borders. The districts* are coloured using a colour scale based on the level of expenditure per insured in the district* compared to Belgian national (overall) expenditure per insured. This ratio is expressed as a percentage: e.g. 0% if expenditure in the district* is equal to the overall expenditure, 20% if it is 20% higher, and -20% if it is 20% lower. The percentages are calculated using the standardised expenditure of the last year analysed and are displayed in bands of 20%. The following colour coding applies:

Colour	Category
	More than 50%
	Between 30% and 50%
	Between 10% and 30%
	Between - 10% and 10%
	Between -30% and -10%
	Between -50% and - 30%
	Less than -50%
	No expenditure

* Districts marked with * or + are grouped together within the same province.
see page 12, Standardisation

Standardised expenditure per patient in 2023 and occurrences of practice per patient in 2022 (see Annex B), by demographic category

	Estimated std. expenditure per patient		Occurrence per year	Occurrence per year	Occurrence per day
	(€)	Tot. Relative Diff. (%)	(Services)	(Days)	(Services)
TOTAL	60,02		1,26	1,26	1,00
Sex					
Men	66,22	10,33%	1,32	1,32	1,00
Women	51,40	-14,36%	1,17	1,17	1,00
Reimbursement scheme					
General	58,10	-3,20%	1,26	1,26	1,00
Preferential	66,06	10,06%	1,25	1,25	1,00
Region					
Flanders	60,15	0,22%	1,27	1,27	1,00
Brussels	60,86	1,40%	1,25	1,25	1,00
Wallonia	59,50	-0,87%	1,25	1,24	1,00
Age					
00-04	60,64	1,03%	1,05	1,05	1,00
05-09	54,90	-8,53%	1,01	1,01	1,00
10-14	60,17	0,25%	1,03	1,03	1,00
15-19	52,41	-12,68%	1,03	1,03	1,00
20-24	49,83	-16,98%	1,06	1,06	1,00
25-29	50,33	-16,14%	1,06	1,06	1,00
30-34	49,36	-17,76%	1,05	1,05	1,00
35-39	50,68	-15,56%	1,08	1,08	1,00
40-44	50,43	-15,98%	1,08	1,08	1,00
45-49	52,24	-12,96%	1,11	1,11	1,00
50-54	53,76	-10,43%	1,15	1,14	1,00
55-59	55,60	-7,36%	1,18	1,18	1,00
60-64	57,83	-3,65%	1,22	1,22	1,00
65-69	60,85	1,38%	1,28	1,28	1,00
70-74	62,88	4,77%	1,32	1,32	1,00
75-79	64,66	7,73%	1,34	1,34	1,00
80-84	65,55	9,21%	1,36	1,35	1,00
85-89	66,46	10,73%	1,35	1,35	1,00
90-94	66,85	11,38%	1,34	1,34	1,00
95+	64,12	6,83%	1,25	1,24	1,00

4. KEY DATA SUMMARY

		TOTAL	
PROVIDERS & PRESCRIBERS			
Main healthcare providers:	*Urology*	**98,78%**	
Main prescribers:	*Not applicable*	**-**	
USAGE RATE			
Number of services per year		**115.049**	
Average occurrence per patient per day (services)		**1,00**	
Average occurrence per patient per year (days)		**1,26**	
Total average occurrence		**1,26**	
Estimated number of patients (per year)		**91.323**	
Standardised usage rate (per 100 000 insured persons)		**793**	
Percentage of outpatient care		**94,07%**	
POPULATION			
% of the selected population compared to the total number of insured people		**100,00%**	
Median age of patients		**69** years	
Max/min ratio[1] of the median age (by district*)		**1,09**	
Percentage of women (patients)		**39,85%**	
Ratio Preferential rate/General rate (patients)		**1,22**	
TRENDS			
Trend[2] (2013-2023)		**-0,48%**	**NS**
Trend[3] (2013-2021)		**-1,13%**	*******
Trend[3] (2021-2023)		**2,19%**	
GEOGRAPHICAL VARIATIONS			
Coefficient of variation[4] (2013-2015)		**24,48**	**NS**
Coefficient of variation[4] (2021-2023)		**18,37**	
Max/min Ratio[1] of usage rate (per 100 000 insured persons, by region)		**1,11**	
Max/min Ratio[1] of usage rate (per 100 000 insured persons, by district*)		**1,75**	
DIRECT EXPENDITURE			
Annual expenditure		**5.481.572** €	
Average annual expenditure per insured[5]		**0,48** €	
Max/Min Ratio[1] of expenditure per insured (by region)		**1,1**	
Max/Min Ratio[1] of expenditure per insured (by district*)		**1,91**	
Average annual expenditure per patient		**60,02** €	
CODING VARIATIONS & PRACTICE ALTERNATIVES			
Variations in practice coding[6] (by province)		**Yes**	*******
Variations in the choice of practice alternatives[6] (by province)		**NA**	**NA**

[1] An 'NA' result indicates a ratio, which cannot be calculated, i.e. the minimum value equals zero.
[2] The test indicates whether the observed slope is statistically significantly different from 0%.
[3] The test indicates whether the break in trend between the two periods is statistically significant.
[4] The test compares the coefficients of variation for the two periods and indicates whether the difference is statistically significant.
[5] Expenditure is based on the insured people selected.
[6] The test indicates whether the practice variation between provinces is statistically significant

5. APPENDICES

A. Analysis of variance (ANOVA), except Brussels

Statistical significance of the differences observed in 2023		
By region?	No	NS
By sex?	Yes	***
By reimbursement scheme?	Yes	***
By sex and per region?	No	NS
By reimbursement scheme and per region?	No	NS
By sex and per reimbursement scheme?	No	NS
By sex and reimbursement scheme and per region?	No	NS

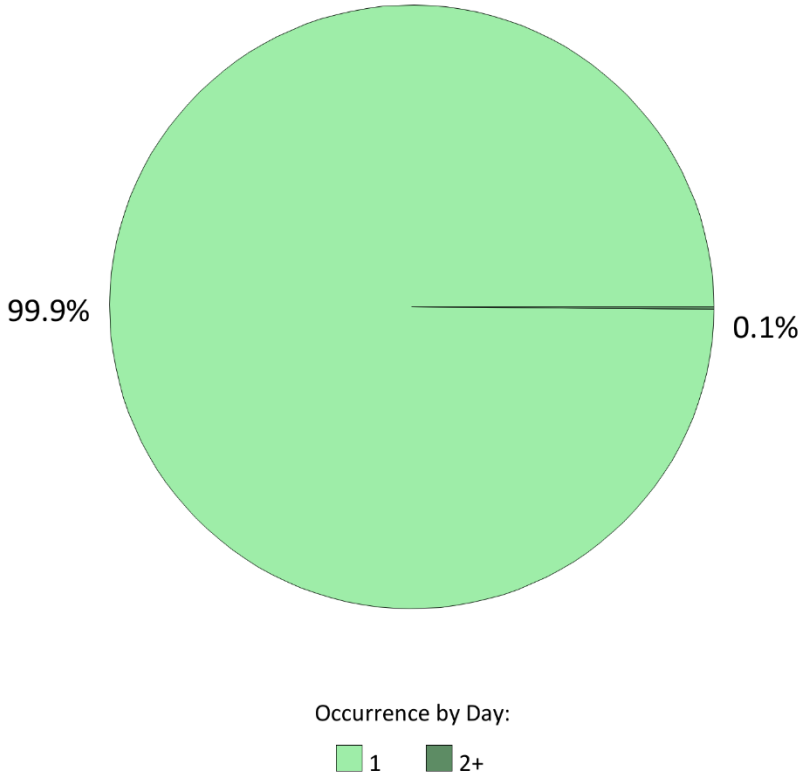
In order to be able to assess the significance of the observed differences, a linear mixed ANOVA model was fitted to the data of all districts* of the Walloon and Flemish regions, after standardising for age. The model has region, sex and reimbursement scheme as fixed effects and also contains all two-way and three-way interactions between these effects.

In order to interpret the model correctly, first the three-way interaction should be evaluated, followed by the two-way interactions and finally by the main effects. If the three-way interaction is significant, the interpretation of the model should be done at this level only and the two-way interactions and main effects should not be interpreted. If the three-way interaction is not significant, the two-way interactions are evaluated. Every main effects that appears in a significant interaction should be interpreted at the level of the interaction and not at the level of that main effect. Main effects can only be interpreted directly if they don't appear in a significant interaction.

The **asterisks** represent the level of statistical significance of the tests: * P-value ≤ 0,05 / ** P-value ≤ 0,01 / *** P-value ≤ 0,001 or NS for a non-significant result.

B. Frequency of practice occurrences (per patient)

Average number of services per day per patient : 1,00



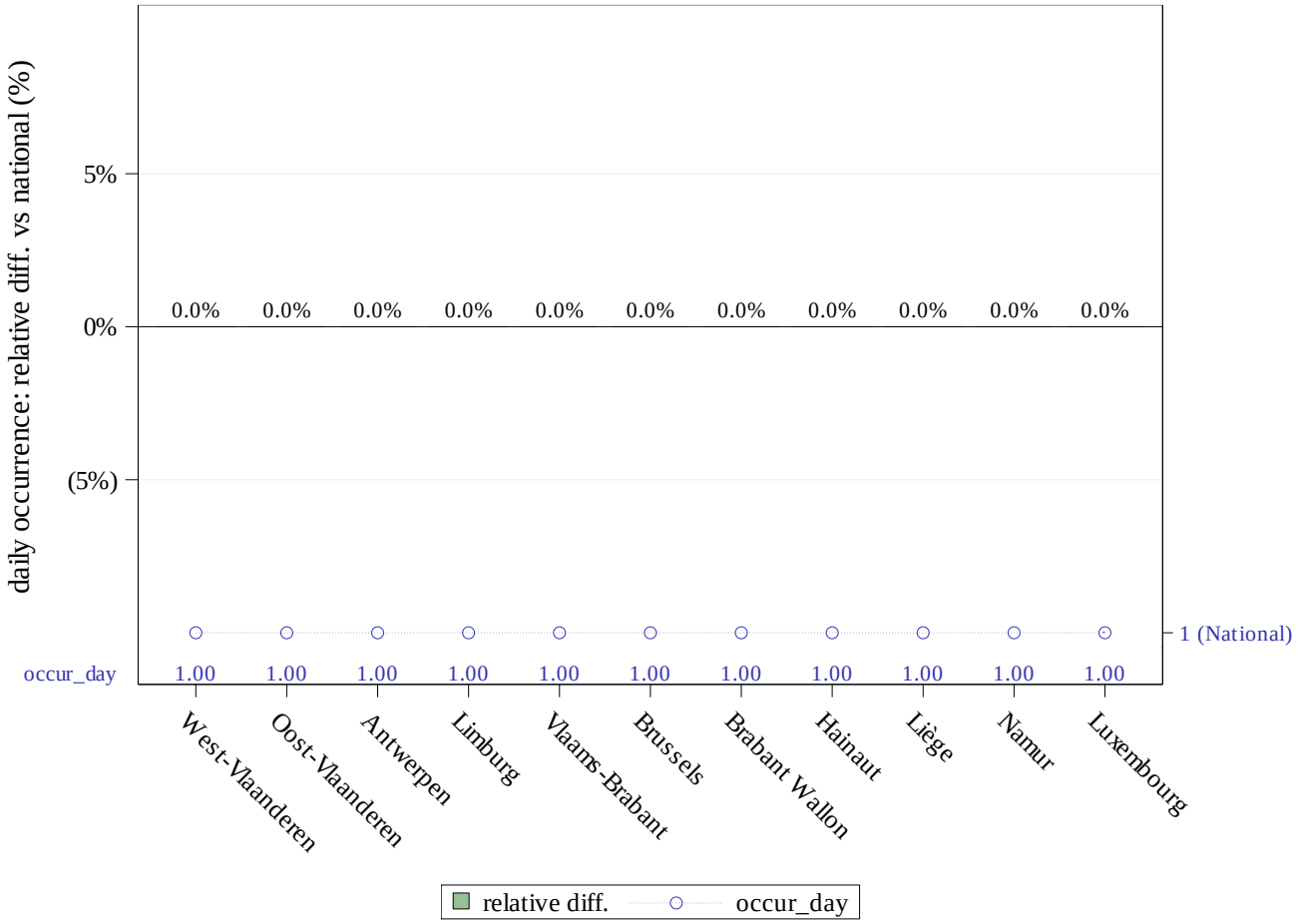
Distribution of patient days by occurrence of practice per day (2022)

Sometimes several codes (similar or different) relating to the same practice are charged on the same day for the same patient. This may be due, among other things, to an anatomical effect, which may lead, depending on the organ concerned, to performing the same practice **bilaterally,** thus causing an occurrence of 2 services on the same day.

This pie chart shows the distribution of patient days according to the number of services performed on the same day for the same patient.

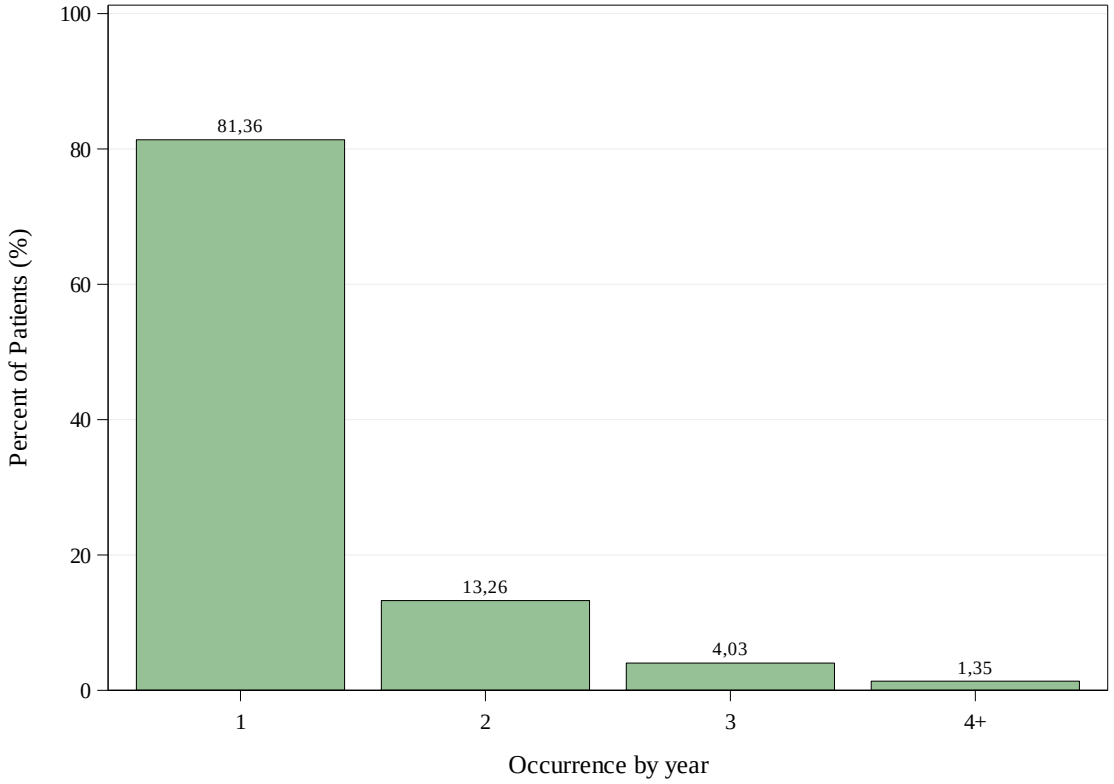
These frequency analyses of occurrences are carried out over the year **2022** using the following databases: Documents P, ADH and SHA.

Values « **n.a.** » are indicated if the data were not available at the time of this report.



Average number of services <u>per day</u> per patient by province and variation in relation to the national average (2022)

Average number of days per patient over the year : 1,26

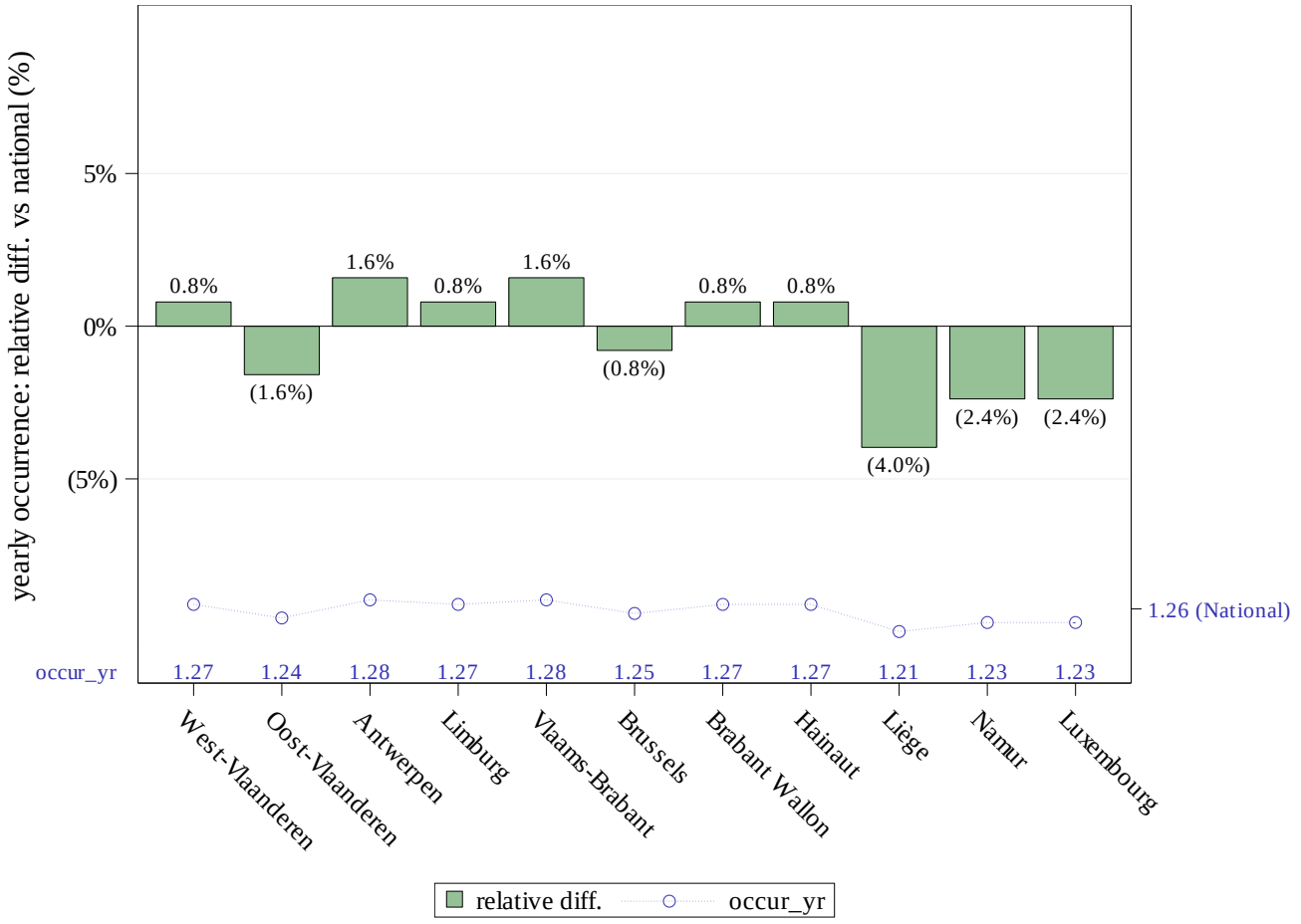


Distribution of patients by occurrence of practice over the year (2022)

After taking into account the occurrence per day, it is also possible for one or more services of the same practice to be charged on several different days for the same patient during the same year.

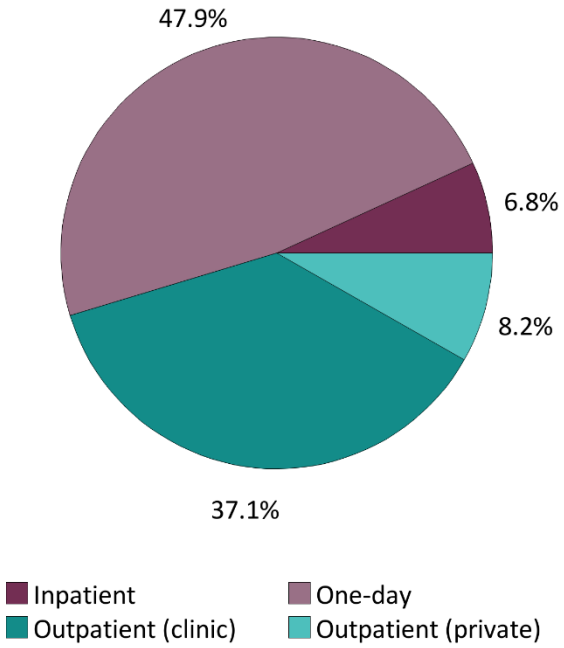
This histogram shows the distribution of patients by the occurrence of the practice over the year (which does not include the occurrence per day).

The year **2022** was taken into account to calculate the occurrence of the services (from the following databases: Documents P, ADH and SHA).



Average number of days per patient over the year by province and variation in relation to the national average (2022)

C. Types of patient care



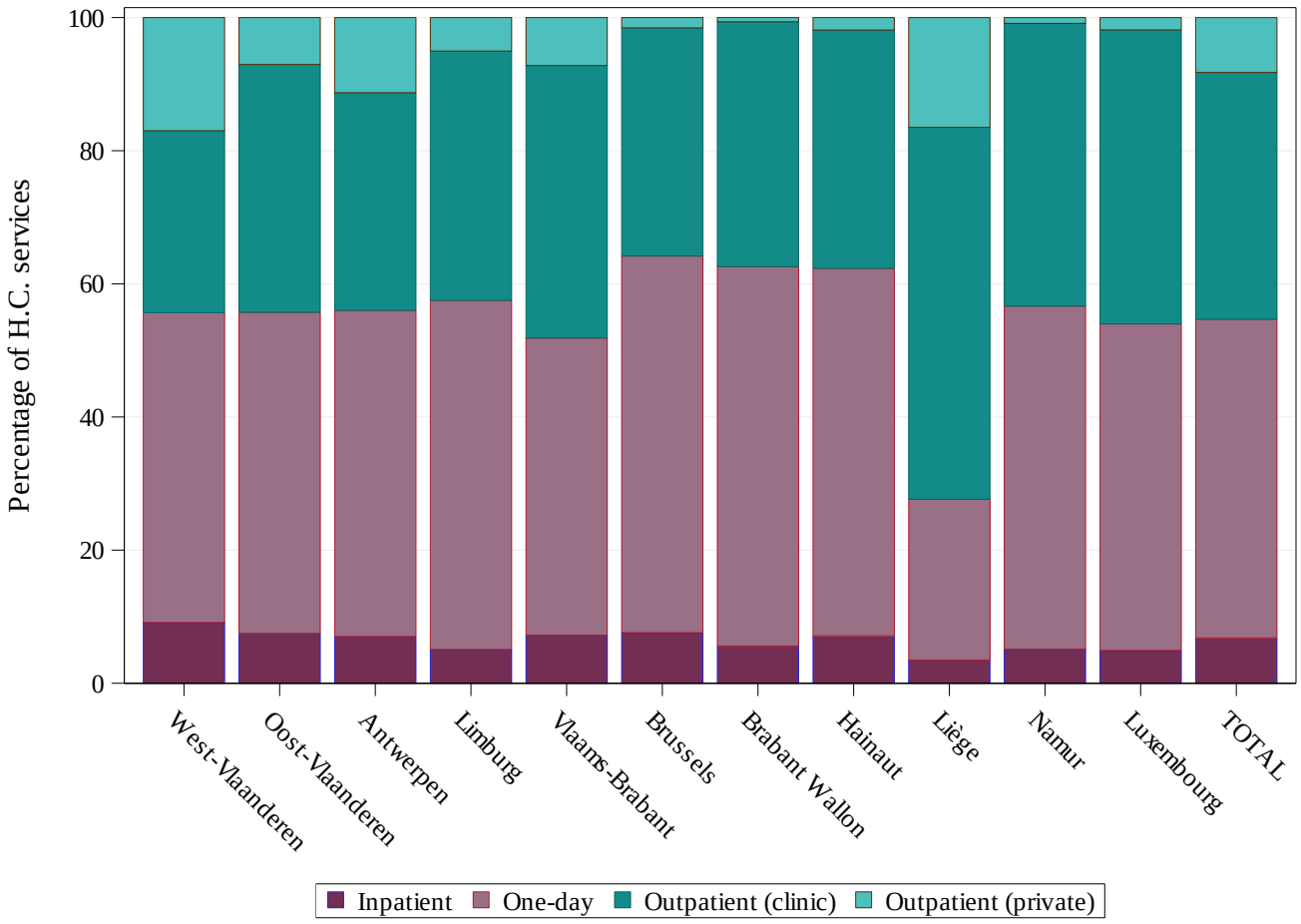
Distribution of types of patient care in 2022

Care Settings	
Outpatient (private)	*8,2%*
Outpatient (polyclinic)	*37,1%*
(Day) Hospital	*47,9%*
Hospital (stay)	*6,8%*

In addition to the chapter on the rate of outpatient care (see p.18), the analysis of types of patient care can be refined by identifying the outpatient (private and polyclinic) and inpatient (day or standard hospitalisation) sub-sectors.

These analyses are carried out over the year **2022** using the following databases: Documents P, ADH and SHA.

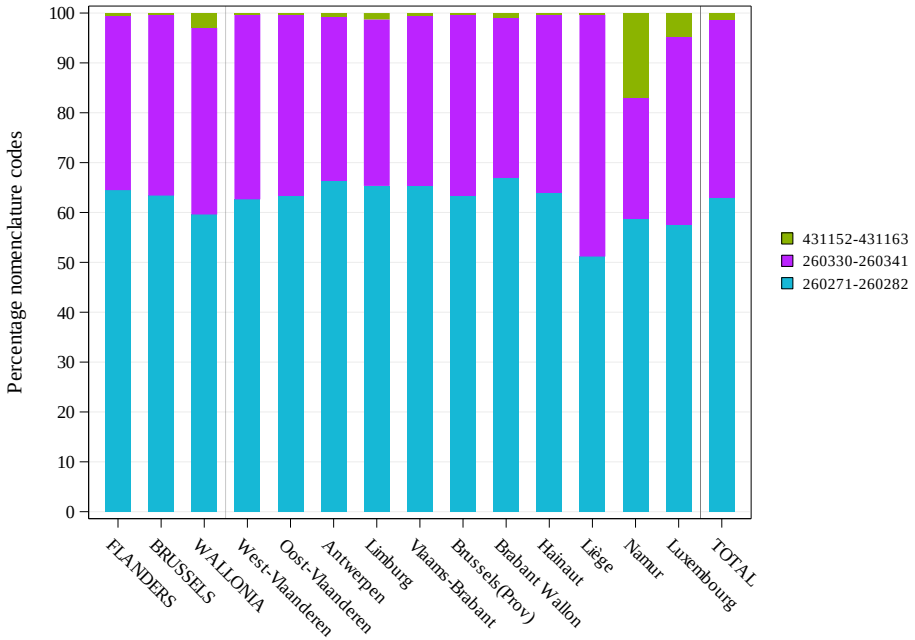
Values « **n.a.** » are indicated if the data were not available at the time of this report.



Distribution of types of patient care by province (2022)

D. Coding variations and practice alternatives

➔ **Variations in coding:**



Volume breakdown of nomenclature codes

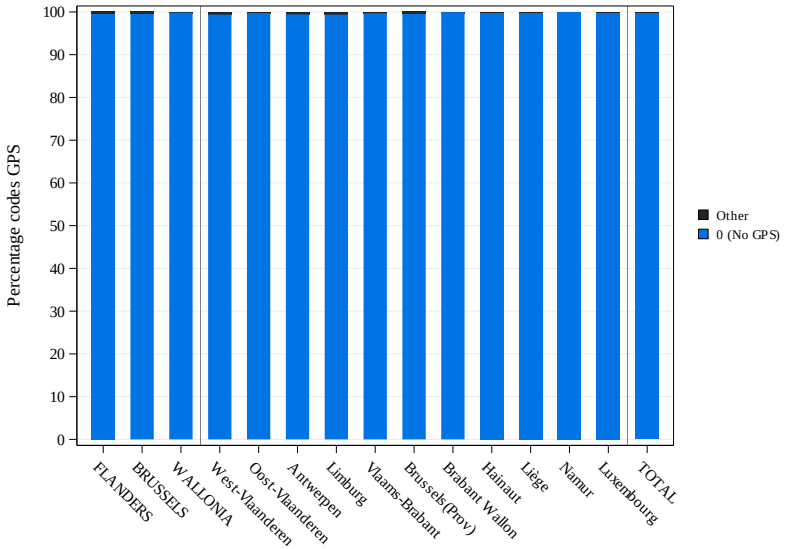
Outpatient	Inpatient	Label
260271	**260282**	Cystoscopie avec ou sans prélèvement biopsique chez l'homme
260330	**260341**	Cystoscopie avec ou sans prélèvement biopsique, chez la femme
431152	**431163**	Cystoscopie, avec ou sans prélèvement biopsique, chez la femme

Significance	By region	By province
Use of **Nomenclature codes**[1]	***	***

[1] The calculation of significance is carried out here by comparing the geographical differences in the use of the different nomenclature codes to code the practice.

The **asterisks** represent the level of statistical significance of Chi-square test: * P-value ≤ 0,05 / ** P-value ≤ 0,01 / *** P-value ≤ 0,001. **NS** and **NA** respectively indicate that the variations are not significant or not applicable.

➔ **Variation in the use of Global Payment with Standardisation (GPS) :**



Pseudocodes	Label

Breakdown by volume of pseudocodes of GPS

Significance	By region	By province
Use of **Global Payment with Standardisation**[1]	***	***

[1] The calculation of significance is carried out here by comparing the use of Global Payment with Standardisation as a whole compared to the non-use of these packages.