

HEALTH SYSTEM PERFORMANCE ASSESSMENT: CARE FOR PEOPLE LIVING WITH CHRONIC CONDITIONS

TECHNICAL SHEETS



HEALTH SYSTEM PERFORMANCE ASSESSMENT: CARE FOR PEOPLE LIVING WITH CHRONIC CONDITIONS

TECHNICAL SHEETS

CHARLINE MAERTENS DE NOORDHOUT, CARL DEVOS, JEF ADRIAENSSENS, NICOLAS BOUCKAERT, CELINE RICOUR, SOPHIE GERKENS



COLOPHON

Title:	Health system performance assessment: care for people living with chronic conditions – Technical Sheets
Authors:	Charline Maertens de Noordhout (KCE), Carl Devos (KCE), Jef Adriaenssens (KCE), Nicolas Bouckaert (KCE), Céline Ricour (KCE), Sophie Gerkens (KCE)
Project facilitator:	Nathalie Swartenbroekx (KCE)
External experts and stakeholders:	Benjamin Bels (LUSS – Ligue des Usagers des Services de Santé), Jean-Pierre Blondeel (Observatorium voor de chronische ziekten, Hodgkin and non-Hodgkin vzw), Paul Callewaert (SOCMUT – Socialistische mutualiteiten), Sabine Corachan (LUSS), Albert Counet (Observatoire des maladies chroniques, LUSS et Ligue Huntington), Lut De Baere (BOKS – Belgische Organisatie voor Kinderen en volwassenen met een Stofwisselingsziekte), Regina De Paepe (Landsbond der Onafhankelijke Ziekenfondsen), Brecht Devleesschauwer (Sciensano), Siska Germonpré (NVSM – Nationaal Verbond Socialistische Mutualiteiten), Laura Jame (VPP – Vlaams Patiëntenplatform), Fulgence Lupaka Issa Azala (Observatoire des maladies chroniques, INAMI – RIZIV Institut national d'assurance maladie-invalidité – Rijksinstituut voor ziekte en invaliditeitsverzekering, SPP Intégration Sociale – POD Maatschappelijke Integratie), Pascal Meeus (INAMI – RIZIV), Françoise Renard (Sciensano), Eva Schoeters (RaDiOrg, Rare Diseases Belgium), Sigrid Van Corenland (Landsbond der Christelijke Mutualiteiten), Johan Van der Heyden (Sciensano), Marie Villance (LUSS), Harun Yaras (SPF Santé Publique – FOD Volksgezondheid)
External validators:	Jon Cylus (European Observatory on Health Systems and Policies), Jean Macq (UCLouvain – Université catholique de Louvain), Michael Van den Berg (OECD – Organisation for Economic Co-operation and Development)
Acknowledgements:	We would like to thank the following experts for their support during this study; El Maâti Allaoui, (AIM – IMA - Agence InterMutualiste – InterMutualistisch Agentschap), Nathalie Bossuyt (Sciensano), Danielle Croisiaux (AIM – IMA), Marie Dauvrin (KCE), Hyacinthe De Lhoneux (INAMI – RIZIV), Ri De Ridder (Cabinet Frank Vandenbroucke), Stephan Devriese (KCE), Tonio Di Zinno (AIM – IMA), Valérie Fabri (UNMS), Jennifer Hernould (INAMI – RIZIV), Bernard Landtmeters (CM), Sarah Laplasse (Bond Moyson, NVSM), Astrid Lavens (Sciensano), Roos Leroy (KCE), Renaud Louis (CHU de Liège, pneumologie – allergologie), Xavier Rygaert (AIM – IMA), Vinciane Sizaire (Fares asbl), Anne Spranger (Berlin University of Technology), Benjamin Swine (INAMI – RIZIV), Nathalie Terryn (SPF SPSCAE – FOD VVVL), Carine Van de Voorde (KCE), Amelie Van Vyve (Sciensano), Martine Verstreken (IMA – AIM), Lilas Weber (Fares asbl), Karl Martin Wissing (UZ Brussel)
Reported interests:	All experts and stakeholders consulted within this report were selected because of their involvement in the topic of HSPA Chronic care. Therefore, by definition, each of them might have a certain degree of conflict of interest to the main topic of this report'.



Layout:

Ine Verhulst

Disclaimer:

- The external experts were consulted about a (preliminary) version of the scientific report. Their comments were discussed during meetings.
- They did not co-author the scientific report and did not necessarily agree with its content.,
- Subsequently, a (final) version was submitted to the validators. The validation of the report results from a consensus or a voting process between the validators.
- The validators did not co-author the scientific report and did not necessarily all three agree with its content.,
- Finally, this report has been approved by common assent by the Executive Board. , Only the KCE is responsible for errors or omissions that could persist. The policy recommendations are also under the full responsibility of the KCE.

Publication date:

21 April 2022

Domain:

Health Services Research (HSR)

MeSH:

Chronic disease, health services accessibility, quality of health care, efficiency, Belgium

NLM Classification:

W 84

Language:

English

Format:

Adobe® PDF™ (A4)

Legal depot:

D/2022/10.273/18

ISSN:

2466-6459

Copyright:

KCE reports are published under a “by/nc/nd” Creative Commons Licence
<http://kce.fgov.be/content/about-copyrights-for-kce-publications>.



How to refer to this document?

Maertens de Noordhout C, Devos C, Adriaenssens J, Bouckaert N, Ricour C, Gerkens S. Health system performance assessment: care for people living with chronic conditions – Technical sheets. Health Services Research (HSR) Brussels: Belgian Health Care Knowledge Centre (KCE). 2022. KCE Reports 352TS. D/2022/10.273/18.

This document is available on the website of the Belgian Health Care Knowledge Centre.,



■ TABLE OF CONTENTS

1.	OUT-OF-POCKET PAYMENTS AS A SHARE OF CURRENT TOTAL HEALTHCARE EXPENSES (A-2)	12
1.1.	DOCUMENTATION SHEET	12
1.2.	RESULTS	14
2.	SELF-REPORTED UNMET NEEDS FOR MEDICAL CARE DUE TO FINANCIAL REASONS (% OF INDIVIDUALS AGED 16 OR MORE) (A-4)	19
2.1.	DOCUMENTATION SHEET	19
2.2.	RESULTS	21
3.	PROPORTION OF LOW-CARE RENAL DIALYSIS (%) (E-5)	25
3.1.	DOCUMENTATION SHEET	25
3.2.	RESULTS	26
4.	PROPORTION OF HOUSEHOLDS WITH (FURTHER) IMPOVERISHING (EQ-4) AND CATASTROPHIC (EQ-5) OUT OF POCKET PAYMENTS	30
4.1.	DOCUMENTATION SHEET	30
4.2.	RESULTS	34
4.2.1.	Households with (further) impoverishing OOPs (EQ-4)	34
4.2.3.	Households with catastrophic OOPs (EQ-5)	39
5.	PROPORTION OF PEOPLE WITH THE RIZIV-INAMI CHRONIC ILLNESS STATUS ACCORDING TO THEIR OFFICIAL HEALTH EXPENDITURE (CHR-1)	43
5.1.	DOCUMENTATION SHEET	43
5.2.	RESULTS	45
6.	PROPORTION OF PEOPLE REPORTING A CHRONIC DISEASE (CHR-2)	50
6.1.	DOCUMENTATION SHEET	50
6.2.	RESULTS	52



6.2.1.	Self-reported chronic diseases in population	52
6.2.2.	Reporting of chronic disease in people with the chronic illness status	53
7.	PROPORTION OF PEOPLE WITH SELF-REPORTED MULTIMORBID STATE IN THE LAST 12 MONTHS (CHR-3).....	56
7.1.	DOCUMENTATION SHEET	56
7.2.	RESULTS	58
7.2.1.	self-reported multimorbid state in the last 12 months in the population	58
7.2.2.	Chronic illness status and self-reported chronic disease in people self-reporting multimorbidity state in the last 12 months.....	59
8.	VACCINATION AGAINST INFLUENZA FOR THE ELDERLY (P-4).....	61
8.1.	DOCUMENTATION SHEET	61
8.2.	RESULTS	62
8.2.1.	Belgium	62
8.2.2.	International comparison.....	66
9.	BREAST CANCER SCREENING (P-6; P-7).....	69
9.1.	DOCUMENTATION SHEET	69
9.2.	RESULTS	70
9.2.1.	Belgium	70
9.2.2.	By RIZIV-INAMI status for persons with chronic illness.....	70
9.2.3.	International comparison.....	78
10.	REGULAR CONTACTS WITH A DENTIST (P-11)	81
10.1.	DOCUMENTATION SHEET	81
10.2.	RESULTS	83
10.2.1.	Belgium	83
10.2.2.	International Comparison	92



11.	APPROPRIATE FOLLOW-UP OF DIABETIC PATIENTS (QA-1, QA-2)	95
11.1.	DOCUMENTATION SHEET	95
11.2.	RESULTS	97
12.	SELF-PERCEIVED QUALITY OF LIFE (QOL-1)	103
12.1.	DOCUMENTATION SHEET	103
12.2.	RESULTS	104
	12.2.1. Self-reported health-related quality of life in population	104
13.	PERCENTAGE OF PERSONS WHO HAVE A GLOBAL MEDICAL RECORD (GMR) WITH A GENERAL PRACTITIONER (QC-1)	109
13.1.	DOCUMENTATION SHEET	109
13.2.	RESULTS	110
14.	GP ENCOUNTER WITHIN 7 DAYS AFTER HOSPITAL DISCHARGE (% PATIENTS 65+) (QC-3)	118
14.1.	DOCUMENTATION SHEET	118
14.2.	RESULTS	120
15.	PROPORTION OF ADULT DIABETICS (UNDER INSULIN) WITHIN A PASS/PRE-CARE TRAJECTORY, A CARE TRAJECTORY OR A CONVENTION (% OF PATIENTS, 18+) (QC-4) & PROPORTION OF ADULT DIABETICS (RECEIVING GLUCOSE-LOWERING DRUGS OTHER THAN INSULIN) WITHIN A PASS/PRE-CARE TRAJECTORY, A CARE TRAJECTORY OR A CONVENTION (% OF PATIENTS, 50+) (QC-5)	127
15.1.	DOCUMENTATION SHEET	127
15.2.	RESULTS	131
16.	REFERENCE PHARMACIST (PROPORTION OF PATIENTS) (QC-7)	138
16.1.	DOCUMENTATION SHEET	138
16.2.	RESULTS	139



17.	HOSPITAL ADMISSIONS FOR ASTHMA (QE-1), HOSPITAL ADMISSIONS FOR UNCONTROLLED DIABETES OR COMPLICATION OF DIABETES (QE-2), AND HOSPITAL ADMISSIONS FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE (QE-10)	145
17.1.	DOCUMENTATION SHEET	145
17.2.	RESULTS	147
17.2.1.	Hospital admission for asthma (for people aged 15 years old and over)	147
17.2.2.	Hospital admission for uncontrolled diabetes, or complications of diabetes for people aged 15 years old and over)	149
17.2.3.	Hospital admission for COPD for people aged 15 years old and over)	151
18.	SUCCESSFUL TREATMENT OF PULMONARY TUBERCULOSIS CASES (QE-11)	155
18.1.	DOCUMENTATION SHEET	155
18.2.	RESULTS	157
18.3.	INTERNATIONAL COMPARISON:	157
19.	PATIENTS EXPERIENCES WITH AMBULATORY HEALTHCARE SERVICE (QP-1, QP-3, QP-4)	163
19.1.	DOCUMENTATION SHEET	163
19.2.	RESULTS	164



LIST OF FIGURES

Figure 1 – Share of out-of-pocket payments (OOPs) in total healthcare expenses for various subgroups (years 2008, 2012, 2016).....	15
Figure 2 – Share of co-payments, supplements and MAB reimbursements in total healthcare expenses, subdivided by chronic condition (years 2008, 2012, 2016)	16
Figure 3 – Share of out-of-pocket payments for various care categories in total healthcare expenses, by chronic condition (years 2008, 2012, 2016)	17
Figure 4 – Share of individuals with self-reported unmet needs for medical examination due to financial reasons in Belgium for various subgroups (years 2008, 2012 and 2016).....	23
Figure 5 – Proportion of low-care dialysis by region and by hospitals in a region per year	26
Figure 6 – Proportion of low-care dialyses per hospital (n=52) per year (2017-2020).....	28
Figure 7 – Proportion of households further impoverished, impoverished, at risk of impoverishment and without out-of-pocket payments (OOPs) (2008-2016) with consumption as proxy for household resources. Overall incidence and subdivided by chronic condition.	35
Figure 8 – Proportion of households further impoverished, impoverished, at risk of impoverishment and without out-of-pocket payments (OOPs) (2008-2016) with income as proxy for household resources. Overall incidence and subdivided by chronic condition.	36
Figure 9 – Proportion of households with catastrophic out-of-pocket payments (OOPs) (2008-2016) with consumption as proxy for household resources. Overall incidence and subdivided by chronic condition.	39
Figure 10 – Proportion of households with catastrophic out-of-pocket payments (OOPs) (2008-2016) with income as proxy for household resources. Overall incidence and subdivided by chronic condition.....	40
Figure 11 – Percentage of the population entitled to the status chronic illness (years 2013 to 2020). Figures for Belgium and the regions.	45
Figure 12 – Percentage of the population entitled to the status chronic illness (Year 2019). Differences between the Belgian provinces.....	45
Figure 13 – Percentage of the population of the communities (in age groups) entitled to the status chronic illness (years 2014 to 2020).....	46
Figure 14 – Percentage of the population of the communities (gender based) entitled to the status chronic illness (years 2014 to 2020).....	47



Figure 15 – Percentage of the population aged 15 years and over with at least one chronic disease (years 2001, 2004, 2008, 2013, 2018). Figures for Belgium and the regions.	52
Figure 16 – Proportion of people reporting at least two chronic conditions among the selected diseases in the last 12 months (% of respondents, 15+), by Region and year	59
Figure 17 – Coverage of vaccination against influenza in people aged 65 years and over, by region (2013-2019) and by chronic status (Chronic = left side; Not chronic = right side)	63
Figure 18 – Influenza vaccination coverage by province, by chronic status (2019).....	66
Figure 19 – Coverage of vaccination against influenza for elderly: international comparison (2018, trend 2000-2020)	67
Figure 20 – Coverage of breast cancer screening (all mammograms) in women 50-69 years old, by region, year (organised left side; total right side).....	74
Figure 21 – Coverage of breast cancer screening (all mammograms) in women 50-69 years old, by region, year and NIDHI chronic disease status (not chronic disease status left side; chronic disease status right side).....	75
Figure 22 – Coverage of breast cancer screening (organised mammograms) in women 50-69 years old, by region, year and NIDHI chronic disease status (not chronic disease status left side; chronic disease status right side).....	76
Figure 23 – Coverage of breast cancer screening (organised) in women 50-69 years old, by province (2019) and by chronic status (not chronic: left side; chronic right side)	77
Figure 24 – Coverage of total mammograms in women 50-69 years old, by province (2019) and by chronic status (not chronic: left side; chronic right side).....	78
Figure 25 – Coverage of breast cancer screening: international comparison (2019 (or latest available year)).	79
Figure 26 – Regular contact with a dentist, by chronic illness status and region (2014-2019)	86
Figure 27 – Regular contact with dentist, by district, by chronic status, 2019.....	87
Figure 28 – Proportion of people (15+) that consulted a dental care specialist in the last 12 months, by chronic status	90
Figure 29 – Proportion of people (15+) that never consulted a dental care specialist in the last 12 months, by chronic status	91



Figure 30 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per test in 2019 in Belgium	98
Figure 31 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per region and per year (2009-2019).....	99
Figure 32 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per districts in 2018 (2019 not available).....	100
Figure 33 – Overall HRQOL among chronic ill persons by year and by data source.....	107
Figure 34 – Evolution of insured population with a global medical record (GMR), by region and by year (2003-2019)	111
Figure 35 – Percentage of insured population with GMR, by district (2019)	112
Figure 36 – Evolution of insured population with a global medical record (GMR), by region, year (2014-2019) and chronic illness status	113
Figure 37 – Percentage of insured population with a Global Medical Record (GMR), by chronic status and age category (2019).....	115
Figure 38 – Percentage of insured population with GMR, by district, by chronic illness status (2019) (left side: chronic; right side: not chronic)	116
Figure 39 – Evolution in proportion of hospital stays of elderly patients (65+) followed by a GP consultation within 1 week after discharge, by chronic illness status and by year (2013-2019)	124
Figure 40 – Proportion of hospital stays of elderly patients (65+) followed by a GP consultation within 1 week after discharge, by district, by chronic illness status (2019).....	125
Figure 41 – Proportion of diabetic patients in a care trajectory, a convention or with a diabetes pass/pre-care trajectory, by patient district (2019)	134
Figure 42 – Proportion of diabetic patients in a care trajectory, a convention or with a diabetes pass/pre-care trajectory, by patient region (2006-2016).....	135
Figure 43 – Evolution in the proportion of patients in a diabetes care model, per care model (2014-2019)....	136
Figure 44 – Proportion of persons with the chronic illness status with a reference pharmacist by region (2017-2019)	140
Figure 45 – Proportion of persons with the chronic illness status with a reference pharmacist by district (2019)	141



Figure 46 – Survey on reference pharmacist (2020)	143
Figure 47 – Hospital admissions for asthma per 100 000 population aged 15 years and older, per region (2009-2019) and per district (2019)	148
Figure 48 – Age-sex standardized hospital admissions for asthma (for population aged 15 years and older): international comparison (2009-2019).....	149
Figure 49 – Hospital admissions for (complications of) diabetes per 100 000 population aged 15 years and older, per region (2009-2019) and per district (2019).....	150
Figure 50 – Age-sex standardized hospital admissions for diabetes (for population aged 15 years and older): international comparison (2000-2014).....	151
Figure 51 – Hospital admissions for (complications of) COPD per 100 000 population aged 15 years and older, per region (2009-2019) and per district (2019)	152
Figure 52 – Age-sex standardized hospital admissions for COPD (for population aged 15 years and older): international comparison (2009-2019).....	153
Figure 53 – Successful treatment rate (% of people successfully treated), by year and by region	158
Figure 54 – Success of TB treatment in EU-7 countries - cohorts of 2018, data reported in 2019 (%)	161
Figure 55 – Percentage* of satisfaction with time spent by the doctor, by province, 2018	165
Figure 56 – Proportion of satisfied patients (15 years old and plus) about the time spent by their physician during consultation, by chronic status, by year.....	167
Figure 57 – Proportion of satisfied patients (15 years old and plus) about the time spent by their physician during consultation, by region and RIZIV – INAMI chronic illness status (2013, 2018)	169
Figure 58 – Proportion of satisfied patients (15 years old and plus) about the time spent by their physician during consultation, by region and HIS chronic status (2013, 2018).....	170
Figure 59 – Proportion of satisfied patients concerning the time spent by their physician during consultation: international comparison (2013-2020 or nearest year)	171
Figure 60 – Percentage of the patient population aged 15 years and over who report that the doctor gave the opportunity to ask questions or raise concerns about recommended treatment, by chronic status and year	173
Figure 61 – Proportion of patients considering that they were sufficiently involved in decisions about their care or treatment: international comparison 2010-2020 (or nearest)	177



LIST OF TABLES

Table 1 – Proportion of low-care dialysis per region	27
Table 2 – Proportion of hospitals with 40% of low-care dialyses, by hospital type	27
Table 3 – Proportion of households further impoverished, impoverished, at risk of impoverishment, not at risk of impoverishment and without out-of-pocket payments (OOPs) (2008-2016) with consumption as proxy for household resources. Overall incidence and subdivided by chronic condition.	37
Table 4 – Proportion of households further impoverished, impoverished, at risk of impoverishment, not at risk of impoverishment and without out-of-pocket payments (OOPs) (2008-2016) with income as proxy for household resources. Overall incidence and subdivided by chronic condition.	38
Table 5 – Proportion of households with catastrophic out-of-pocket payments (OOPs) (2008-2016) with consumption expenditures as proxy for household resources. Overall incidence and subdivided by chronic condition.	40
Table 6 – Proportion of households with catastrophic out-of-pocket payments (OOPs) (2008-2016) with income as proxy for household resources. Overall incidence and subdivided by chronic condition.....	41
Table 7 – Stratification of chronic illness status for the Belgian population based on age, gender and increased reimbursement (VT-BIM) in 2020.....	48
Table 8 – Percentage of the population (per age group) with at least one chronic disease (years 2001, 2004, 2008, 2013, 2018).....	52
Table 9 – Percentage of persons reporting a chronic disease per country in Europe	53
Table 10 – Reporting of chronic disease in patients with the Chronic illness Status	54
Table 11 – Percentage of the population (per age group) reporting at least two chronic conditions among the selected diseases. (years 2001, 2004, 2013, 2018).....	58
Table 12 – Proportion of people self-reporting multimorbid state in the last 12 months	60
Table 13 – Coverage of vaccination against influenza in people aged 65 years and over, by patient characteristics (2019)	64
Table 14 – Coverage (in %) of breast cancer screening in women 50-69 years old (organised screening mammograms and total mammograms coverage) (2019), by chronic disease status	72
Table 15 – Coverage (in %) of breast cancer screening in women (organised screening mammograms and total mammograms coverage), by chronic disease status, by age and by region (2019).....	73



Table 16 – Proportion of people with regular contact with a ‘dentist’ (N04), by year, chronic status, and patient characteristics (2014-2019)	84
Table 17 – Number of people with regular contact with a ‘dentist’ (N04), by year, chronic status, and patient characteristics (2014-2019)	85
Table 18 – Proportion of people (15+) that consulted a dental care specialist in the last 12 months, by region, chronic status, and year (2013 and 2018)	88
Table 19 – Proportion of people (15+) that never consulted a dental care specialist in the last 12 months, by region, chronic status and year (2013 and 2018)	91
Table 20 – Quality of life scores in population 15+, by year and by region	104
Table 21 – Quality of life scores, by year, region and self-reported chronic disease status	105
Table 22 – Quality of life scores, by year, region and entitlement to the chronic illness	106
Table 23 – Quality of life scores among person who were entitled to the chronic illness status and who self-reported chronic disease, by year	108
Table 24 – Percentage of insured population with a Global Medical Record (GMR), by regions and provinces (2003-2019)	110
Table 25 – Percentage of insured population with a Global Medical Record (GMR), by chronic status, gender, age category and entitlement to increased reimbursement (2019)	114
Table 26 – Proportion of hospital stays of elderly patients (65+) followed by a GP consultation within 1 week after discharge, by patient characteristics and by year (2013-2019) , for the population (panel A) and subdivided by entitlement to the chronic illness status (panel B and C)	121
Table 27 – Proportion of diabetic patients under insulin within a pass/pre-care trajectory, a care trajectory or a convention, by patient characteristics (2019)	132
Table 28 – Proportion of diabetic patients aged 50 years and older receiving other glucose-lowering drugs than insulin with a diabetes pass/pre-care trajectory, a care trajectory or a convention, by patient characteristics (2019)	133
Table 29 – Proportion of individuals with a reference pharmacist per year	139
Table 30 – Reference pharmacist: gender at initiation	140
Table 31 – Successful treatment rate in bacteriologically proven pulmonary tuberculosis at one year, per region and year	158



Table 32 – Treatment outcomes (indicator-related and other issues) at one year in bacteriologically proven pulmonary tuberculosis, per region – cohort of 2018, followed in 2019	159
Table 33 – Successful treatment rate of incident TB cases (new cases and relapse of TB), for a sample of EU countries –reported in 2019	160
Table 34 – Percentage of satisfaction with time spent by the doctor, by age-group, by year	164
Table 35 – Proportion of satisfied patients (15 years old and plus) about the time spent by their physician during consultation, by region and chronic status (2013, 2018).....	167
Table 36 – Percentage of the patient population aged 15 years and over who report that the doctor gave the opportunity to ask questions or raise concerns about recommended treatment.....	172
Table 37 – Percentage of the patient population aged 15 years and over who report that the doctor gave the opportunity to ask questions or raise concerns about recommended treatment.....	173
Table 38 – Percentage of the patient population aged 15 years and over who report that they were sufficiently involved in decisions of the doctor about care and treatment, by year	175
Table 39 – Percentage of the patient population aged 15 years and over who report that they were sufficiently involved in decisions of the doctor about care and treatment, by year and chronic status	175



1. OUT-OF-POCKET PAYMENTS AS A SHARE OF CURRENT TOTAL HEALTHCARE EXPENSES (A-2)

1.1. Documentation sheet

Description	Out-of-pocket payments on health (% of current expenditure on health) Important notice: the current indicator is calculated using EU-SILC/IMA-AIM microdata and therefore differs from the A-2 indicator in the KCE Performance report 313 that is calculated using macrodata from the System of Health Accounts (SHA).¹ EU-SILC/IMA-AIM microdata were used to make a distinction between persons requiring chronic care. Such subdivision is not possible in the SHA data. Unfortunately, the EU-SILC/IMA-AIM microdata do not account for healthcare expenses that are not covered by the public health insurance, while such information is included in the SHA data.
Calculation	Numerator: total household out-of-pocket payments (co-payments and supplements) in a given year, based on data from the InterMutualistic Agency (IMA-AIM). It concerns the amounts registered in variables ss00160 (co-payments) and ss00165 (supplements) for care expenditures and ss00160 (co-payments) for pharmaceutical products. Two corrections are made: (1) a correction for reimbursements related to the system of maximum billing (MAB), i.e. amounts in ss00060 when ss00020 refers to a pseudocode of the MAB (780975, 781771, 781793, 781815, 781874, 781896, 781911, 781933, 781955, 781970, 781616, 781631, 781653, 781675, 781690, 781712, 781734, 781756) and (2) a correction for double registration of expenses in the database for pharmaceutical products and the database for care expenditures by excluding amounts for care expenditures when ss00020 refers to codes for pharmaceutical products (753550, 753572, 753594, 753616). Denominator: total healthcare expenses at the household level (co-payments, supplements and expenses borne by the public health insurance RIZIV-INAMI) in a given year, based on IMA-AIM data. The expenses of the numerator are increased with the expenses borne by the public health insurance, i.e. the amounts registered in variables ss00060 for care expenditures and ss00060 and ss00195 for pharmaceutical products. Different categories of out-of-pocket payments are identified: hospital inpatient care, hospital day care, dental care, general practitioner (GP) care, specialist care and medicines. For a definition of these categories, we refer to section 3.2.2 of the Supplement of KCE report 334.² Calculations are done separately for households with and without a member with chronic condition, using two definitions: 1. Individuals entitled to the status for persons with a chronic illness. Entitlement is observed through IMA-AIM variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement. Households with at least one member entitled to the chronic illness status, are defined as households entitled to the status. 2. Individuals self-reporting to suffer from chronic (long-standing) illness or condition. This is identified through EU-SILC variable PH020 equal to "yes". Households with at least one member with a self-reported chronic condition, are defined as households with a self-reported chronic condition (see also indicator CHR-1).
Rationale	Financial accessibility is a basic condition for a functional healthcare system. There is a near consensus that the financial burden of healthcare payments should not disproportionately rest on persons who seek healthcare. The idea to decouple payments from health risks or the receipt of healthcare does not provide guidance on how payments should be allocated. However, it is generally presumed that payments should be determined by ability or capacity to pay. A rationale to relate payments for healthcare to capacity to pay is that one



	does not want that these payments hinder people's ability to seek healthcare when ill. Another rationale is that one wants to avoid that payments for healthcare reduce households' potential to consume other necessary goods and services such as food, housing and utilities. In this reasoning, it should be expected that the share of out-of-pocket payments (OOPs) as a share of current healthcare expenditures is lower for individuals suffering from a chronic illness with the aim to reduce the financial burden for those in high and frequent need of care.
Primary data source	EU Statistics on Income and Living Conditions (EU-SILC) coupled with data from the InterMutualistic Agency (IMA/AIM). Data from 2008, 2012 and 2016 are used. The EU-SILC microdata are the reference source for measuring socioeconomic disparities in Belgium (and Europe). The Belgian data are collected by Statistics Belgium and are representative of the population. The survey format is harmonized across the EU with small national differences. Each wave consists of about 11 000 to 12 000 individuals in about 6 000 households. For every respondent in the EU-SILC, the available information is enriched with additional data from the InterMutualistic Agency. The IMA-AIM data brings together data of the different sickness funds at the individual level in a common format. An advantage is that the data are not self-reported or limited to a certain registration period, but are continuously collected for administrative use and hence less prone to recall bias. The available information includes detailed individual-level data on the use and expenditures – further subdivided in co-payments, supplements and expenditures chargeable to the public health insurance – of all care covered by the public health insurance (procedures, services, admissions, prescribed medication, etc.) as well as the take-up and use of protection measures in the public health insurance, such as increased reimbursement status, the chronic illness status and the system of maximum billing.
Technical definitions	Out-of-pocket payments are expenditures borne directly by a patient because health insurance does not cover the (full) cost of the health good or service. They include cost-sharing (co-payment, coinsurance – “ticket modérateur” in French and “remgeld” in Dutch – or deductible) for health expenditures covered by the public health insurance, as well as supplements in case they are registered. It does not include expenses that are not covered by the public health insurance (glasses, certain dental care, over-the-counter drugs), as these are not registered in the IMA-AIM data.
Limitations	There is no registration of healthcare that is not covered by the public health insurance or used by residents not insured in the public health insurance. This leads to an underestimation of OOPs. Some vulnerable population groups are not included in the survey sample: people residing in collective facilities such as the elderly and prisoners, the homeless or refugees. We know from other studies that these groups experience higher than average healthcare needs or difficulties in accessing healthcare.³⁻⁶
International comparability	Based on individual level data. At the international level, no data are available that provide a distinction by chronic care patients
Performance dimension	Accessibility of care
Related indicators	Unmet needs for medical care due to financial reasons (A-4), Proportion of households with (further) impoverishing (EQ-4) and catastrophic (EQ-5) out of pocket payments.



1.2. Results

Figure 1 provides an overview of the share of out-of-pocket payments in total healthcare expenses for the population (red line) as well as for different subgroups of the population (blue bars) for the three years that are analysed. Figure 2 presents a subdivision of out-of-pocket payments in co-payments, supplements as well as information on the share of reimbursements in the system of maximum billing (MAB). Figure 3 breaks down the share of out-of-pocket payments by care category.

The overall share of out-of-pocket payments in total healthcare expenses shows a stable trend over time, amounting to 17.8% in 2008, 16.9% in 2012 and 17.9% in 2016. Figure 2, however clearly indicates that the underlying composition has changed profoundly over time with a decreasing share of co-payments in total healthcare expenses (from 15.3% in 2008 to 13.5% in 2016) and an increasing share of supplements (from 2.5% in 2008 to 4.3% in 2016).

Figure 1 shows that regional variation in the share of OOPs in total healthcare expenses is small, but increasing over time. Variation by household income category is more pronounced and also increasing over time, with in 2016 a share of over 22% in the upper middle class and top incomes compared to a share of 11% among households at risk of poverty. Other financially vulnerable groups also have lower out-of-pocket payments as a share of total healthcare expenses.

One potential explanation is that financial protection measures succeed in reducing the out-of-pocket payments. The results in Figure 1, for example clearly show a lower share of OOPs in total healthcare expenses for households benefitting from increased reimbursement, which effectively lowers co-payments chargeable for various types of care. Moreover households benefitting from reimbursements in the maximum billing system also have a lower share of OOPs.

An alternative explanation is that financially vulnerable households forgo or postpone care with a higher share of out-of-pocket payments, such as specialist or dental care. It has been demonstrated that financially vulnerable households and even household benefitting from increased reimbursement postpone medical and dental care due to financial reasons.

Lower share of OOPs in total healthcare expenses for households with a member having a chronic condition

Finally, a difference is observed between households with and without a member with a self-reported chronic condition. Households with at least one member self-reporting to suffer from a chronic condition pay a lower share in OOPs, equal to 15.1% in 2016 relative to 19.7% for household without a member with a self-reported condition.

The difference is more pronounced when using a definition based on the chronic illness status. In this case we find that households with a member entitled to the chronic illness status have a share of OOPs equal to 12.7% in 2016 compared to 19.4% for households without a member entitled to the status.

The results in Figure 2 indicate that the difference is in particular related to a lower share of co-payments, which is not surprising as these households are more likely to benefit from both the MAB and increased reimbursement status, effectively lowering their co-payments. In 2016, the fraction of households benefitting from increased reimbursement amounted to 37.6% and 16.3% for households with and without a member with a self-reported chronic condition, respectively, and to 40.3% and 20.4% for households with and without a member entitled to the chronic illness status, respectively. With respect to the system of maximum billing, the share of households receiving a reimbursement through this protection measure amounted in 2016 to 21.4% and 6.1% for households with and without a member with a self-reported chronic condition, respectively and to 35.2% and 5.6% for households with and without a member entitled to the chronic illness status, respectively.

Increasing share of supplements over time

The share of supplements is increasing over time for both households with and without members with a self-reported chronic condition. The difference between both groups is small and likely related to an income effect with household with a member with a self-reported chronic condition having a relatively lower income.



Lower share of OOPs for GP, dental and specialist care among households with a member having a chronic condition

Figure 3 shows variation in out-of-pocket payments for various care categories between households with and without a member with a self-reported chronic condition and between households with and without a member entitled to the chronic illness status. For both subdivisions, we find no important difference in the share of OOPs for medication, hospital care

and other care. On the other hand, the share of OOPs for GP, specialist and dental care is substantially lower for households with a member with a self-reported chronic condition and for households with a member entitled to the chronic illness status. This can – in particular for GP and specialist care – be explained by lower co-payments related to increased reimbursement status. As already mentioned above, for specialist care and dental care, the lower share can also be related to postponement of care due to financial reasons (see also indicator A-4).

Figure 1 – Share of out-of-pocket payments (OOPs) in total healthcare expenses for various subgroups (years 2008, 2012, 2016)

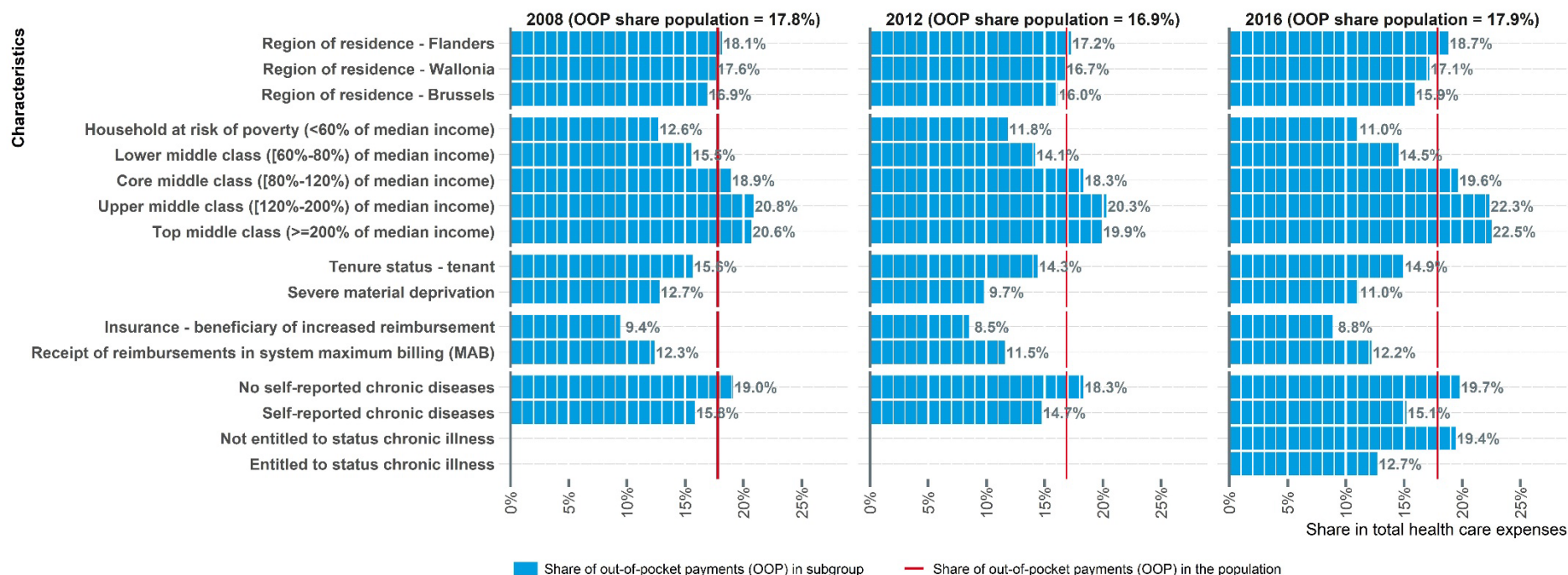




Figure 2 – Share of co-payments, supplements and MAB reimbursements in total healthcare expenses, subdivided by chronic condition (years 2008, 2012, 2016)

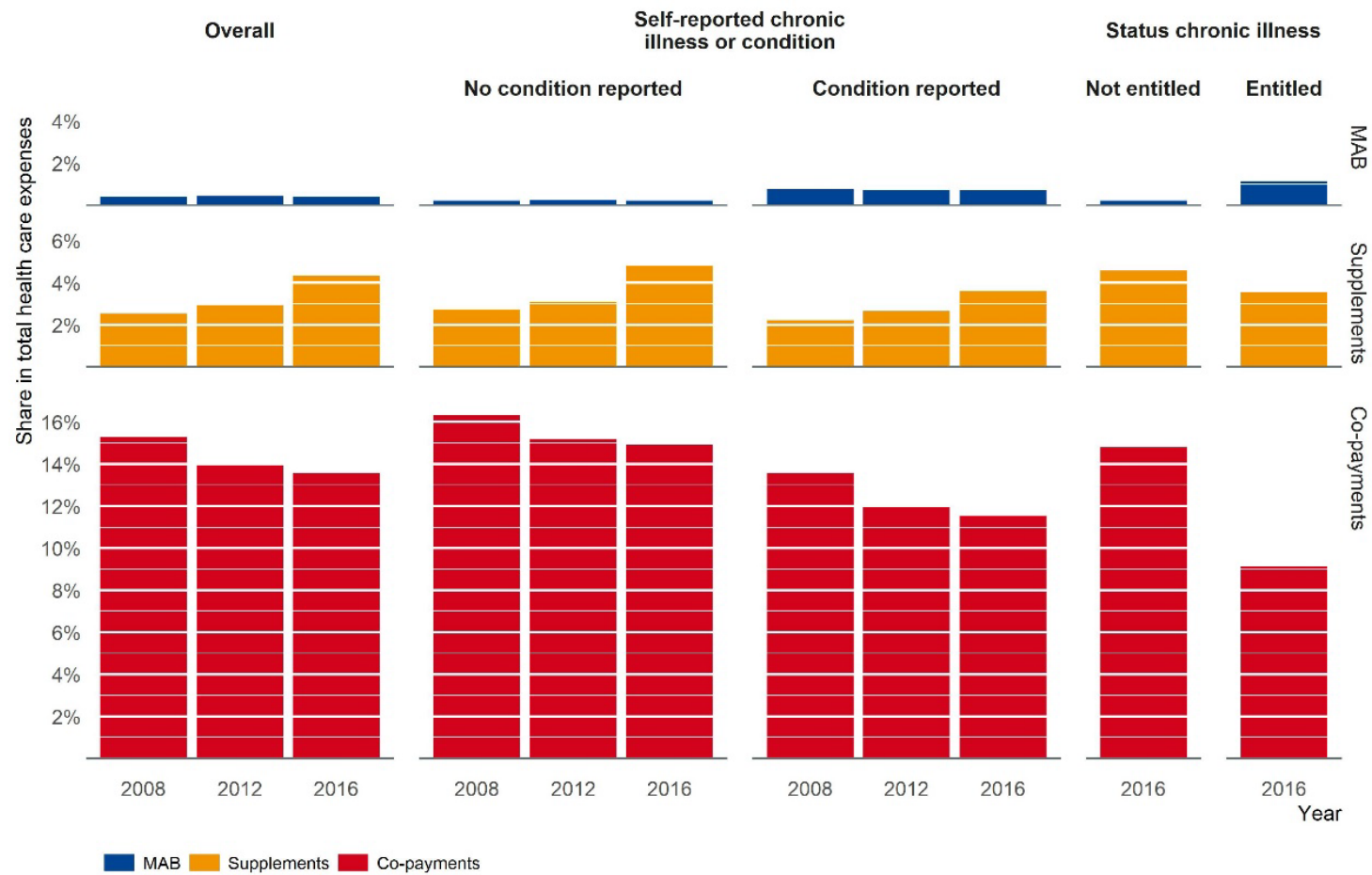
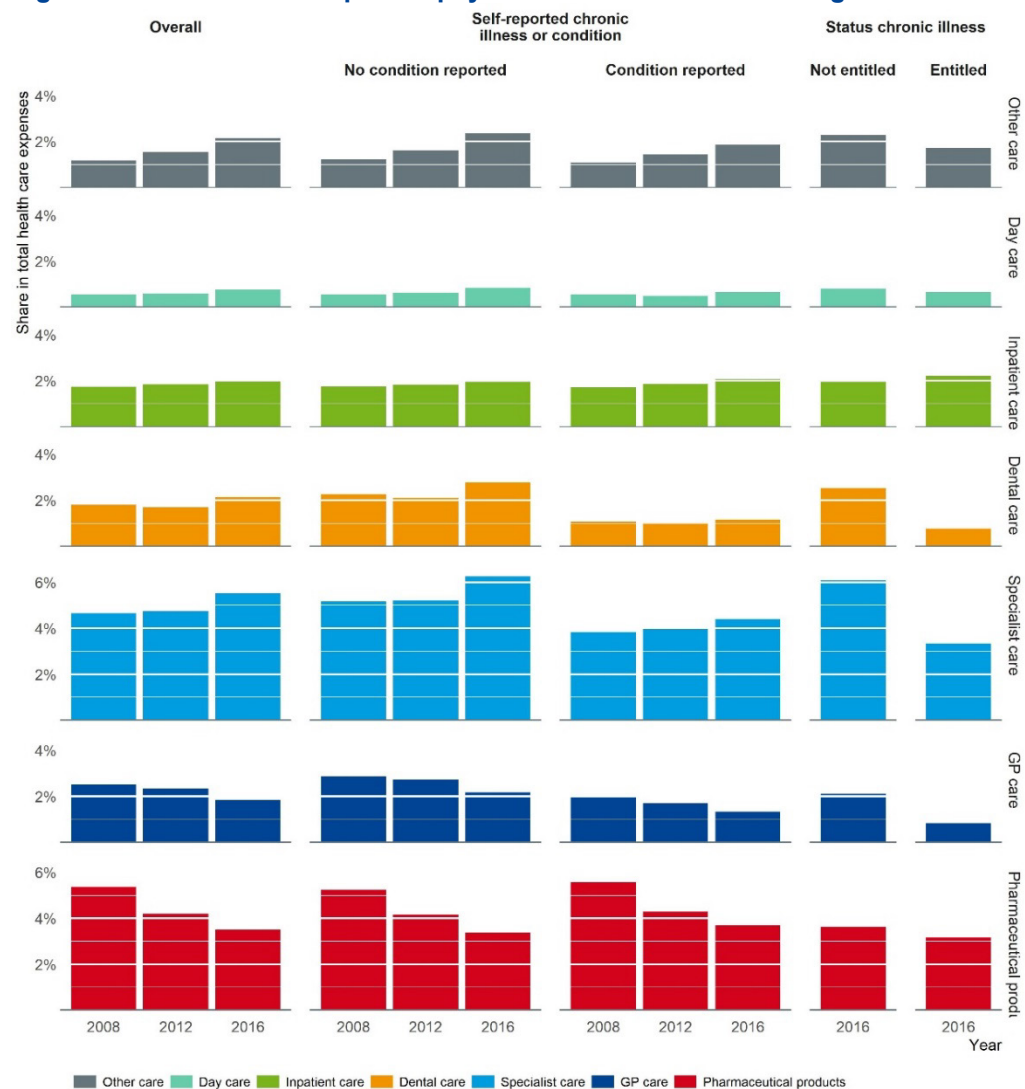




Figure 3 – Share of out-of-pocket payments for various care categories in total healthcare expenses, by chronic condition (years 2008, 2012, 2016)





Key points

- The overall share of out-of-pocket payments in total healthcare expenses shows a stable trend over time, amounting to 17.8% in 2008, 16.9% in 2012 and 17.9% in 2016. The underlying composition has changed profoundly over time with a decreasing share of co-payments and an increasing share of supplements.
- The share of out-of-pocket payments in total healthcare expenses varies in particular in function of the financial means of the households, with lower share for financially vulnerable households. One potential explanation is that financial protection measures succeed in reducing the out-of-pocket payments. An alternative explanation is that financially vulnerable households forgo or postpone care with a higher share of out-of-pocket payments, such as specialist or dental care.
- There is a lower share of OOPs in total healthcare expenses for households with a member having a chronic condition. Household with and without a member with a self-reported chronic condition (EU-SILC) have a share of 15.1% and 19.7%, respectively, in 2016. Household with and without a member entitled to the chronic illness status have a share of 12.7% and 19.4%, respectively, in 2016.
- For both the distinction based on a self-reported chronic condition (EU-SILC) and the chronic illness status (IMA-AIM), the difference between households with and without a member with a chronic condition is in particular related to a lower share of co-payments for the former, which is not surprising as these households are more likely to benefit from both the MAB and increased reimbursement status, effectively lowering their co-payments. Moreover, we find that households with a member with a chronic condition have in particular a lower share of OOPs for GP, specialist and dental care.

References

1. Devos C, Cordon A, Lefèvre M, Obyn C, Renard F, Bouckaert N, et al. Performance of the Belgian health system – Report 2019. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2019 04/2019. KCE Reports 313 Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_313C_Performance_Belgian_health_system_Report.pdf
2. Bouckaert N, Maertens de Noordhout C, Van de Voorde C. Health System Performance Assessment: how equitable is the Belgian health system? Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2020. KCE Reports (334) Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_334_Equity_Belgian_health_system_Report.pdf
3. Dauvrin M, Detollenaere J, De Laet C, Roberfroid D, Vinck I. Asylum seekers in Belgium: options for a more equitable access to health care. A stakeholder consultation. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2019. KCE Reports (319)
4. Mistiaen P, Dauvrin M, Eyssen M, Roberfroid D, San Miguel L, Vinck I. Health care in Belgian prisons. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2017 10/2017. KCE Reports 293 Available from: <https://kce.fgov.be/en/health-care-in-belgian-prisons>
5. Roberfroid D, Dauvrin M, Keygnaert I, Desomer A, Kerstens B, Camberlin C, et al. What health care for undocumented migrants in Belgium ? Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2015 22/12/2015. KCE Reports 257 Available from: http://kce.fgov.be/sites/default/files/page_documents/KCE_257_Health_care_Migrants_Scientific%20Report.pdf
6. RIZIV en Dokters van de Wereld. Groenboek over de toegankelijkheid van de gezondheidszorg in België. 2014.



2. SELF-REPORTED UNMET NEEDS FOR MEDICAL CARE DUE TO FINANCIAL REASONS (% OF INDIVIDUALS AGED 16 OR MORE) (A-4)

2.1. Documentation sheet

Description	Self-reported unmet needs for medical care due to financial reasons (% of individuals aged 16 or more)
Calculation	Numerator: weighted number of individuals aged 16 or more who participated in the in the European Union Statistics on Income and Living Conditions (EU-SILC) who answered “yes” to question PH040 (unmet needs for medical care) and who indicated “could not afford to (too expensive)” in question PH050 as main reason for this unmet needs (see below) Denominator: weighted number of individuals aged 16 or more who participated in the in the European Union Statistics on Income and Living Conditions (EU-SILC) Calculation is done separately for individuals with chronic condition, using 2 definitions Individuals entitled to the status for persons with a chronic illness. Entitlement is observed through IMA-AIM variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement. Households with at least one member entitled to the chronic illness status, are defined as households entitled to the status. Individuals self-reporting to suffer from chronic (long-standing) illness or condition. This is identified through EU-SILC variable PH020 equal to “yes”. Households with at least one member with a self-reported chronic condition, are defined as households with a self-reported chronic condition (see also indicator CHR-1).
Rationale	Financial access is a basic condition for a functional healthcare system. Foregoing necessary treatment because of its cost can be detrimental to a person's health. High out-of-pocket payments that affect other necessary expenses are also considered undesirable. Healthcare is generally considered financially inaccessible when people limit or postpone the use of necessary care because of (excessively) high costs, or when they have to relinquish other basic necessities because they need care. Higher rates of unmet needs for financial reasons are therefore considered indicative for the financial accessibility of healthcare. For a detailed analysis of self-reported unmet needs for medical care due to financial reasons, we refer the reader to KCE report 334.¹
Primary data source	EU Statistics on Income and Living Conditions (EU-SILC) coupled with data from the InterMutualistic Agency (IMA/AIM). Data from 2008, 2012 and 2016 are used. The EU-SILC microdata are the reference source for measuring socioeconomic disparities in Belgium (and Europe). The Belgian data are collected by Statistics Belgium and are representative of the population. The survey format is harmonized across the EU with small national differences. Each wave consists of about 11 000 to 12 000 individuals in about 6 000 households. For every respondent in the EU-SILC, the available information is enriched with additional data from the InterMutualistic Agency. The IMA-AIM data brings together data of the different sickness funds at the individual level in a common format. An advantage is that the data are not self-reported or limited to a certain registration period, but are continuously collected for administrative use and hence less prone to recall bias.



The available information includes detailed individual-level data on the use and expenditures – further subdivided in co-payments, supplements and expenditures chargeable to the public health insurance – of all care covered by the public health insurance (procedures, services, admissions, prescribed medication, etc.) as well as the take-up and use of protection measures in the public health insurance, such as increased reimbursement status, the chronic illness status and the system of maximum billing.

Technical definitions

EU-SILC²⁻⁴

Unmet needs for medical care are recorded at the individual level for respondents aged 16 or more using two questions PH040 and PH050. Medical care refers to individual health services (medical examination or treatment) provided by or under direct supervision of medical doctors; it includes GP, specialist and hospital care, but also mental healthcare and excludes dental care and self-medication

There was a revision of the phrasing of the question in 2011, which was accompanied by a significant increase in reported unmet needs.⁵ Hence a direct comparison of the results of 2008 on the one hand and 2012/2016 on the other hand should be interpreted with caution. Compared to the 2012/2016 question, the question in 2008 is more restricted in scope and puts emphasis on the presence of a health condition as a preliminary to consult a doctor/dentist and the own responsibility of the interviewed person for not seeking care.

PH040

Question in 2008 (up to 2010) (authors' translation from Dutch phrasing):

"During the past 12 months, did you have a health condition or did you need medical treatment (except dental issues) but did you not seek care for one or another reason?"

Answer options:

1. **Yes, I had a health condition and did not consult a doctor**
2. **No, I had a health condition and consulted a doctor**
3. **No, I did not have a health condition, but consulted a doctor for an annual check-up**
4. **No, I did not have a health condition and did not consult a doctor**

Question in 2012/2016 (from 2011 up to 2017) (authors' translation from Dutch phrasing):

"Was there any time during the past 12 months when you really needed a medical examination or treatment, but that this did not occur?"

Answer options:

1. **Yes, there was at least one occasion**
2. **No, there was no occasion**

PH050

There is a follow-up question in which the individuals with unmet needs indicate the main reason for postponing care. In 2008, 2012/2016 the same reasons are available, but with a slightly different wording with respect to affordability:

- In 2008: *"I could not afford it due to financial reasons"*
- In 2012/2016: *"I could not afford it (too expensive or not covered by the sickness fund or an insurance)"*

Other potential reasons for not seeking care include: no time because of work or child care, travel distance was too far, presence of waiting lists, fear of doctor or hospital, wanted to wait and see if problem got better on its own etc.



International comparability	Data on unmet healthcare needs are available in Eurostat based on the EU-SILC survey with subgroup rates by e.g. income quintile, educational attainment, sex, citizenship and age group. However, no distinction in unmet needs is made by self-reported presence of a chronic condition (PH020 variable in EU-SILC). Moreover, no distinction can be made by entitlement to the chronic illness status as the variable is specific to the Belgian public health insurance. For these reasons, no international comparison is presented.
Limitations	For the EU-SILC data, there was a revision of the phrasing of the question in 2011, which was accompanied by a significant increase in reported unmet needs. ⁵ Hence a direct comparison of the results of 2008 on the one hand and 2012/2016 on the other hand should be interpreted with caution. A general limitation is that unmet needs are self-assessed; hence it is impossible to evaluate whether or not the postponed care was related to an objective need for care (was it necessary or acute?), for how long care was postponed (forgone care or delayed until the receipt of income in the next month?), and whether the postponement is the result of spending money on basic necessities (food, utilities, rent) or on other (non-necessary) consumption.
Dimension	Accessibility; Equity
Related indicators	Out-of-pocket payments on health (% of current expenditure on health) (A-2), Proportion of households with (further) impoverishing (EQ-4) and catastrophic (EQ-5) out of pocket payments.

2.2. Results

Figure 4 provides an overview of the incidence of unmet needs due to financial reasons in the population (red line) as well as for different subgroups of the population (blue bars) for the three years that were analysed. For a comprehensive analysis of self-reported unmet needs for medical care due to financial reasons, we refer the reader to KCE report 334.¹

The overall incidence of persons aged 16 and over in Belgium reporting unmet needs for medical examination due to financial reasons increased from 0.5% in 2008 to 1.7% in 2012 and 2.2% in 2016. There are important differences between subgroups in the population.

First, there is regional variation with an incidence above the average in Brussels and Wallonia and below the average in Flanders. Differences by age or sex are small.

Second, unmet needs for financial reasons prevail among individuals in a financially precarious situation, i.e. individuals with low income, on welfare

support, with severe material deprivation, in unemployment or inactivity. For example, the incidence among individuals in households at risk of poverty is 3 to 4 times higher than the population average. In 2016, the incidence reached 8.6%. Even more striking, about 1 in 9 individuals receiving welfare support and about 1 in 4 individuals with severe material deprivation indicate to have unmet needs for medical care due to financial reasons in 2016.

In KCE report 334, it was found that in 2016 95% of the individuals with unmet needs for medical care perceive an **inability to cope with unexpected expenses**, compared to about 22% in the subgroup without unmet needs.¹ The (perceived) inability to cope with unexpected expenses is (at least partially) related to the activity status of the individuals. The majority of the individuals with unmet needs for medical care are **at working age, but without paid work**. The incidence of unmet needs for medical care is high among individuals in households with very low working intensity, i.e. where the household members at working age spend less than 20% of their (combined) available time on paid work.



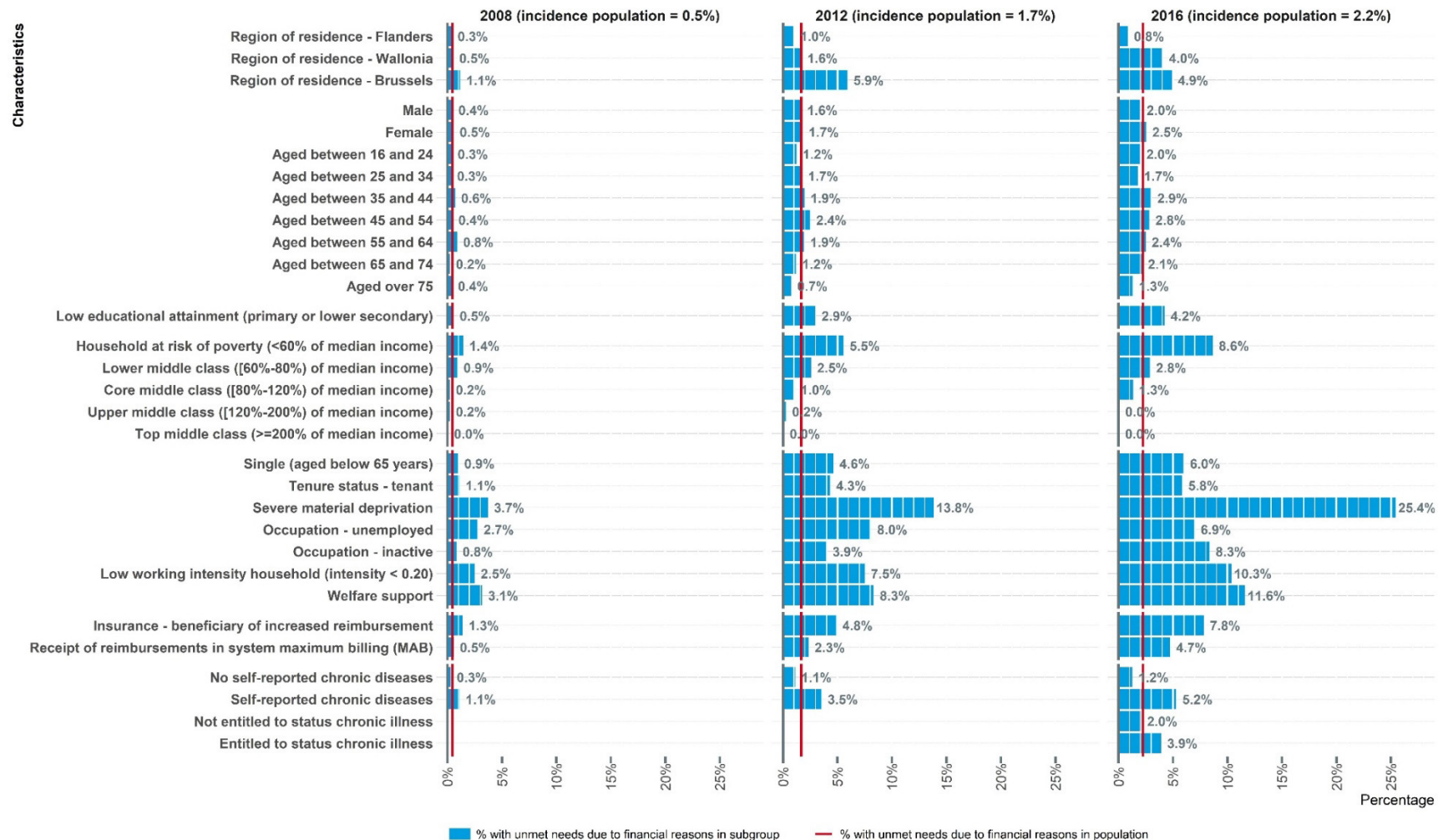
Third, important protective measures such as the system of maximum billing (MAB) and increased reimbursements status do not prevent postponement of care. Above average incidence rates are found among individuals entitled to increased reimbursement and among individuals living in household benefitting from the MAB.

Higher incidence of unmet needs among individuals with chronic condition

Fourth, the incidence of unmet needs is substantially higher among individuals who report to suffer from a chronic illness. As can be seen in the bottom four lines in Figure 4, the incidence increases from 1.1% in 2008 to 3.5% in 2012 and 5.2% among persons with a self-reported chronic condition relative to 0.3% in 2008, 1.1% in 2012 and 1.2% in 2016 among those without a self-reported chronic condition. When considering the chronic illness status as indicator for a chronic condition, we find that the incidence is nearly twice as high in 2016 among those entitled to the status (3.9%) relative to those not entitled (2.0%).



Figure 4 – Share of individuals with self-reported unmet needs for medical examination due to financial reasons in Belgium for various subgroups (years 2008, 2012 and 2016)





Key points

- **The overall incidence of persons aged 16 and over in Belgium reporting unmet needs for medical examination due to financial reasons increased from 0.5% in 2008 to 1.7% in 2012 and 2.2% in 2016. There are important differences between subgroups in the population.**
- **Unmet needs are substantially higher among individuals who report to suffer from a chronic illness. The incidence increases from 1.1% in 2008 to 3.5% in 2012 and 5.2% among those with a self-reported chronic condition relative to 0.3% in 2008, 1.1% in 2012 and 1.2% in 2016 among those without self-reported chronic condition. When considering the chronic illness status as indicator for a chronic condition, we find that the incidence is nearly twice as high in 2016 among those entitled to the status (3.9%) relative to those not entitled (2.0%).**

References

1. Bouckaert N, Maertens de Noordhout C, Van de Voorde C. Health System Performance Assessment: how equitable is the Belgian health system? Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2020. KCE Reports (334) Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_334_Equity_Belgian_health_system_Report.pdf
2. Eurostat. EU-SILC - Description of Target Variables: Cross-sectional and Longitudinal. 2013.
3. Eurostat. Methodological guidelines and description of EU-SILC target variables. 2017.
4. Eurostat. Statistics explained. Unmet health care needs statistics [Web page]. 2021 [cited 10/08/2021]. Available from: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Unmet_health_care_needs_statistics#Unmet_needs_for_medical_examination_or_treatment
5. Devos C, Cordon A, Lefèvre M, Obyn C, Renard F, Bouckaert N, et al. Performance of the Belgian health system – Report 2019. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2019 04/2019. KCE Reports 313 Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_313C_Performance_Belgian_health_system_Report.pdf



3. PROPORTION OF LOW-CARE RENAL DIALYSIS (%) (E-5)

3.1. Documentation sheet

Description	Proportion of low-care renal dialysis for general hospitals
Calculation	Numerator: (autodialysis lump sums + nocturnal haemodialysis lump sums + home haemodialysis lump sums + self-care haemodialysis lump sums)/156 + peritoneal lump sums/days in the current year + kidney transplant for the current year/2 + kidney transplant for the year before + kidney transplant for the penultimate year Denominator: (autodialysis lump sums + night haemodialysis lump sums + home haemodialysis lump sums + self-care haemodialysis lump sums)/156 + peritoneal lump sums/days in the current year + kidney transplant for the current year/2 + kidney transplant for the year before + kidney transplant for the penultimate year + haemodialysis lump sums at the hospital site/156
Rationale	Haemodialysis in hospital setting is expensive ("high-care dialysis"), while alternatives such as haemodialysis in a satellite centre or at home, nocturnal or peritoneal dialysis are less costly ("low-care dialysis"). Since most patients can be treated with low-care dialysis at least initially, general hospitals have been asked since 2018 to reach at least 40% of "low-care" dialysis (dialysis financing agreement [1]). Low-care dialysis, for the eligible patients, also allows for a more flexible schedule than in a high-care setting.
Data source	RIZIV – INAMI data from the dialysis financing agreement IMA – AIM databases
Technical definitions	Selection of the following RIZIV – INAMI billing codes (nomenclature): - autodialysis lump sums: 767756, 767782, 767804 - night haemodialysis lump sums: 767616 - home haemodialysis lump sums: 767734 - self-care haemodialysis lump sums: 767955, 767966 - peritoneal lump sums : 767815, 767826, 767830, 767841 - haemodialysis lump sums at the hospital site: 767594, 767631, 767664, 767686, 767701, 767723 - kidney transplant: 318010, 318021
Limitations	Administrative data; analysis limited to the hospitals having signed the agreement over dialysis (n=52).
International comparability	None
Dimension	Efficiency, patient-oriented care
Related indicators	performance -
Keywords	Renal dialysis

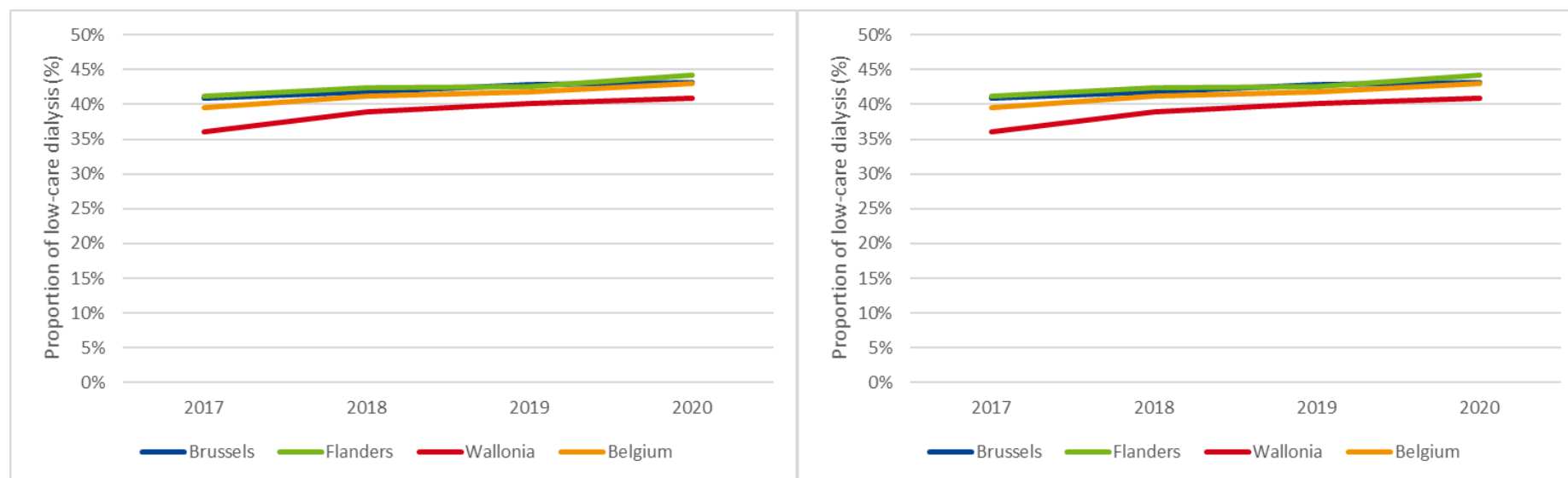


3.2. Results

Acute hospitals having signed the dialysis financing agreement (n=52) have a target of 40% low-care dialysis, effective in 2018. The period studied (2017-2020) includes the year before as point of comparison. Results show that as whole (when calculating the proportion for all services in all hospitals in the

agreement), Belgium reached the target in 2018, Brussels and Flanders had already a proportion above 40% in 2017, and Wallonia reached the target in 2019 (Figure 5, left); the most recent figures (2020) shows Belgium reaching 43% and the regions ranging from 44.3% for Flanders to 41.0% for Wallonia, while Brussels is in between with 43.2% (Table 1).

Figure 5 – Proportion of low-care dialysis by region and by hospitals in a region per year



Source : RIZIV – INAMI


Table 1 – Proportion of low-care dialysis per region

Region	2017	2018	2019	2020
Brussels	40.9%	41.8%	42.8%	43.2%
Flanders	41.2%	42.5%	42.5%	44.3%
Wallonia	36.0%	38.9%	40.1%	41.0%
Belgium	39.5%	41.2%	41.8%	43.0%

Source : RIZIV – INAMI

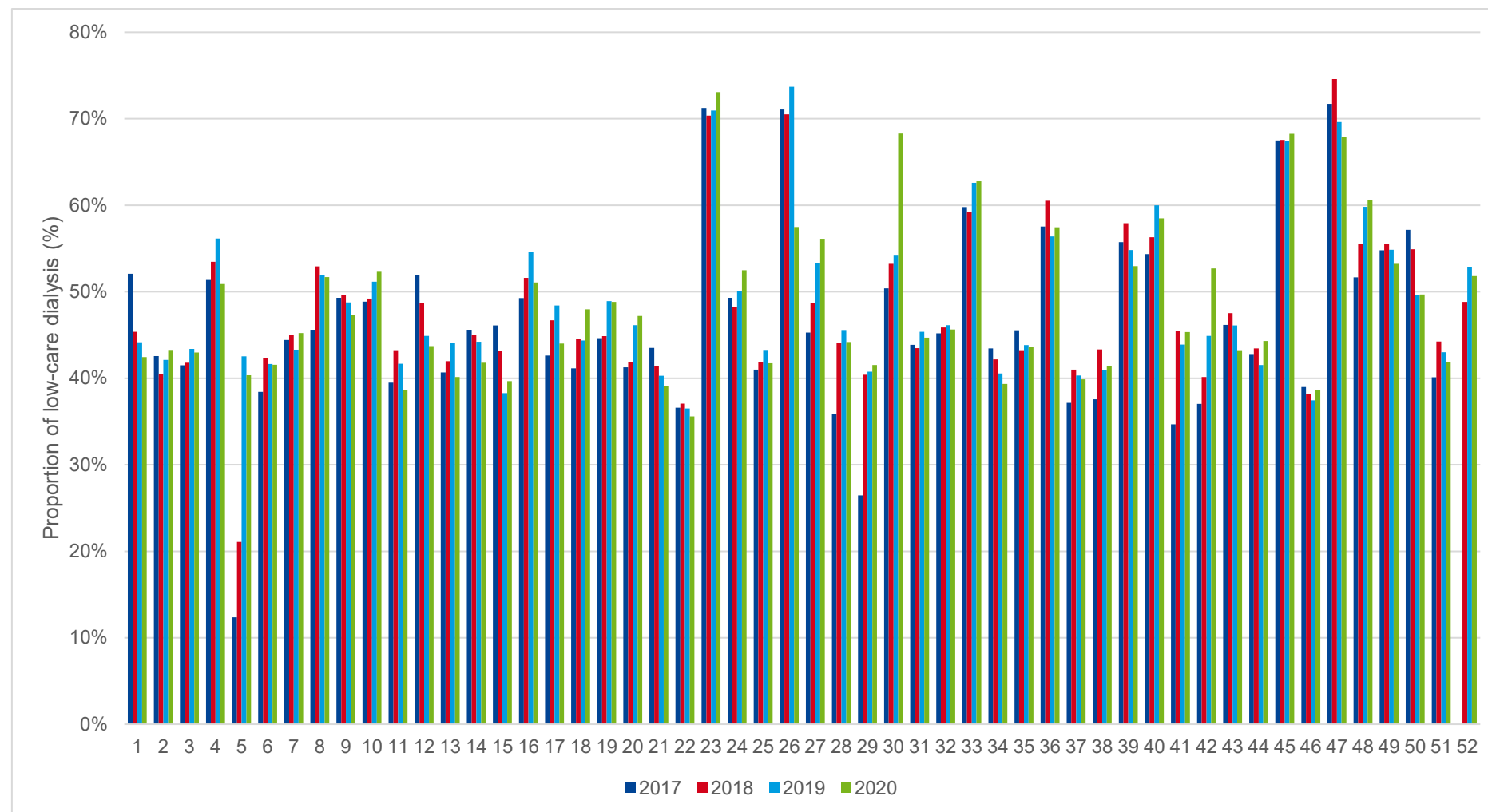
At the hospital level, there were 52 hospitals performing dialysis between 2017 and 2020, most of them (37) having a least 40% of low-care dialysis each year over the period (Figure 6).

Table 2 shows the analysis by hospital with a calculation of the proportion of hospitals having reached the target of 40% of low-care dialysis for Belgium, by region and by type hospital. In 2020, the proportion of hospital reaching the target in 86.5%; for the regions, it is 88.9% in Brussels, 75.0% in Flanders and 100.0% in Wallonia. The evolution is shown in Figure 1 (right): after a rise from 2017 to 2019, the proportions falls in 2020, this might be due to stress on the healthcare system due to Covid-19 (figures from the coming 2-3 will confirm or deny this hypothesis). When looking at the type of hospital in 2020, 85.7% of the academic hospitals had reached the target while the proportion reaches 91.7% for the non-academic general hospitals with academic character and the general hospital reaching 84.8%.

Table 2 – Proportion of hospitals with 40% of low-care dialyses, by hospital type

Hospitals with at least 40% of low care dialysis	2017			2018			2019			2020		
	total	n	%	total	n	%	total	n	%	total	n	%
Belgium	51	40	78.4%	52	49	94.2%	52	49	94.2%	52	45	86.5%
Region												
Brussels	9	9	100.0%	9	9	100.0%	9	8	88.9%	9	8	88.9%
Flanders	24	18	75.0%	24	22	91.7%	22	2	9.1%	24	18	75.0%
Wallonia	18	13	72.2%	19	18	94.7%	19	19	100.0%	19	19	100.0%
Hospital type												
Academic hospitals	7	7	100.0%	7	7	100.0%	7	7	100.0%	7	6	85.7%
Non-academic general hospitals with academic character	11	9	81.8%	12	12	100.0%	12	12	100.0%	12	11	91.7%
General hospital	33	24	72.7%	33	30	90.9%	33	30	90.9%	33	28	84.8%

Source: RIZIV – INAMI

**Figure 6 – Proportion of low-care dialyses per hospital (n=52) per year (2017-2020)**

Source: RIZIV – INAMI



Key points

- - Since 2018, hospitals who have signed the agreement on the financing of dialysis are requested to reach a rate of at least 40% of low-care dialysis (RIZIV – INAMI convention);
- - This rate is reached at the Belgian level and at the regional level, but not all hospitals manage to reach it individually. In 2020, among the 52 hospitals in the agreement, 45 have reached the required rate (8 out of 9 in Brussels, 18 out of 24 in Flanders and 19 out of 19 in Wallonia) vs 7 that have not (1 in Brussels, 6 in Flanders and 0 in Wallonia); by type of hospital, the results for 2020 are 28 general hospitals (out of 33), 11 Non-academic general hospitals with academic character (out of 12) and 6 academic hospitals (out of 7)

References

- [1] RIZIV – INAMI, agreement on the financing of dialysis, http://www.inami.fgov.be/SiteCollectionDocuments/convention_finance_dialyse.docx



4. PROPORTION OF HOUSEHOLDS WITH (FURTHER) IMPOVERISHING (EQ-4) AND CATASTROPHIC (EQ-5) OUT OF POCKET PAYMENTS

4.1. Documentation sheet

Description	Proportion of households with (further) impoverishing (EQ-4) and catastrophic (EQ-5) out of pocket payments.
Calculation	See technical definitions section below.
Rationale	There is a near consensus that the financial burden of healthcare payments should not disproportionately rest on those who seek healthcare. The idea to decouple payments from health risks or the receipt of healthcare does not provide guidance on how payments should be allocated. However, it is generally presumed that payments should be determined by ability or capacity to pay (vertical equity principle). A rationale to relate payments for healthcare to capacity to pay is that one does not want that these payments hinder people's ability to seek healthcare when ill. Another rationale is that one wants to avoid that payments for healthcare reduce households' potential to consume other necessary goods and services such as food, housing and utilities. The incidence of catastrophic and impoverishing out-of-pocket payments have been used to evaluate the relation between healthcare spending and ability or capacity to pay.¹ For reasons of international comparability, we follow the methodology proposed by the World Health Organization (WHO) European Region in its series on financial hardship (detailed in the technical definition).² This is a capacity-to-pay approach that assumes that households need to spend part of their resources to meet basic needs, such as food, housing and utilities. The underlying idea to implement a correction for basic needs is that poor households devote relatively more of their resources to meeting basic needs and may face a trade-off between consuming basic needs and healthcare. Only after meeting basic needs, resources are available to spend on healthcare. The household's capacity-to-pay (for healthcare) is defined as the total household expenses minus a standard amount to cover basic needs. The standard amount is calculated as the average amount spent on food, housing (rent) and utilities (electricity, water, fuel etc.) by households between the 25th and 35th percentiles of total household expenses distribution, adjusted for household composition by the equivalence scale of the Organisation for Economic Co-operation and Development (OECD). The amount of basic need expenses is also used as poverty line or basic needs line. If the total household expenses fall below this poverty line, the household is considered poor and its capacity-to-pay is negative. Out-of-pocket payments are considered impoverishing when the household is not poor, but has out-of-pocket payments that exceed the household's capacity-to-pay. In that case, total household expenses net of healthcare consumption are below the poverty line. Out-of-pocket payments of poor households are considered further impoverishing. Out-of-pocket payments are considered catastrophic when they exceed 40% of the household's capacity-to-pay. Poor households (which have a negative capacity to pay, see above) with [without] out-of-pocket payments are considered [not] to incur catastrophic payments. Hence out-of-pocket payments that are (further) impoverishing are always catastrophic, but catastrophic out-of-pocket payments are not necessarily impoverishing.



Data source

Data from the European Union Statistics on Income and Living Conditions (EU-SILC) collected in 2008, 2012 and 2016 coupled with Sickness fund data from the InterMutualistic Agency (IMA-AIM – “*InterMutualistisch Agentschap*”/ “*Agence InterMutualiste*”).

The **EU-SILC microdata** are the reference source for measuring socioeconomic disparities in Belgium (and Europe). The Belgian data are collected annually by Statistics Belgium. The EU-SILC data contain rich individual and household information for a representative sample of the population residing in Belgium (about 11 000 to 12 000 individuals in about 6 000 households). Detailed, self-reported information is recorded amongst others on education level, activity status, various income sources, housing, possession of goods, wealth, age, sex, municipality of residence, family situation, neighbourhood characteristics, and health status.

An additional advantage is that the EUROMOD microsimulation model runs on EU-SILC microdata.³ Using detailed information on the Belgian tax system, EUROMOD simulates personal income taxes and indirect taxes paid by the household for a chosen year.^{4, 5} The EUROMOD model adds consumption profiles to the EU-SILC through an imputation procedure using data from the Household Budget Survey. For more detail on the imputation procedure, we refer the interested reader to De Agostino et al. (2017)⁶ and Decoster et al. (2014)⁷. Consumption expenditures in different categories (e.g. food, utilities, rent, etc.) are imputed for each household.

The **IMA-AIM microdata** are detailed and exhaustive administrative data on the use and payments – further subdivided in co-payments, supplements and expenditures chargeable to the public health insurance (RIZIV-INAMI) – of all care covered by the public health insurance (procedures, services, admissions, prescribed medication, etc.). The data provide information on financial protection mechanisms, such as increased reimbursement, the maximum billing system and the chronic illness status. The out-of-pocket payments account for the protection mechanisms in place.

Technical definitions

For detailed information on all selected variables from the EU-SILC/IMA-AIM database and the calculation of catastrophic and (further) impoverishing out-of-pocket payments, we refer to section 3.2.2 of the Supplement of KCE report 334.⁸

Key information in the data:

1) Information on household capacity-to-pay. Typically, *household consumption expenditures* are used as proxy for household resources. Household consumption is not observed in the data, but imputed from the EUROMOD microsimulation model (see data source) in broad categories such as food, rent, utilities, clothing etc. *Household income* is used as an alternative proxy for household resources.

2) Information on out-of-pocket payments (OOPs): out-of-pocket payments are defined as the sum of co-payments and supplements accounting for reimbursements from the maximum billing system.

3) Information on relevant groups in the population, e.g.

- **Quintiles of equivalized household income or consumption expenditure.** The OECD household equivalence scale is used to account for economies of scale in household consumption based on the number of adults and children included in the household. The equivalence scale is calculated as follows:

$$eqsize_h = 1 + 0.7 * (number\ of\ adults - 1) + 0.5 * (number\ of\ children\ under\ 13\ years\ of\ age)$$

- **Individuals entitled to the status for persons with a chronic illness.** Entitlement is observed through IMA-AIM variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the
-



individual has an entitlement. Households with at least one member entitled to the chronic illness status, are defined as households entitled to the status.

- **Individuals self-reporting to suffer from chronic (long-standing) illness or condition.** This is identified through EU-SILC variable PH020 equal to “yes”. Households with at least one member with a self-reported chronic condition, are defined as households with a self-reported chronic condition (see also indicator CHR-1)

Calculation of catastrophic and impoverishing health expenditures

To estimate the catastrophic and impoverishing health expenditures, we followed four main steps of the methodology proposed by the WHO European Region in its series on financial protection:² i.e. estimate of 1) the basic needs lines, 2) the basic needs expenditures levels, 3) the capacity to pay and, 4) the incidence of impoverishing and catastrophic OOPs. The methodology of the WHO European Region was chosen as it allows for a comparison with other countries. A detailed description of the methodology can be found in WHO (2016).⁹

Step 1: basic needs lines.

A basic needs line is calculated as the average amount spent on food, housing (rent) and utilities (water, electricity and fuel used for cooking and heating) by households with equivalized total household resources (i.e. household income or household consumption expenditures) between the sample weighted 25th and 35th percentile of the distribution, which report any spending in the concerned category, rescaled using OECD equivalence scales. These households are selected based on the assumption that they are able to meet, but not necessarily exceed, basic needs for food, housing and utilities.

Step 2: expenses for basic needs.

The household expenses for basic needs are calculated by multiplying the basic needs lines with the equivalized household size.

Step 3: capacity to pay.

A household's capacity to pay for healthcare is defined as household resources (i.e. household income or household consumption expenditures) minus basic needs expenses. When total household resources are insufficient to cover basic needs expenses, the household is considered poor.

Step 4: incidence of impoverishing and catastrophic OOPs.

To calculate the **incidence of (further) impoverishing out-of-pocket payments**, the households are divided into 5 mutually exclusive categories based on their level of out-of-pocket payments in relation to the poverty line.

1. *Households without out-of-pocket payments*, irrespective of the household financial resources.
 2. *Households not at risk of impoverishment*: non-poor households with out-of-pocket payments. When OOPs are deducted from the total household resources, the remaining financial resources are above 120% of the poverty line, implying that the household has enough means to cover basic needs.
 3. *Households at risk of impoverishment*: non-poor households with out-of-pocket payments. When OOPs are deducted from the total household resources, the remaining financial resources are between the poverty line and 120% of the poverty line, implying that the household has enough means to cover basic needs, but with (very) limited financial leeway.
 4. *Impoverished households*: non-poor households with out-of-pocket payments. When OOPs are deducted from the total household resources, the remaining financial resources are below the poverty line, implying that the household has not enough means to cover both basic needs and healthcare.
-



5. *Further impoverished households*: poor households with out-of-pocket payments. The household has not enough means to cover basic needs and OOPs make the financial situation even more precarious.

The **incidence of catastrophic payments** can be calculated using the household's OOPs in relation to its capacity to pay. Out-of-pocket payments are considered catastrophic when they exceed 40% of the household's capacity to pay. Hence, households that are (further) impoverished always experience catastrophic out-of-pocket payments.

Statistical analysis

The significance of differences in incidence or risk between subgroups is assessed by post-hoc pairwise comparisons through multiple linear regression models. The survey STATA package [svy] was applied to account for the survey design characteristics (sampling weight, cluster sampling, stratification) of the EU-SILC/IMA-AIM databases to better estimate the standard errors.¹⁰ A p-value below 0.05 is considered as significant.

Limitations	There is no registration of healthcare that is not covered by the public health insurance or used by residents not insured by the public health insurance. Some vulnerable population groups are not included in the survey sample: people residing in collective facilities such as the elderly and prisoners, the homeless or refugees. It is known from other studies that these groups experience higher than average healthcare needs or difficulties in accessing healthcare.¹¹⁻¹⁴
International comparability	Based on individual level data. At the international level, no data are available that provide a distinction by chronic care patients
Dimension	Equity, accessibility
Related performance indicators	/
Keywords	Health Services Accessibility, Health expenditures



4.2. Results

4.2.1. Households with (further) impoverishing OOPs (EQ-4)

Figure 7 and Table 3 provide information on the proportion of households that are (further) impoverished and at risk of impoverishment after OOPs using total household consumption expenditures as proxy for the household financial resources. Not only the overall incidence is reported (years 2008, 2012 and 2016), but also the incidence for households with at least one member entitled to the chronic illness status (in 2016) and the incidence for households with at least one member with a self-reported chronic condition (years 2008, 2012 and 2016).

The results indicate that the overall incidence of being impoverished or further impoverished remained stable between 2008 and 2016 and that there is a decrease in the proportion of households without out-of-pocket payments.

Higher probability of being further impoverished or at risk of impoverishment when self-reporting a chronic condition

When examining the subdivision in incidence between households with no member with a self-reported chronic condition and households with at least one member with a self-reported chronic condition, the latter group has in 2016 a significant higher risk of being further impoverished (post-hoc comparison, $p=0.007$) or at risk of impoverishment (post-hoc comparison, $p<0.001$). The incidence of being impoverished is also higher among households with at least one member reporting a chronic condition, but given the low percentages, the effect is not significant. The results further indicate, not surprisingly, a significant lower share of households without

OOP among households with at least one member reporting a chronic condition (post-hoc comparison, $p<0.001$).

No higher probability of being further impoverished when entitled to the chronic illness status

When examining the subdivision in incidence between households with no member entitled to the status for persons with a chronic illness and households with at least one member entitled to the chronic illness status, we observe no significant difference in the incidence of being impoverished or further impoverished. The difference in incidence of being at risk of impoverishment (post-hoc comparison, $p=0.017$) and having out-of-pocket payments (post-hoc comparison, $p<0.001$) is outspoken. All households with at least one member entitled to the chronic illness status have out-of-pocket payments. The share of households without OOP has an important effect on the incidence of catastrophic and impoverishing OOPs as households without OOPs cannot be (further) impoverished and cannot have catastrophic payments.

The impact of a chronic condition on the incidence of (further) impoverishment is comparable when using income as proxy for household financial resources

Figure 8 and Table 4 provide the same information as Figure 7 and Table 3, but use household disposable income as proxy for the household financial resources. The effects are somewhat more pronounced when using household income as a proxy for household resources and in particular the difference in incidence of being (further) impoverished between households with and without a member with a self-reported chronic condition gains in magnitude and significance.



Figure 7 – Proportion of households further impoverished, impoverished, at risk of impoverishment and without out-of-pocket payments (OOPs) (2008-2016) with consumption as proxy for household resources. Overall incidence and subdivided by chronic condition.

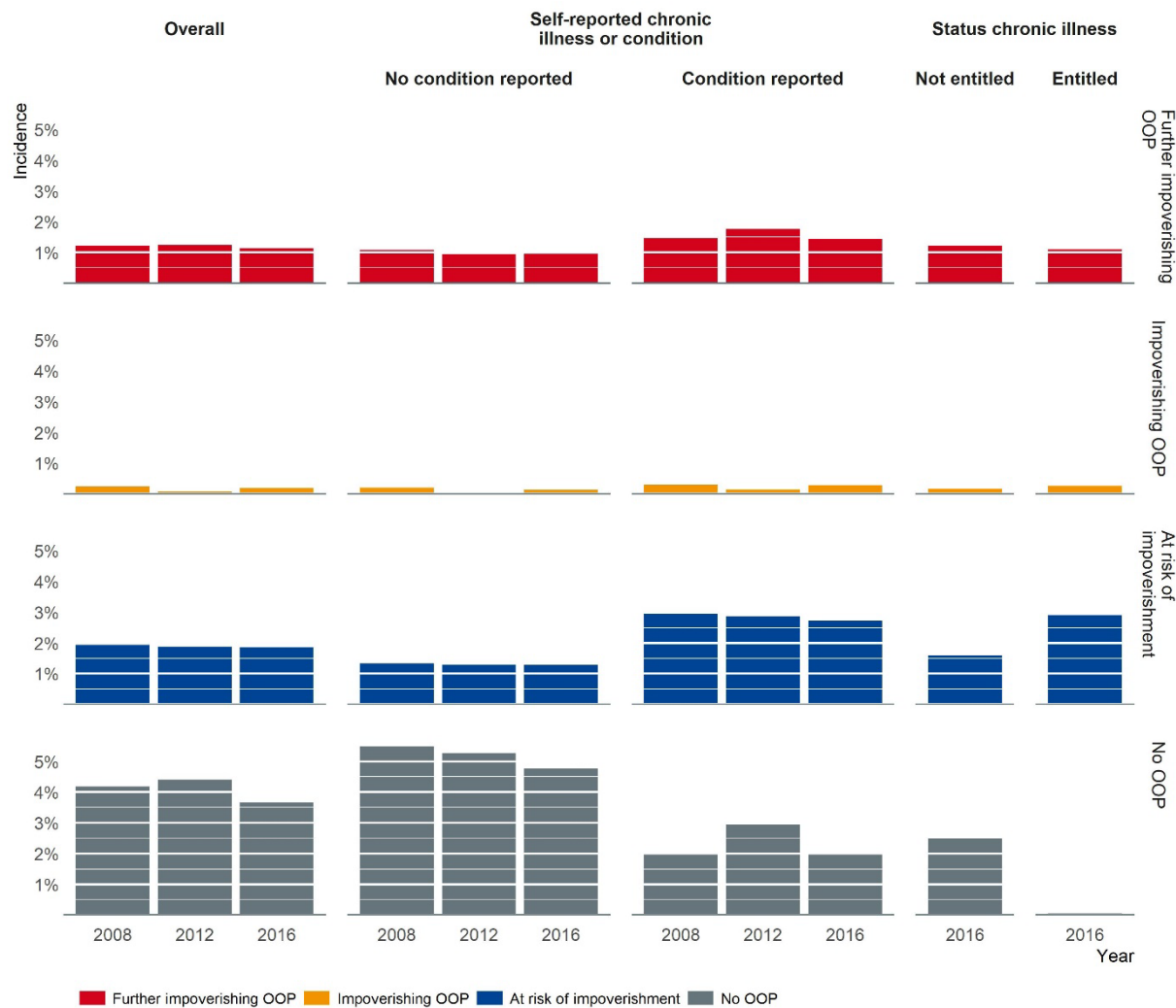




Figure 8 – Proportion of households further impoverished, impoverished, at risk of impoverishment and without out-of-pocket payments (OOPs) (2008-2016) with income as proxy for household resources. Overall incidence and subdivided by chronic condition.

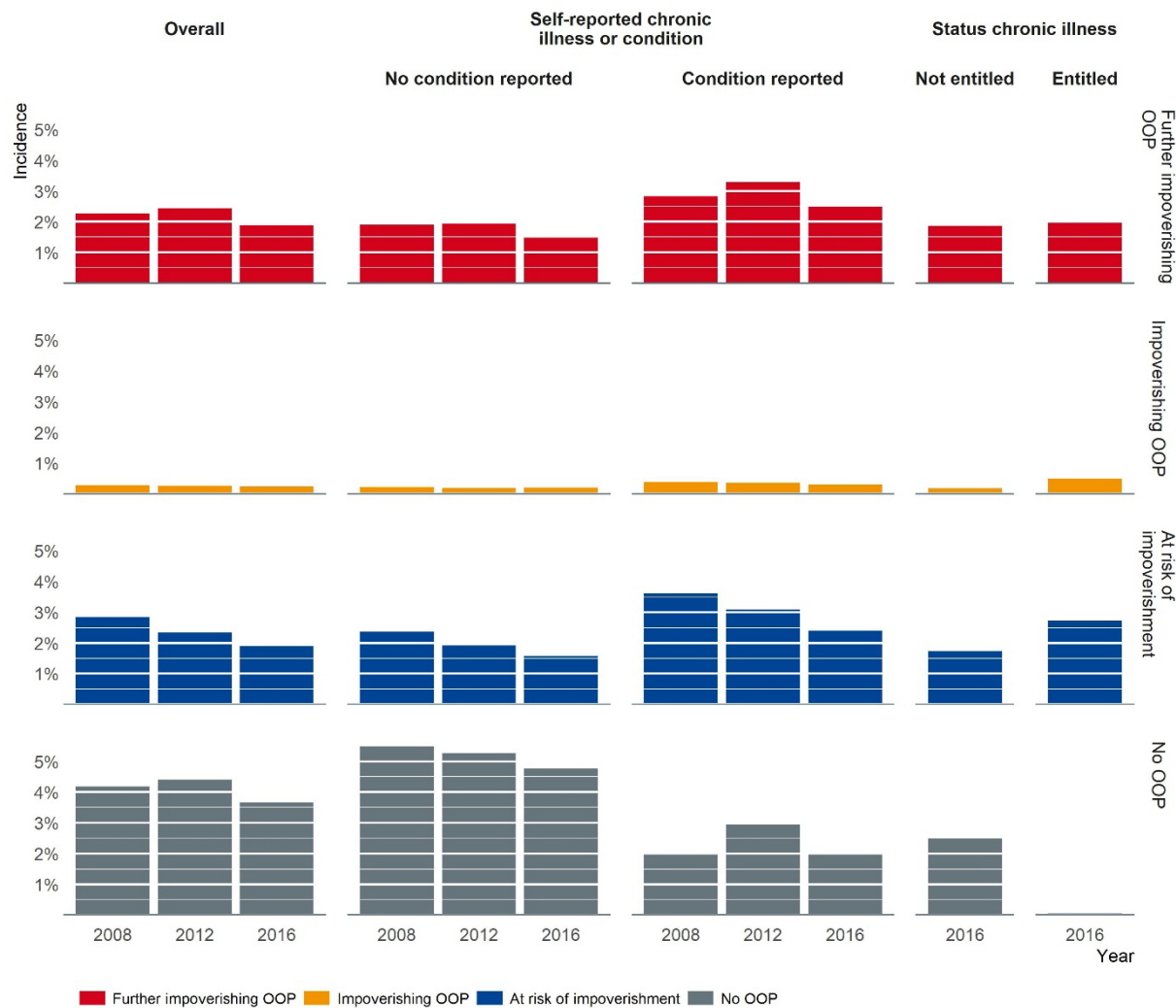




Table 3 – Proportion of households further impoverished, impoverished, at risk of impoverishment, not at risk of impoverishment and without out-of-pocket payments (OOPs) (2008-2016) with consumption as proxy for household resources. Overall incidence and subdivided by chronic condition.

Overall incidence (value [95% confidence interval])	2008		2012		2016	
Further impoverished	1.2% [0.9%-1.5%]		1.3% [0.9%-1.6%]		1.1% [0.9%-1.4%]	
Impoverished	0.2% [0.1%-0.4%]		0.1% [0.0%-0.2%]		0.2% [0.1%-0.3%]	
At-risk of impoverishment	1.9% [1.6%-2.3%]		1.9% [1.5%-2.3%]		1.9% [1.5%-2.2%]	
Not at-risk of impoverishment	92.4% [91.7%-93.1%]		92.4% [91.6%-93.2%]		93.1% [92.4%-93.8%]	
No OOPs	4.2% [3.6%-4.7%]		4.4% [3.7%-5.1%]		3.7% [3.1%-4.2%]	
Incidence by self-reported chronic condition (value [95% confidence interval])	2008		2012		2016	
	No chronic condition	Chronic condition	No chronic condition	Chronic condition	No chronic condition	Chronic condition
Further impoverished (p=0.007)*	1.1% [0.7%-1.4%]	1.5% [0.9%-2.0%]	0.9% [0.6%-1.2%]	1.8% [1.1%-2.4%]	1.0% [0.6%-1.3%]	1.4% [0.9%-2.0%]
Impoverished (p=0.113)*	0.2% [0.0%-0.4%]	0.3% [0.1%-0.5%]	0.0% [0.0%-0.1%]	0.1% [-0.1%-0.3%]	0.1% [0.0%-0.3%]	0.3% [0.1%-0.5%]
At-risk of impoverishment (p<0.001)*	1.3% [0.9%-1.7%]	2.9% [2.2%-3.7%]	1.3% [0.9%-1.7%]	2.9% [2.0%-3.7%]	1.3% [0.9%-1.7%]	2.7% [2.0%-3.5%]
Not at-risk of impoverishment (p=0.169)*	91.9% [90.9%-92.9%]	93.3% [92.2%-94.3%]	92.5% [91.4%-93.5%]	92.3% [90.9%-93.7%]	92.9% [92.0%-93.8%]	93.6% [92.4%-94.7%]
No OOPs (p<0.001)*	5.5% [4.7%-6.3%]	2.0% [1.4%-2.6%]	5.3% [4.4%-6.2%]	2.9% [1.9%-3.9%]	4.8% [4.0%-5.5%]	2.0% [1.3%-2.7%]
Incidence by chronic illness status (value [95% confidence interval])					2016	
					Not entitled	Entitled
Further impoverished (p=0.743)*					1.2% [0.9%-1.6%]	1.1% [0.4%-1.8%]
Impoverished (p=0.473)*					0.2% [0.0%-0.3%]	0.3% [0.0%-0.5%]
At-risk of impoverishment (p=0.017)*					1.6% [1.2%-2.0%]	2.9% [1.8%-4.0%]
Not at-risk of impoverishment (p=0.125)*					94.5% [93.8%-95.3%]	95.7% [94.4%-97.0%]
No OOPs (p<0.001)*					2.5% [2.0%-3.0%]	0.0% [0.0%-0.1%]

Data source: EU-SILC/IMA-AIM 2008, 2012, 2016.

* p-values are obtained from a post-hoc pairwise comparison (chronic condition versus no chronic condition or entitled versus not entitled, correcting for time where possible) through multiple linear regression models.



Table 4 – Proportion of households further impoverished, impoverished, at risk of impoverishment, not at risk of impoverishment and without out-of-pocket payments (OOPs) (2008-2016) with income as proxy for household resources. Overall incidence and subdivided by chronic condition.

Overall incidence (value [95% confidence interval])	2008		2012		2016	
Further impoverished	2.3% [1.9%-2.6%]		2.4% [2.0%-2.9%]		1.9% [1.5%-2.3%]	
Impoverished	0.3% [0.1%-0.4%]		0.3% [0.1%-0.4%]		0.2% [0.1%-0.4%]	
At-risk of impoverishment	2.8% [2.4%-3.3%]		2.4% [1.9%-2.8%]		1.9% [1.5%-2.3%]	
Not at-risk of impoverishment	90.4% [89.6%-91.3%]		90.6% [89.7%-91.5%]		92.3% [91.6%-93.1%]	
No OOPs	4.2% [3.6%-4.7%]		4.4% [3.7%-5.1%]		3.7% [3.1%-4.2%]	
Incidence by self-reported chronic condition (value [95% confidence interval])	2008		2012		2016	
	No chronic condition	Chronic condition	No chronic condition	Chronic condition	No chronic condition	Chronic condition
Further impoverished (p<0.001)*	1.9% [1.4%-2.4%]	2.8% [2.1%-3.6%]	1.9% [1.4%-2.4%]	3.3% [2.5%-4.1%]	1.5% [1.1%-1.9%]	2.5% [1.8%-3.2%]
Impoverished (p=0.093)*	0.2% [0.0%-0.4%]	0.4% [0.1%-0.7%]	0.2% [0.0%-0.3%]	0.4% [0.1%-0.6%]	0.2% [0.1%-0.3%]	0.3% [0.1%-0.5%]
At-risk of impoverishment (p<0.001)*	2.4% [1.8%-2.9%]	3.6% [2.8%-4.5%]	1.9% [1.4%-2.4%]	3.1% [2.3%-3.9%]	1.6% [1.2%-2.0%]	2.4% [1.7%-3.1%]
Not at-risk of impoverishment (p=0.353)*	90.0% [88.9%-91.1%]	91.1% [89.9%-92.4%]	90.7% [89.6%-91.8%]	90.3% [88.8%-91.8%]	92.0% [91.0%-92.9%]	92.8% [91.6%-94.0%]
No OOPs (p<0.001)*	5.5% [4.7%-6.3%]	2.0% [1.4%-2.6%]	5.3% [4.4%-6.2%]	2.9% [1.9%-3.9%]	4.8% [4.0%-5.5%]	2.0% [1.3%-2.7%]
Incidence by chronic illness status (value [95% confidence interval])	2016					
	Not entitled			Entitled		
Further impoverished (p=0.802)*	1.9% [1.5%-2.3%]			2.0% [1.1%-2.9%]		
Impoverished (p=0.115)*	0.2% [0.1%-0.3%]			0.5% [0.1%-0.9%]		
At-risk of impoverishment (p=0.107)*	1.7% [1.3%-2.2%]			2.7% [1.6%-3.8%]		
Not at-risk of impoverishment (p=0.250)*	93.7% [93.0%-94.5%]			94.7% [93.3%-96.2%]		
No OOPs (p<0.001)*	2.5% [2.0%-3.0%]			0.0% [0.0%-0.1%]		

Data source: EU-SILC/IMA-AIM 2008, 2012, 2016.

* p-values are obtained from a post-hoc pairwise comparison (chronic condition versus no chronic condition or entitled versus not entitled, correcting for time where possible) through multiple linear regression models.



4.2.2. Households with catastrophic OOPs (EQ-5)

Figure 9 and Table 5 indicate that about 2% of the households experienced catastrophic OOPs over the period 2008-2016 when using consumption expenditures as proxy for household income.

Incidence of catastrophic OOPs almost twice as high among households with a self-reported chronic condition

There is an important and significant difference in incidence between households with and without a member with a self-reported chronic condition. The incidence is almost twice as high among households with at least one member reporting a chronic condition relative to household where nobody reported a chronic condition (post-hoc comparison, $p < 0.001$). In 2016, the proportion of households with catastrophic OOPs amounted to 1.4% and 2.9% when, respectively, no or at least one member reported a chronic condition (using EU-SILC chronic definition and consumption expenditures as proxy, see Table 5).

Similar gap in incidence found for entitlement for the chronic illness status

A similar gap is observed between households with and without members entitled to the chronic illness status, with an incidence of respectively 1.7% and 3.3% ($p = 0.007$).

Incidence in catastrophic OOP is markedly higher when using income as proxy for household financial resources

The results in Figure 10 and Table 6 provide the same information as Figure 9 and Table 5, but use household disposable income as proxy for the household financial resources. The results show that the incidence of catastrophic OOP is higher (overall incidence between 2.7% and 3.4%). The significant differences observed between households with and without a member with a self-reported chronic condition and between households with and without members entitled to the chronic illness status remain.

Figure 9 – Proportion of households with catastrophic out-of-pocket payments (OOPs) (2008-2016) with consumption as proxy for household resources. Overall incidence and subdivided by chronic condition.

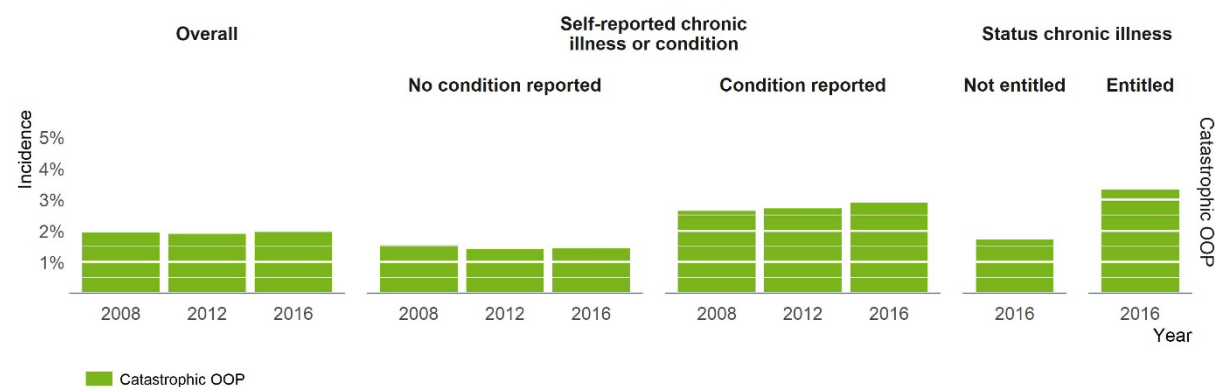




Figure 10 – Proportion of households with catastrophic out-of-pocket payments (OOPs) (2008-2016) with income as proxy for household resources. Overall incidence and subdivided by chronic condition.

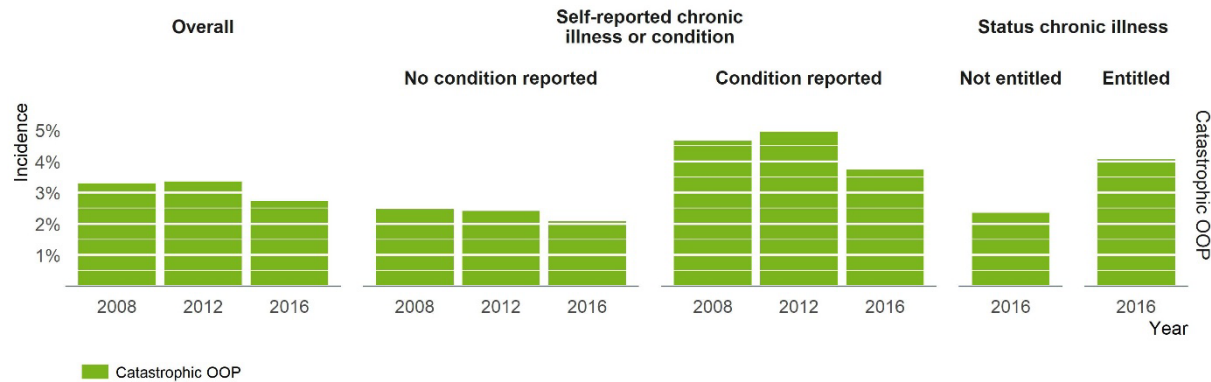


Table 5 – Proportion of households with catastrophic out-of-pocket payments (OOPs) (2008-2016) with consumption expenditures as proxy for household resources. Overall incidence and subdivided by chronic condition.

Overall incidence (value [95% confidence interval])	2008		2012		2016	
Catastrophic OOPs	1.9% [1.6%-2.3%]		1.9% [1.5%-2.3%]		2.0% [1.6%-2.4%]	
Incidence by self-reported chronic condition (value [95% confidence interval])	2008		2012		2016	
	No chronic condition	Chronic condition	No chronic condition	Chronic condition	No chronic condition	Chronic condition
Catastrophic OOPs (p<0.001)*	1.5% [1.1%-2.0%]	2.6% [2.0%-3.3%]	1.4% [1.0%-1.8%]	2.7% [1.9%-3.5%]	1.4% [1.0%-1.8%]	2.9% [2.1%-3.7%]
Incidence by chronic illness status (value [95% confidence interval])					2016	
					Not entitled	Entitled
Catastrophic OOPs (p=0.007)*					1.7% [1.3%-2.1%]	3.3% [2.2%-4.5%]

Data source: EU-SILC/IMA-AIM 2008, 2012, 2016

* p-values are obtained from a post-hoc pairwise comparison (chronic condition versus no chronic condition or entitled versus not entitled, correcting for time where possible) through multiple linear regression models.



Table 6 – Proportion of households with catastrophic out-of-pocket payments (OOPs) (2008-2016) with income as proxy for household resources. Overall incidence and subdivided by chronic condition.

Overall incidence (value [95% confidence interval])	2008		2012		2016	
Catastrophic OOPs	3.3% [2.8%-3.8%]		3.4% [2.9%-3.9%]		2.7% [2.3%-3.2%]	
Incidence by self-reported chronic condition (value [95% confidence interval])	2008		2012		2016	
	No chronic condition	Chronic condition	No chronic condition	Chronic condition	No chronic condition	Chronic condition
Catastrophic OOPs (p<0.001)*	2.5% [1.9%-3.0%]	4.7% [3.8%-5.6%]	2.4% [1.9%-2.9%]	5.0% [4.0%-5.9%]	2.1% [1.6%-2.6%]	3.7% [2.9%-4.6%]
Incidence by chronic illness status (value [95% confidence interval])					2016	
					Not entitled	Entitled
Catastrophic OOPs (p=0.012)*					2.3% [1.9%-2.8%]	4.1% [2.8%-5.3%]

Data source: EU-SILC/IMA-AIM 2008, 2012, 2016

* p-values are obtained from a post-hoc pairwise comparison (chronic condition versus no chronic condition or entitled versus not entitled, correcting for time where possible) through multiple linear regression models.

Key points

- In 2016, 1.1% of households had to cope with further impoverishing out-of-pocket payments, 0.2% with impoverishing out-of-pocket payments and 2.0% experienced catastrophic out-of-pocket payments when using consumption expenditures as proxy for household resources. The fraction is higher when using income as proxy for household resources, at 1.9%, 0.2% and 2.7%, respectively.
- There are significant differences between households with and without a member with a self-reported chronic condition (EU-SILC chronic definition). In the former group there is a higher proportion of households that are further impoverished or at risk of impoverishment and a lower proportion of households without out-of-pocket payments. The incidence of households experiencing catastrophic out-of-pocket payments is twice as

high among households with a member reporting a chronic condition.

- There are significant differences between households with and without a member entitled to the chronic illness status (IMA-AIM chronic definition). In the former group there is a higher proportion of households that are at risk of impoverishment. Moreover, all households with at least one member entitled to the chronic illness status have out-of-pocket payments. The incidence of households experiencing catastrophic out-of-pocket payments is twice as high among households with a member entitled to the chronic illness status.



References

1. Wagstaff A, Flores G, Smits M-F, Hsu J, Chepynoga K, Eozenou P. Progress on impoverishing health spending in 122 countries: a retrospective observational study. *The Lancet Global Health*. 2018;6(2):e180-e92.
2. Thomson S, Cylus J, Evetovits T. Can people afford to pay for health care? New evidence on financial protection in Europe. Copenhagen: WHO Regional Office for Europe; 2019. Available from: <https://apps.who.int/iris/bitstream/handle/10665/311654/9789289054058-eng.pdf?sequence=1&isAllowed=y>
3. EUROMOD. EUROMOD Modelling Conventions. Colchester: Institute for Social and Economic Research, University of Essex; 2018. EUROMOD Technical Note EMTN 1.1 Available from: <https://www.euromod.ac.uk/sites/default/files/working-papers/EMTN-1.1.pdf>
4. Hufkens T, Maes S, Van Cant L, Vanhille J, Vanheukelom T. EUROMOD Country report - Belgium 2014-2017. Colchester: Institute for Social and Economic Research, University of Essex; 2017. Available from: https://www.euromod.ac.uk/sites/default/files/country-reports/year8/Y8_CR_BE_Final.pdf
5. Hufkens T, Strengs T, Vanhille J, Vanheukelom T. EUROMOD country report - Belgium 2011-2016. 2017.
6. De Agostini P, Capéau B, Decoster A, Figari F, Kneeshaw J, Leventi C, et al. EUROMOD Extension to Indirect Taxation: Final Report,. Colchester: Institute for Social and Economic Research, University of Essex; 2017. EUROMOD Technical Note EMTN 3.0
7. Decoster A, Ochmann R, Spiritus K. Integrating VAT into EUROMOD. Leuven: KU Leuven; 2014. Flemish Discussion Paper DP32
8. Bouckaert N, Maertens de Noordhout C, Van de Voorde C. Health System Performance Assessment: how equitable is the Belgian health system? Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2020. KCE Reports (334) Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_334_Equity_Belgian_health_system_Report.pdf
9. WHO. A new approach to measuring financial protection in health systems. Technical guide for analysts. WHO Barcelona Office for Health Systems Strengthening; 2016.
10. Stata A. STATA SURVEY DATA REFERENCE MANUAL RELEASE 13. 2011.
11. Dauvrin M, Detollenaere J, De Laet C, Roberfroid D, Vinck I. Asylum seekers in Belgium: options for a more equitable access to health care. A stakeholder consultation. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2019. KCE Reports (319)
12. Mistiaen P, Dauvrin M, Eyssen M, Roberfroid D, San Miguel L, Vinck I. Health care in Belgian prisons. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2017 10/2017. KCE Reports 293 Available from: <https://kce.fgov.be/en/health-care-in-belgian-prisons>
13. Roberfroid D, Dauvrin M, Keygnaert I, Desomer A, Kerstens B, Camberlin C, et al. What health care for undocumented migrants in Belgium ? Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2015 22/12/2015. KCE Reports 257 Available from: http://kce.fgov.be/sites/default/files/page_documents/KCE_257_Health_care_Migrants_Scientific%20Report.pdf
14. RIZIV en Dokters van de Wereld. Groenboek over de toegankelijkheid van de gezondheidszorg in België. 2014.



5. PROPORTION OF PEOPLE WITH THE RIZIV-INAMI CHRONIC ILLNESS STATUS ACCORDING TO THEIR OFFICIAL HEALTH EXPENDITURE (CHR-1)

5.1. Documentation sheet

Description	Percentage of people with the chronic illness status (according to their official health expenditure)
Calculation	Numerator = Number of beneficiaries with a status of person with a chronic illness Denominator = total number of Belgian residents entitled to the compulsory health insurance (i.e. 99% of the Belgian population, see A-1 in the performance report 2019) The result is provided as a percentage (% of the population)
Rationale	Good health is a key aspect of people's well-being and enhances opportunities to participate in the labour market and to benefit from economic and employment growth. People with poor physical or mental health are less likely to work and more likely to be unemployed than people in better health. ¹ This might result in higher risk for financial problems, a lower level of general well-being, and social inequality. People suffering from a chronic disease often face high out-of-pocket healthcare expenses. To overcome this problem, the National Institute for Health and Disability Insurance (NIHDI-RIZIV-INAMI) created a specific status mainly based on their official health expenditure (see the technical definition below) giving access to the maximum billing (MAF) system for the chronically ill people, with a reimbursement of patients official co-payments (ticket modérateurs - remgelden) above specified thresholds and to the third-party payment for costs to the doctor and dentist (on a voluntary basis). ² In fact, the chronic illness status was developed in a vision of "social protection" for patients who have high out-of-pocket expenses and regularly have access to care, and not in a vision to identify all chronic patients administratively. Chronic patients with little out-of-pocket costs have less need of this financial protection.
Primary data source	the InterMutualistic Agency/InterMutualistisch Agentschap/Agence InterMutualiste - (IMA-AIM), update 2020 ^a The Atlas gives access to the IMA database population which, includes all socio-economic and demographic indicators of the population within the compulsory health insurance (i.e. 99% of the total Belgian population). The IMA has a time series for this database since 2002. Due to the need for a systematic use of this database, a systematic deepening, refinement and improvement of the data contained in it was performed over the years. Yearly in the month of September, statistics of the previous calendar year are added.
Technical definitions	Individuals entitled to the "chronic illness" status. Entitlement is observed through data from the IMA-AIM variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1(opening status) or 2(extension of status period), the individual has an entitlement and is assumed to suffer from a chronic disease. Chronic illness Status - Financial criterion (pp3015) is automatically opened by the sickness fund with which the beneficiary concerned is registered or affiliated, for a particular calendar year if during the two previous calendar years, the official health expenditures (i.e. the official expenditure reimbursed by RIZIV-INAMI and the patient's official co-payments (ticket modérateurs-remgelden) but excluding extra-billing (<i>supplements-supplementen</i>) and direct payments for non-reimbursed services) of the

^a Available from <https://atlas.ima-aim.be/databanken/?rw=1&lang=nl>



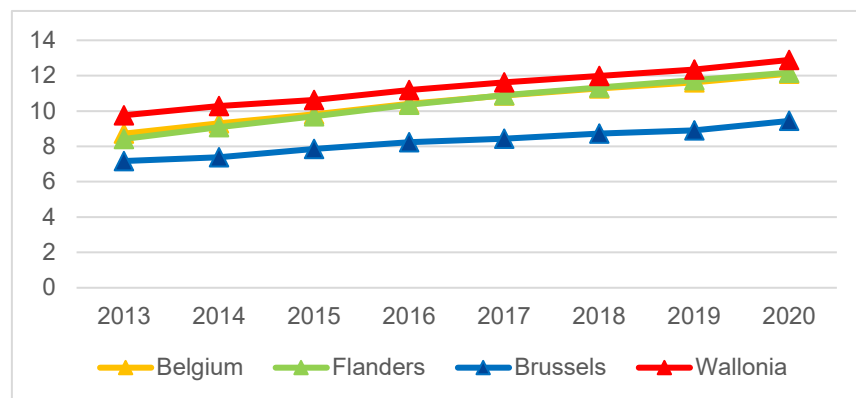
	beneficiary exceed €300 per quarter during 8 consecutive quarters (RD of 15 December 2013 implementing Article 37 vicies/1).²₃ - Chronic illness Status-lump sum for chronically ill person (pp3016) is automatically opened by the health insurance fund with which the beneficiary concerned is registered or affiliated, if the beneficiary is entitled to the fixed payment for chronically ill people. Such benefit is granted if the person is in a situation of dependency and if his/her official co-payments (ticket modérateurs-remgelden) exceed €450 per year (€365 for people entitled to a preferential reimbursement) during two consecutive years (RD of 15 December 2013 implementing Article 37s/1).² - Chronic illness Status - Orphan Disease (pp3017) is opened on the basis of a medical certificate, drawn up by a medical specialist, confirming that the beneficiary has been affected by a rare disease or orphan disease (Chapter IV of the Royal Decree of 15 December 2013 to implementation of Article 37s/1) if the official health expenditures (i.e. the official expenditure reimbursed by RIZIV-INAMI and the patient's official co-payments (ticket modérateurs-remgelden) of the beneficiary exceed €300 per quarter during 8 consecutive quarters .²
Limitations	Although the vast majority of Belgian residents are affiliated with compulsory health insurance, a small number of Belgians are not covered by this insurance. It is also important to note that this status is based on financial criteria and is not intended to cover all people with a chronic disease.
International comparability	a. Availability: / b. Comparability: /
Performance dimension	Contextual indicator
Related indicators	CHR-2, CHR-3



5.2. Results

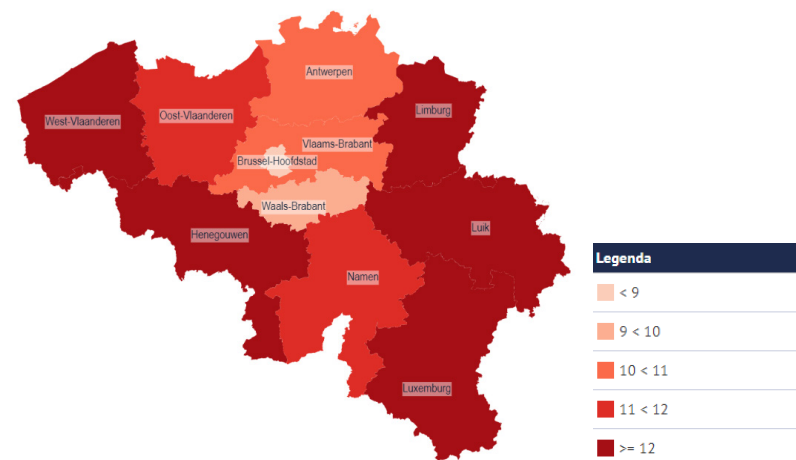
The proportion of Belgians entitled to the chronic illness status increased from 8.7% (2013) to 12.1% (2020) (Figure 11). The growth was quite similar in the Belgian regions. In 2020, Wallonia has the highest proportion of patients entitled to the chronic illness status (12.9%), followed by Flanders (12.2%) and Brussels (9.4%). Significant differences in the proportions can be seen between the provinces (Figure 12). Regarding age distribution for the chronic illness status over the regions (Figure 13), the oldest age group (75+) is underrepresented in Brussels (- 5% compared to Flanders and Wallonia), while in Flanders the group of respondents between 45 and 64 years old with chronic illness status is lower compared to the other regions. The gender-based distribution over the population with the chronic illness status shows an overrepresentation of women in all the three regions (Figure 14). Stratification of chronic illness status for the Belgian population reveals that people having a chronic illness status and entitled to an increased reimbursement (Verhoogde tegemoetkoming/bénéficiaire de l'intervention majorée) are substantially older and more of them have female gender.(Table 7)

Figure 11 – Percentage of the population entitled to the status chronic illness (years 2013 to 2020). Figures for Belgium and the regions.

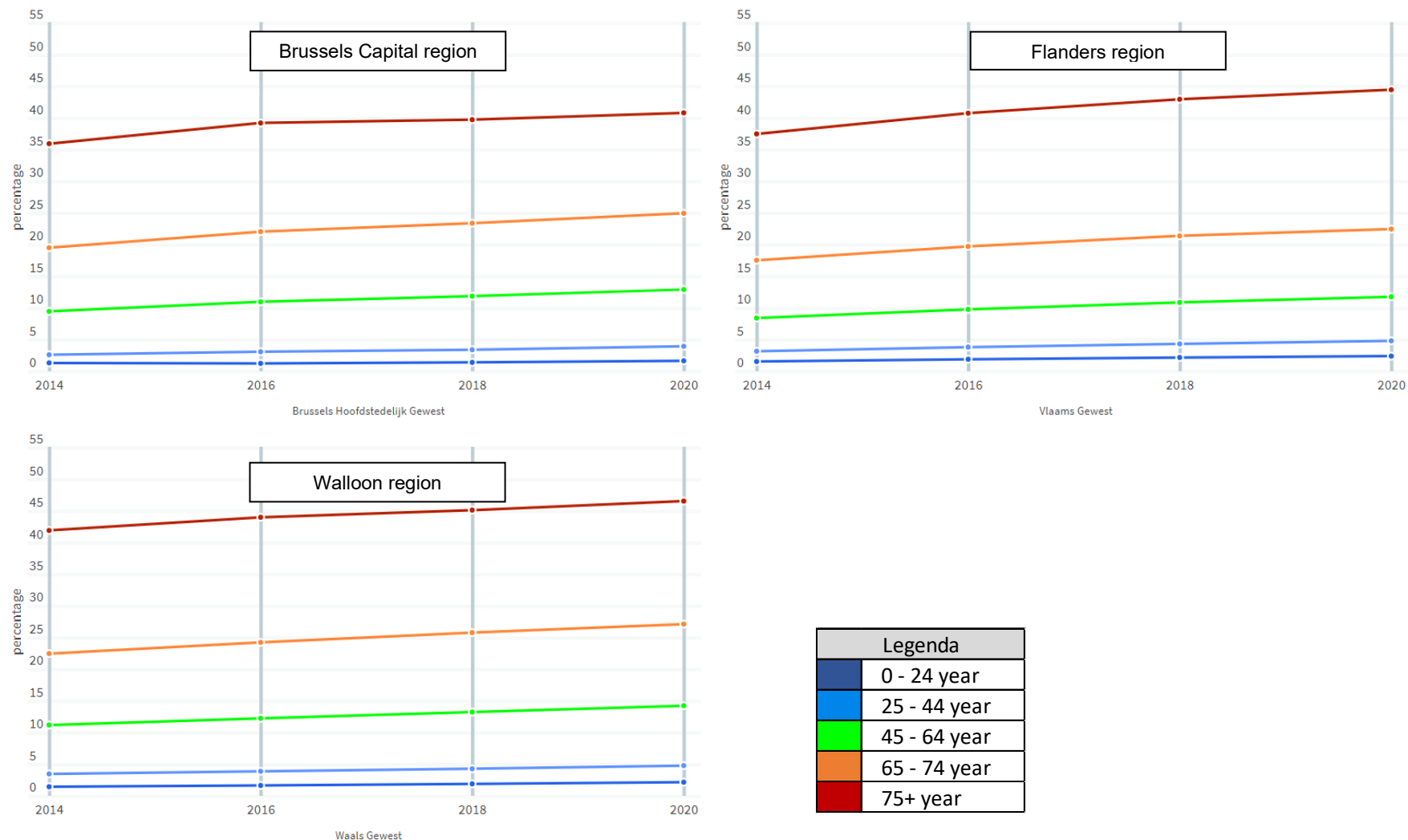


Source: IMA/AIM ATLAS

Figure 12 – Percentage of the population entitled to the status chronic illness (Year 2019). Differences between the Belgian provinces



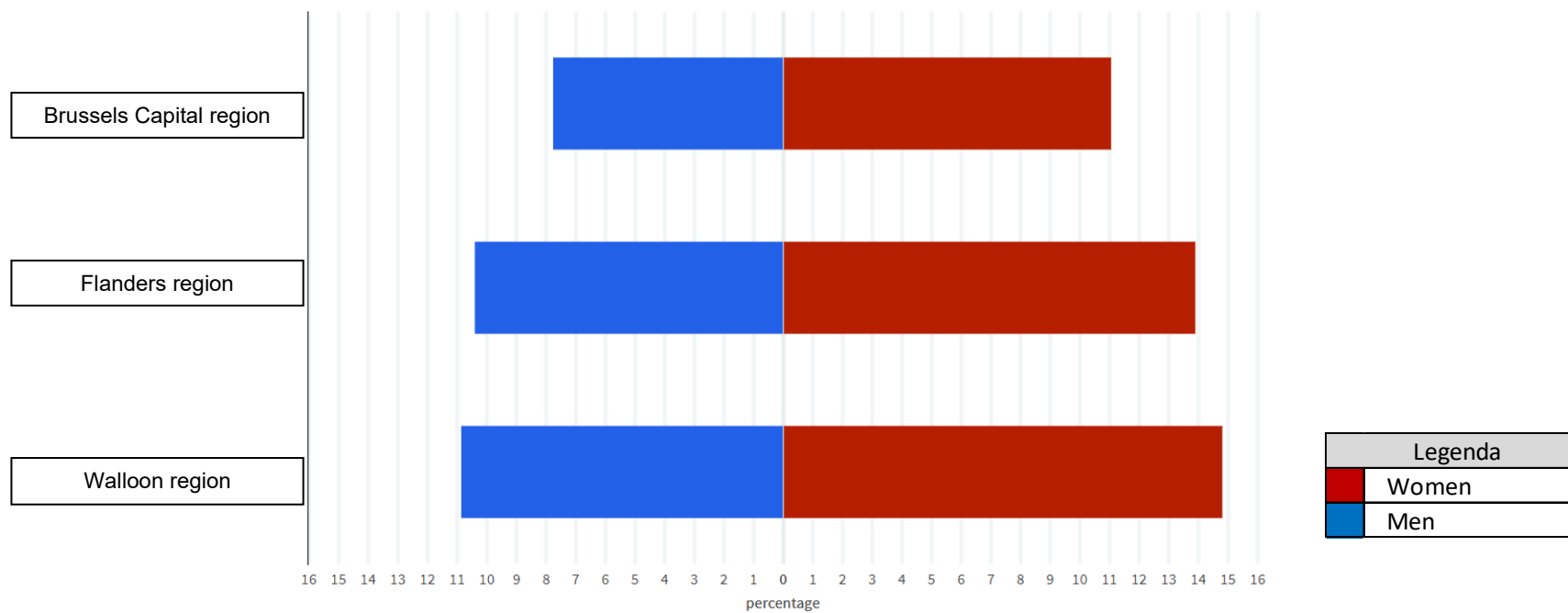
Source: IAM/AIM ATLAS

**Figure 13 – Percentage of the population of the regions (in age groups) entitled to the status chronic illness (years 2014 to 2020)**

Source: IMA/AIM ATLAS



Figure 14 – Percentage of the population of the regions (gender based) entitled to the status chronic illness (years 2014 to 2020)



Source: IMA/AIM ATLAS



Table 7 – Stratification of chronic illness status for the Belgian population based on age, gender and increased reimbursement (VT-BIM) in 2020

Chronic illness status Belgium 2020				
	No VT/BIM		VT/BIM	
	Men	Women	Men	Women
0-24 y	1.87	1.64	4.39	3.76
25-44 y	2.21	4.47	13.02	13.38
45-64 y	8.10	11.21	26.90	30.86
65-74 y	21.35	20.63	36.27	37.19
75+ y	37.22	40.54	51.05	58.65

Source: IMA/AIM ATLAS

Thanks to the linkage between data on the self-reported chronic disease state of people interviewed in Health Interview Survey (HIS) of 2018 and data on the chronic illness status of people in the Mandatory Health Insurance database 2018 (HISLink project), the proportion of people with the chronic illness status among the people reporting a chronic disease can be calculated. Among 2209 persons self-reporting a chronic illness in 2018, 696 have the chronic illness status, so a proportion of 31.5%. This results is close to the proportion of people with the chronic illness status among the people diagnosed for a chronic disease by their GP in the evaluation study conducted by the IMA in 2015 in the frame of the INTEGO project. ⁴

Key points

- The proportion of Belgians entitled to the chronic illness status increased from 8.7% (2013) to 12.1% (2020). The growth was quite similar in the three Belgian regions.
- Wallonia has the highest proportion of people with the chronic illness status and the Brussels region the lowest
- Significant differences in the proportions can be seen between the provinces.
- The Brussels region has less old-old (75+) people with chronic illness status compared to the other regions, while the figures for Flanders are lower for the middle aged citizens (45-64y).
- Women with the chronic illness status are overrepresented in all three regions compared to the percentage of men .
- People with chronic illness status and increased benefit (VT/BIM) are substantially older and more of them are women.
- 31.5% of the persons self-reporting a chronic illness in 2018 also had the chronic illness status.



References

1. OECD. Inequalities in health [Web page]. Paris: Organisation for Economic Co-operation and Development; 2020 [cited 2021/07/03]. Available from: <https://www.oecd.org/health/inequalities-in-health.htm>
2. RIZIV-INAMI. Statuut persoon chronische aandoening toegang zorgen [Web page]. Brussel: Rijksinstituut voor ziekte- en invaliditeitsverzekering; 2021 [cited December 2021]. Available from: <https://www.riziv.fgov.be/nl/themas/kost-terugbetaling/ziekten/chronische-ziekten/Paginas/statuut-persoon-chronische-aandoening-toegang-zorgen.aspx>
3. de Voorzorg. Statuut Chronisch Zieken [Web page]. 2021 [cited 2021/12/07]. Available from: <https://www.devoorzorg-bondmoyson.be/statuut-chronisch-zieken>
4. IMA-AIM. Maladies chroniques chez les personnes avec le statut affection chronique : leçons d'un couplage entre les données d'Intego et l'Agence Intermutualiste. Bruxelles: InterMutualistisch Agentschap - Agence InterMutualiste; 2019.



6. PROPORTION OF PEOPLE REPORTING A CHRONIC DISEASE (CHR-2)

6.1. Documentation sheet

Description	Percentage of the population aged 15 years and over with at least one self-reported chronic disease
Calculation	This is the number of persons reporting to have at least one chronic disease or condition (numerator), divided by the total amount of respondents (denominator) in the Belgian Health Survey.
Rationale	Non-communicable diseases (NCDs) constitute a problem of public health since they are responsible for 71% of deaths worldwide. They have a high impact on the quality of life and are also an important cause of premature death. Most of the NCDs can be preventable by adopting health policies to help to reduce the risk factors (e.g. smoking, drinking alcohol or lacking of physical activities) associated to the most important NCDs (cardiovascular diseases, cancer, respiratory diseases, and diabetes). The term “chronic disease” is often used as a synonym for NCDs, since they tend to be a long duration. However, NCDs are defined by their non-infectious cause, even though some chronic diseases can have an infectious cause (e.g. HIV). Self-reported chronic disease is used in the European Community Health Indicators (ECHI) projects. It is a widely used indicator to measure the population health and to provide estimates of health care needs. ¹
Primary data source	National Health Interview Survey (HIS), module: Chronic conditions, Sciensano Belgium, 2001, 2004, 2008, 2013, 2018. This survey is set up every 3 to 5 years. The InterMutualistic Agency/InterMutualistisch Agentschap/Agence InterMutualiste - (IMA-AIM), update 2020^b In the <i>HISLink</i>^c project, Sciensano performed a linkage between HIS data (2013 and 2018), and IMA-AIM data. The aim was notably to support RIZIV-INAMI to overcome the shortcomings of the data (e.g. lack of information on non-reimbursed health care use, lack of link between health care use and health needs, or scarcity of information on socio-demographic background characteristics). Data extracted from the HIS for the HISLink project covers the following topics: socio-demographic characteristics, health status, lifestyle and health care use. The linkage is not 100% because some individuals included in HIS could not be identified in the IMA-AIM database. In the HIS-2013, linkage was possible for 88% of HIS participants, while in the HIS-2018 linkage, this was the case for ~94%.
Technical definitions	National Health Interview Survey (HIS) The numerator is the number of persons reporting to suffer from a chronic disease by answering “yes” to the following question of the HIS;(MA_SH02): “Do you suffer from (have) any chronic (long-standing) illness or condition (health problem) ?”. The denominator is the number of respondents to the same question of the HIS (MA_SH02). Results are weighted to account for the survey design. Age-adjustment was made using a direct standardization method, using the age distribution of the Belgium 2018 as weights for age groups.¹ IMA-AIM Individuals entitled to the status chronic illness. Entitlement is observed through data from the InterMutualistic Agency (IMA-AIM), variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement and is assumed to suffer from a chronic condition. To be entitled to the RIZIV-INAMI chronic illness status, health expenditure based on official tariffs i.e. RIZIV-INAMI expenditures and patients’ official co-payments (tickets modérateurs / remgelden) but excluding extra-billings exceed €300

^b Available from <https://atlas.ima-aim.be/databanken/?rw=1&lang=nl>

^c HISLink project, <https://www.sciensano.be/en/projects/linkage-health-interview-survey-data-health-insurance-data> (last access 6 October 2021)



	(2013 tariff, indexed to €325.35 in 2019) per quarter for eight consecutive quarters or if they benefit for the fixed payments for chronically ill people or if they suffer from a rare or orphan disease and if their health expenditure based on official tariffs per quarter for eight consecutive quarters.
Limitations	HIS data must be interpreted with caution since they are self-reported and thus reflect individual perceptions of health that may differ from actual health: it is not excluded that some people report an illness incorrectly by lack of knowledge or because the disease is perceived as not socially acceptable.¹ Belgian citizens younger than 15 years are excluded. A similar but different question was available in the HIS editions until 2013 (MB01) : "Do you suffer from one or several longstanding illnesses, chronic conditions or handicaps?"
International comparability	c. Availability: 'Self-reported chronic disease' is an indicator available in Eurostat EU-SILC, performed annually. One question assesses the presence of long-standing health problems: "Do you have any longstanding illness or health problem?" Yes / No. The question was developed for the EUROHIS project "Developing common instruments for health surveys". The main characteristics of a chronic disease are that it is permanent and may be expected to require a long period of supervision, observation or care. Longstanding illnesses or health problems should have lasted (or recurred) or are expected to last (recur) for 6 months or more; therefore temporary problems are not of interest.² - Self-reported chronic disease is also part of the European Health Interview Survey (EHIS). d. Comparability - the self-reported prevalence of chronic disease indicator of the HIS can be compared with the self-reported chronic disease of the EU-SILC, although there is a difference in the formulation of the question since only the diseases or affections that have lasted for at least 6 months are considered. In the conceptual description it is indicated that in principle it concerns diseases that last at least 6 months (or of which this is expected), but the question does not refer to this period. Moreover, in the EU-SILC, the age group threshold is set up to 16-64 years and 65+ years.³ - Comparability is possible for 15 self-reported chronic morbidity available in the EHIS, although the HIS contains data for 38 chronic diseases or affections. EHIS data^d are not age-standardized, which can hamper the comparability of self-reported chronic morbidity since the prevalence of chronic diseases increases strongly with age.
Performance dimension	Contextual indicator
Related indicators	CHR-1, CHR-3

^d EHIS microdata are available via Eurostat (<https://ec.europa.eu/eurostat/web/microdata/european-health-interview-survey>) which allows comparing age-standardized results for this indicator between EU countries



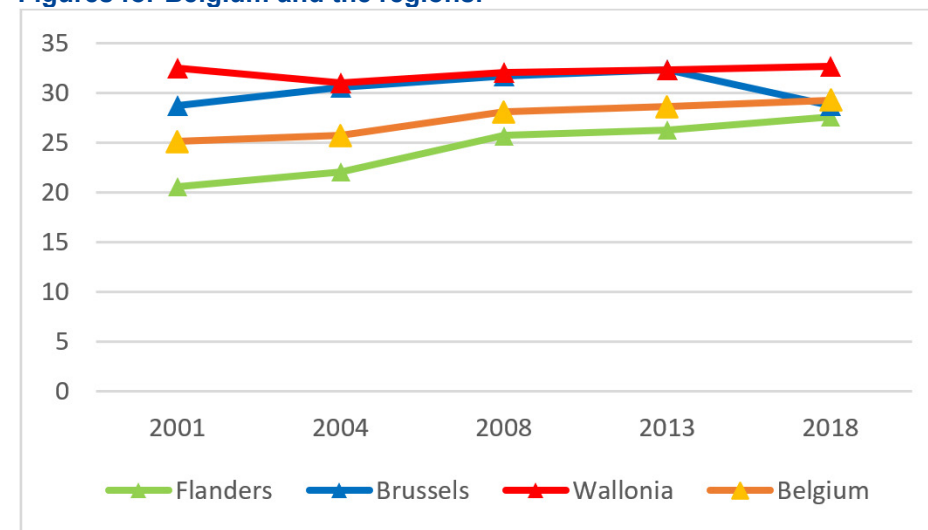
6.2. Results

6.2.1. Self-reported chronic diseases in population

The proportion of people in Belgium reporting a chronic disease grew from 2001 (25.1%) to 2018 (29.3%). Rates are the highest in Wallonia (32.7%), followed by Brussels (28.7%) and Flanders (27.6%) (Figure 1). As expected, the proportion of people with chronic diseases increases with age from 14.1% (age group 15-24) to 44.1% (age group 75+) (data of 2018) (Table 8).

A European study (EU-SILC) allows to compare data between European countries and shows that the proportion of people with chronic diseases is low compared to the mean of 15 European countries. (Table 9)

Figure 15 – Percentage of the population aged 15 years and over with at least one chronic disease (years 2001, 2004, 2008, 2013, 2018). Figures for Belgium and the regions.



Source: National Health Interview Survey (HIS)

Table 8 – Percentage of the population (per age group) with at least one chronic disease (years 2001, 2004, 2008, 2013, 2018)

Age Group	2001	2004	2008	2013	2018
15-24	10.3% [8.1%-12.4%]	11.1% [8.3%-13.9%]	7.4% [5.2%-9.6%]	7.4% [4.9%-10.0%]	14.1% [10.4%-17.8%]
25-34	12.6% [10.5%-14.7%]	15.6% [12.6%-18.5%]	17.5% [14.5%-20.6%]	15.8% [12.0%-19.6%]	17.4% [14.2%-20.7%]
35-44	21.1% [18.4%-23.8%]	20.5% [17.8%-23.3%]	21.5% [18.5%-24.5%]	25.6% [21.8%-29.5%]	25.0% [21.7%-28.3%]
45-54	25.7% [22.9%-28.6%]	28.0% [24.9%-31.1%]	30.0% [26.6%-33.5%]	29.1% [25.6%-32.7%]	30.0% [26.7%-33.3%]
55-64	33.3% [29.9%-36.7%]	33.3% [29.8%-36.7%]	37.8% [34.1%-41.5%]	38.5% [34.4%-42.6%]	36.7% [32.9%-40.4%]
65-74	38.6% [34.7%-42.5%]	39.3% [35.7%-42.9%]	44.0% [39.1%-48.9%]	38.4% [33.9%-42.9%]	39.7% [36.0%-43.4%]
75+	53.7% [48.2%-59.2%]	46.7% [42.0%-51.4%]	48.3% [43.9%-52.6%]	46.3% [41.2%-51.4%]	44.1% [39.8%-48.3%]

Source: National Health Interview Survey (HIS)



Table 9 – Percentage of persons reporting a chronic disease per country in Europe

2020	% people reporting a chronic illness
EU-15 (mean for 12 countries)	34.1
UK	NA
Italy	NA
Germany	NA
Finland	50.3
Portugal	43.2
Sweden	37.4
France	37.4
Spain	37.3
Austria	35.4
Denmark	34.6
Netherlands	32.5
Ireland	27.2
Belgium	24.8
Luxembourg	24.6
Greece	23.9

Source: EU-SILC, NA= Not available

6.2.2. Reporting of chronic disease in people with the chronic illness status

Thanks to the HISLink project (see documentation sheet), additional results on the indicator 'people with chronic disease (CHR2)' can be obtained in the subgroup of people with the chronic illness status (indicator CHR1 used as an stratification variable here). The population sample of the HISLink is a large proportion of the HIS cohort: For 2018 the Valid Ns are 7488 vs 7945 (94.2%). For 2013 the figures were lower 5933 vs 6299 but the percentage is the same (94.2%). The results on the self-reported chronic disease between the HIS cohort and the HISLink sample, for 2018 are coherent: 29.3% vs 29.5% and congruent with 2013 data. (Table 10)

As shown in the Figure 15, there is a slight increase in the proportion of people with a self-reported chronic disease between 2013 and 2018: 28.6% vs 29.3% (increase of 0.7 point of percentage in 5 years). There is also an increase in the proportion of people with RIZIV-INAMI chronic illness status between 2013 and 2018: 10.5% vs 12.9% (increase of 2.4 point of percentage in 5 years) (see fiche of the CHR1 indicator, for details).

The difference between the proportion of people with a self-reported chronic disease and of people with the chronic illness status is important in 2013: 28.6% vs 10.5% (diff = 18.1%). For 2018 this difference is in the same order of size, i.e. 29.5% vs 12.9% (diff= 16.6%).

- A first explanation is that the chronic illness status is mainly based on healthcare expenses and not on having a chronic disease. People having a chronic disease, but whose healthcare cost is lower than 300€/quarter (not indexed), not benefiting of the lump sums for chronically ill persons, are not entitled to the chronic illness status.
- Another explanation is that people need to have a healthcare cost of 300€/quarter for 8 consecutive quarters to enter in the status. This implies that people who do not have a 'continuous' high cost, or who only have a deterioration of a chronic disease for a few months, leading to increased but short-term expenses, will not get the RIZIV-INAMI chronic illness status.
- Thirdly, the spending for reimbursed health care is more important in case of multimorbidity than in the situation of chronic disease: in 2018, 39.2% of multimorbid people benefit from the RIZIV-INAMI chronic illness status while 31.5 % of the self-reported chronic disease patients benefit from it."

The RIZIV-INAMI status reflects the people with high spending in care but is not a good proxy to identify all persons with chronic diseases.

The people identified by the RIZIV-INAMI chronic illness status (in 2018 12.9% of the HISLink sample) can be categorised in two: the ones who report to have a chronic disease (72%) and those who do not report a chronic disease (27%). It might be that these people who do not report a chronic disease in the HIS either (1) lack health literacy/HIS questions



comprehension, or (2) use a lot of reimbursed care without diagnosis of any known chronic disease.

It is also remarkable that in 2018 (congruent to 2013) 23.8% of the HISLink respondents have either the self-reported chronic disease or the RIZIV-INAMI chronic illness status (but not both). This implies that there is not a strong link between the chronic illness status and having a chronic disease.

In the HIS cohort, there are slight inter-regional differences in the prevalence of (self-reported) chronic diseases in 2013/2018 (Flanders: 26.3/27.6%; Brussels region: 32.3/28.7%; Wallonia: 32.3/32.7%). And in the HISLink cohort, there are slight inter-regional differences in the proportion of people with the chronic illness status in 2013/2018 (Flanders: 10.4/12.7%; Brussels region: 10.3/12.9%; Wallonia: 10.7/13.1%). The trend for the three Belgian regions for the above-mentioned is the same.

Table 10 – Reporting of chronic disease in patients with the Chronic illness Status

	2013						2018					
	Self-reported chronic disease (HIS sample)		Self-reported chronic disease (HISLink sample)		Chronic illness status (HISLink sample)		Self-reported chronic disease (HIS sample)		Self-reported chronic disease (HISLink sample)		Chronic Illness status (HISLink sample)	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Belgium	28.6	27.0 - 30.2	28.5	26.9 - 30.1	10.5	9.4 - 11.5	29.3	27.9 - 30.8	29.5	28.1 - 31.0	12.9	11.8 - 13.9
Brussels	32.3	29.0 - 35.5	32.6	29.2 - 36.1	10.3	7.8 - 12.9	28.7	26.2 - 31.1	29.4	26.8 - 31.9	12.9	11.2 - 14.7
Flanders	26.3	24.1 - 28.5	26.1	23.9 - 28.3	10.4	8.9 - 11.8	27.6	25.6 - 29.5	27.7	25.7 - 29.6	12.7	11.3 - 14.2
Wallonia	32.3	29.6 - 35.0	32.5	29.7 - 35.2	10.7	9.0 - 12.4	32.7	30.0 - 35.4	33.1	30.4 - 35.6	13.1	11.3 - 14.9

	2013						2018					
	Self-reported chronic disease AND chronic illness status		Self-reported chronic disease but NO chronic illness status		NO Self-reported chronic disease but chronic illness status		Self-reported chronic disease AND chronic illness status		Self-reported chronic disease but NO chronic illness status		NO Self-reported chronic disease but chronic illness status	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Belgium	8.1	7.1 - 9.0	20.4	19.0 - 21.9	2.4	1.9 - 2.9	9.3	8.4 - 10.2	20.2	19.0 - 21.5	3.5	3.0 - 4.1
Brussels	8.0	5.7 - 10.3	24.6	21.7 - 27.6	2.3	1.3 - 3.4	9.1	7.6 - 10.6	20.2	18.1 - 22.4	3.8	2.8 - 4.8
Flanders	8.1	6.8 - 9.5	18.0	16.0 - 19.9	2.2	1.6 - 2.9	9.1	7.9 - 10.3	18.6	17.0 - 20.2	3.7	2.9 - 4.4
Wallonia	8.0	6.5 - 9.4	24.5	21.9 - 27.1	2.7	1.9 - 3.5	9.8	8.2 - 11.4	23.3	20.9 - 25.7	3.3	2.4 - 4.1

Source: HISlink data



Key points

- The proportion of people in Belgium reporting a chronic disease grew from 2001 (25.1%) to 2018 (29.3%). Rates are the highest in Wallonia (32.7%), followed by Brussels (28.7%) and Flanders (27.6%)
- The proportion people with chronic diseases increases with age from 14.1% (age group 15-24) to 44.1% (age group 75+).
- The European study (EU-SILC) shows that the proportion of people with chronic diseases is low compared to the mean of 15 European countries.
- The difference between the proportion of people with a self-reported chronic disease and of people with the chronic illness status is important in 2013: 28.6% vs 10.5% (diff = 18.1%). For 2018 this difference is in the same order of size, i.e. 29.5% vs 12.9% (diff= 16.6%). The most important reason is that the chronic illness status is mainly based on healthcare expenses (financial protection system) and not on having a chronic disease.

- It is also remarkable that in 2018 (congruent to 2013) 23.8% of the HISLink respondents have either the self-reported chronic disease or the RIZIV-INAMI chronic illness status (but not both). This implies that there is not a systematic link between the chronic illness status and self-reporting a chronic disease.

References

1. Sciensano. Metadata Overview 20190725 [Web page].2019 [cited 2021/07/03]. Available from: https://www.healthybelgium.be/metadata/hsr/03_Metadata_Overview_20190725.pdf
2. EUROSTAT. Methodological guidelines and description of EU-SILC target variables. 2019. Available from: https://circabc.europa.eu/sd/a/b862932f-2209-450f-a76d-9cfe842936b4/DOCSILC065%20operation%202019_V9.pdf
3. EUROSTAT. Health variables of EU-SILC. Reference Metadata in Euro SDMX Metadata Structure (ESMS) [Web page].2020 [cited 2021/09/07]. Available from: https://ec.europa.eu/eurostat/cache/metadata/en/hlth_silc_01_esms.htm



7. PROPORTION OF PEOPLE WITH SELF-REPORTED MULTIMORBID STATE IN THE LAST 12 MONTHS (CHR-3)

7.1. Documentation sheet

Description	Percentage of the population aged 15 years and over who self-reported more than one of the following chronic diseases: chronic lung disease, serious heart disease, diabetes, osteoarthritis/arthritis, hypertension, cancer
Calculation	Numerator = the number of persons aged 15 years and over reporting more than one chronic diseases from a list of 6 diseases or disease groups Denominator = the total amount of respondents in the Belgian Health Interview Survey The result is provided as a percentage
Rationale	Non-communicable diseases (NCDs) constitute a problem of public health since they are responsible for 71% of deaths worldwide. They have a high impact on the quality of life and are also an important cause of premature death. Most of the NCDs can be preventable by adopting health policies to help to reduce the risk factors (e.g. smoking, drinking alcohol or lacking of physical activities) associated to the most important NCDs (cardiovascular diseases, cancer, respiratory diseases, and diabetes). The term “chronic disease” is often used as a synonym for NCDs, since they tend to be of a long duration. However, NCDs are defined by their non-infectious cause, even though some chronic diseases can have an infectious cause (e.g. HIV). Self-reported chronic morbidity is used in the European Community Health Indicators (ECHI) projects. It is a widely used indicator to measure the population health and to provide estimates of health care needs. ¹
Primary data source	National Health Interview Survey (HIS) module: Chronic conditions, Sciensano Belgium, 2001, 2004, 2013, 2018. This survey is set up every 3 to 5 years. The InterMutualistic Agency/InterMutualistisch Agentschap/Agence InterMutualiste (IMA-AIM) database, update 2020 ^e In the HISLink^f project, Sciensano performed a linkage between HIS data (2013 and 2018) and IMA-AIM data. The aim was notably to support RIZIV-INAMI to overcome the shortcomings of the data (e.g. information on non-reimbursed health care use, lack of link between health care use and health needs, or scarcity of information on socio-demographic background characteristics). Data extracted from the HIS cover the following topics: socio-demographic characteristics, health status, lifestyle and health care use. The linkage is not 100% because some individuals included in HIS could not be identified in the IMA-AIM database. In the HIS2013, linkage was possible for 88% of HIS participants, while in the HIS2018 linkage, this was the case for ~94%.
Technical definitions	National Health Interview Survey (HIS) The numerator is the number of persons aged 15 years and over, reporting to suffer from more than one chronic disease or disease group (see further in the text) by answering “yes” to two or more diseases, by means of the following question in the HIS (in face-to-face interview MA01): “During the past 12 months, have you had any of the following diseases or conditions?”.

^e Available from <https://atlas.ima-aim.be/databanken/?rw=1&lang=nl>

^f HISLink project, <https://www.sciensano.be/en/projects/linkage-health-interview-survey-data-health-insurance-data> (last access 6 October 2021)



The denominator is the number of respondents to the same question of the HIS (MA01).

For the purpose of this indicator, 10 of a list of 38 diseases are considered (asthma, Chronic obstructive pulmonary disease (COPD), Acute Myocardial infarction (AMI) and consequences, coronary heart disease, other serious heart disease, hypertension, osteoarthritis, arthritis, cancer and diabetes). In the construction of the indicator, asthma and COPD are taken together as 'chronic lung disease'; AMI and consequences, coronary heart disease and other serious heart disease are taken together as 'serious heart disease'; and osteoarthritis and arthritis (2 different questions) are also taken together. This leaves 6 diseases or disease groups (chronic lung disease, serious heart disease, diabetes, osteoarthritis/arthritis, hypertension and cancer).

Multimorbidity is defined as having at least two from those six. This implies that people reporting only two diseases from the same 'disease group' are not considered as multimorbid.

IMA-AIM

Individuals entitled to the chronic illness status. Entitlement is observed through data from the InterMutualistic Agency (IMA-AIM), variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement and is assumed to suffer from a chronic disease. To be entitled to the RIZIV-INAMI chronic illness status, health expenditure based on official tariffs i.e. RIZIV-INAMI expenditures and patients' official co-payments (tickets modérateurs / remgelden) but excluding extra-billings exceed €300 (2013 tariff, indexed to €325.35 in 2019) per quarter for eight consecutive quarters or if they benefit for the fixed payments for chronically ill people or if they suffer from a rare or orphan disease and if their health expenditure based on official tariffs per quarter for eight consecutive quarters.

Limitations

Data must be interpreted with caution since they are self-reported and thus reflect individual perceptions of health that may differ from actual health: it is not excluded that some people report a disease incorrectly by lack of knowledge or because the disease is perceived as not socially acceptable.¹

Belgian citizens younger than 15 years are excluded

To date, consensus on the definition of multimorbidity is still lacking. The definition of ≥ 2 chronic diseases is under discussion, especially when highly prevalent conditions (e.g. hypertension) are included because these may result in high prevalence rates even if there is a lesser impact on patients' symptoms, functional status, and HRQoL.²

International comparability

- e. Availability: /
- f. Comparability: /

Performance dimension

Contextual indicator

Related indicators

CHR-1, CHR-2



7.2. Results

7.2.1. self-reported multimorbid state in the last 12 months in the population

The proportion of people in Belgium reporting at least two chronic conditions among the selected diseases increased from 2001 (11.4%) to 2018 (15.2%). The increase over age groups is largely explained by the ageing of the population (Table 11). In 2018, the proportion of people with at least two chronic conditions increased with age from 0.8% (age group 15-24) to 41.8% (age group 75+) and was the highest in Wallonia (16.5%), followed by Flanders (15.1%) and Brussels (10.8%) (Figure 16).

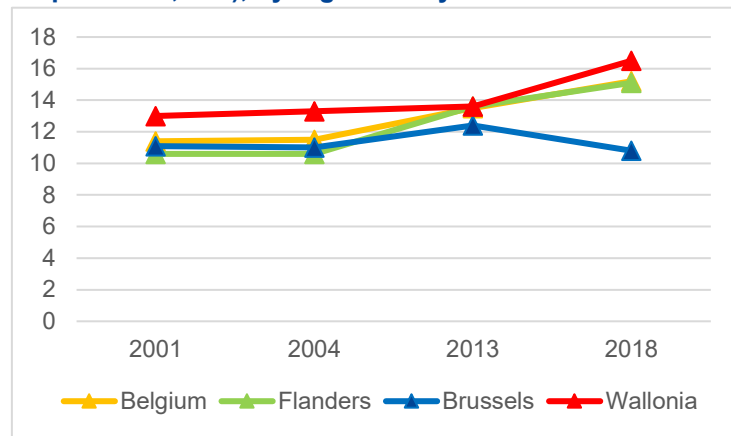
Table 11 – Percentage of the population (per age group) reporting at least two chronic conditions among the selected diseases. (years 2001, 2004, 2013, 2018)

Age Group	2001	2004	2013	2018
15-24	0.3% [0.1%-0.6%]	0.5% [0.0%-1.1%]	0.0% [0.0%-0.1%]	0.8% [0.0%-1.6%]
25-34	1.6% [0.7%-2.5%]	1.5% [0.9%-2.1%]	1.9% [0.8%-3.0%]	1.3% [0.6%-1.9%]
35-44	3.4% [2.4%-4.3%]	3.5% [2.3%-4.7%]	4.3% [2.7%-5.9%]	4.7% [3.3%-6.0%]
45-54	8.7% [7.0%-10.5%]	8.3% [6.5%-10.1%]	10.5% [8.4%-12.6%]	10.7% [8.7%-12.7%]
55-64	17.9% [15.2%-20.5%]	18.8% [16.2%-21.4%]	19.7% [17.0%-22.5%]	24.4% [21.5%-27.3%]
65-74	29.5% [26.1%-32.9%]	30.6% [27.5%-33.7%]	33.2% [28.9%-37.5%]	34.1% [30.6%-37.7%]
75+	39.9% [34.8%-44.9%]	37.1% [33.4%-40.8%]	39.0% [34.7%-43.4%]	41.8% [37.8%-45.7%]

Source: National Health Interview Survey (HIS)



Figure 16 – Proportion of people reporting at least two chronic conditions among the selected diseases in the last 12 months (% of respondents, 15+), by region and year



Source: National Health Interview Survey (HIS)

7.2.2. Chronic illness status and self-reported chronic disease in people self-reporting multimorbidity state in the last 12 months

These are the results on the self-reported multimorbid state in the HISLink sample, a linkage between HIS and IMA-AIM data (see Table 12). Among the HIS respondents of 2018 who report to have a chronic disease, 33.8% reports to be multimorbid. Note however that the questions for these variables are set up different (see technical fiche of CHR2 indicator and CHR3 indicator). It might be that respondents report a chronic disease that is not listed in the question on multimorbidity or only suffer from one chronic disease.

Among the patients who have the RIZIV-INAMI chronic illness status (2018) only 47.4% reports to have multimorbidity. And in the group not having the chronic disease status, 10.6% reports to be multimorbid.

- It seems that there is not a clear link between the chronic disease status and multimorbidity. People can perhaps have other healthcare expenses that are not related to a chronic disease. Or certain diseases that are not asked for in the HIS (mental problems?) can lead to higher healthcare expenses for a long time... On the other hand, 10.6% of respondents who do not have the IMA status report multimorbidity. This could be explained by a low spending in reimbursed care for their specific diseases.
- However, presumably multimorbidity is more expensive for a substantive number of respondents than having only one chronic disease. The IMA status might better identify people with comorbidity, probably because they have more spending in reimbursed care.

A remarkable thing is that in 2018 7.9% of people who do not report to have chronic disease are comorbid. This is difficult to explain except if people do not understand correctly the question about chronic disease.

**Table 12 – Proportion of people self-reporting multimorbid state in the last 12 months**

	2013						2018					
	Self-reported multimorbid state (HIS)		Chronic illness status (HISlink)		NO chronic illness status (HISlink)		Self-reported multimorbid state (HIS)		Chronic illness status (HISlink)		NO chronic illness status (HISlink)	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Belgium	33.7	30.7 – 36.7	45.4	41.1 – 49.6	9.7	8.7 – 10.6	33.8	31.2 – 36.3	47.4	43.6 – 51.2	10.6	9.7 – 11.4
Brussels	34.6	28.7 – 40.5	49.5	40.5 – 58.6	8.9	7.4 – 10.3	28.7	24.4 – 32.9	38.3	32.4 – 44.1	7.7	6.4 – 9.0
Flanders	34.5	29.9 – 39.0	47.3	41.1 – 53.6	9.36	8.2 – 11.1	34.4	30.8 – 38.0	48.3	43.0 – 53.7	10.2	9.0 – 11.4
Wallonia	32.2	27.9 – 36.6	41.0	34.7 – 47.4	10.0	8.6 – 11.5	34.1	29.8 – 38.4	48.2	41.8 – 54.6	12.0	10.3 – 13.7

Source: National Health Interview Survey (HIS) and HISlink data

Key points

- The proportion of people in Belgium reporting at least two chronic conditions increased from 2001 (11.4%) to 2018 (15.2%).
- Figures for multimorbidity increase with age.
- Wallonia has the highest proportion and the Brussels region the lowest.
- There is not a clear link between the chronic illness status and multimorbidity

References

1. Sciensano. Metadata Overview 20190725 [Web page].2019 [cited 2021/07/03]. Available from: https://www.healthybelgium.be/metadata/hsr/03_Metadata_Overview_20190725.pdf
2. Van Wilder L, Devleeschauwer B, Clays E, De Buyser S, Van der Heyden J, Charafeddine R, et al. The impact of multimorbidity patterns on health-related quality of life in the general population: results of the Belgian Health Interview Survey. Qual Life Res. 2021.



8. VACCINATION AGAINST INFLUENZA FOR THE ELDERLY (P-4)

8.1. Documentation sheet

Description	Proportion of the population aged 65 years and over that were vaccinated against influenza
Calculation	Numerator: number of individuals aged 65 years and over who received a dose of influenza vaccine during the past calendar year.⁹ Denominator: number of individuals aged 65 years and over Because results are based on sickness funds data, most calculations are based on elderly patients who are not residing in an institution (see section limitation for details). However a sensitivity analysis including data from nursing homes in Wallonia and Brussels has also been performed (see section limitation for details).
Rationale	Influenza vaccines are considered as the most effective preventive tool to reduce disease burden and severe disease due to influenza in individuals. In Belgium, seasonal influenza vaccination is currently recommended for the prevention of influenza for, among others, all persons aged 65 years and over and for all persons living in institutions (among other groups).¹ The WHO recommends as target a 75% vaccination rate for the elderly.²
Primary data source	There are two sources of results for this indicator: • Results presented in this report are based on billing data (IMA-AIM data) of influenza vaccines which have been reimbursed. • Results presented in international databases (OECD, Eurostat, ECDC, WHO) are based on Belgium health interview survey (HIS) (self-reported vaccination status).^{3,4}
Technical definitions	In IMA-AIM data: all vaccines belonging to the ATC 4 class J07BB (anti-influenza vaccines). A distinction is made between chronic versus non-chronic patients. Chronic condition definition: IMA-AIM: Individuals entitled to the RIZIV-INAMI status chronic illness. Entitlement is derived from data from the InterMutualistic Agency (IMA-AIM), variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an chronic illness entitlement and is assumed to suffer from a chronic illness.
Limitation	In IMA-AIM data, only vaccines which have been reimbursed by the RIZIV-INAMI are taken into account. In Flanders, since 2010, vaccines are free of charges for elderly residing in elderly and nursing homes: vaccines are bought as a group by the Flemish community, and hence are not reimbursed by sickness funds, and do not appear in the IMA database (source: Agentschap voor Zorg and Gezondheid). Hence all calculations for this indicator exclude (from numerator and denominator) elderly residing in elderly or nursing homes, which may result in an underestimation of the true coverage rate. As a sensitivity analysis, this indicator is computed including the elderly residing in elderly or nursing homes, for Wallonia and Brussels. In the HIS (OECD indicator), data are self-reported.
International comparability	OECD data are based on Health interviews survey (self-reported data).
Dimension	Accessibility of preventive care

⁹ This definition differs from epidemiological studies, where rates are generally calculated on one influenza season, which usually overlaps two calendar years.



8.2. Results

8.2.1. Belgium

Population aged 65 years and over

Based on reimbursement data, vaccination rates against influenza for patients aged 65 years old staid stable since 2013 (from 56.4% in 2013 to 55.1% in 2019, data excluding nursing homes). In 2019, there was a higher coverage rate in Flanders (60.8%) than in Wallonia (46.1%) and Brussels (44.7%), and large differences between patient provinces (see Table 13). Indeed, Liège shows a higher vaccination rate than the other Walloon provinces (79.4%), and on the Flemish side, Limburg (64.0%) shows a lower vaccination rate than other provinces in Flanders (Table 13; Figure 18).

The results exclude the elderly residing in nursing homes because in Flanders influenza vaccines for this population are bought directly by the regional health authority. A sensitivity analysis was performed including and excluding elderly residing in institutions and limiting the analysis to Wallonia and Brussels. By including the elderly living in institution, the vaccination coverage, globally reaches 48.2% (with a rate of 82.1% in institutions). By excluding the elderly residing in institutions the rate decreases to 45.9% (see Table 13).

There are also large differences in coverage rates by patient age: while the rate only reaches 40.8% for the 64-69 years old, it improves to 71.4% for the 90+ (Table 13). The same data also show that there is no accessibility problem for people having preferential reimbursement entitlement.

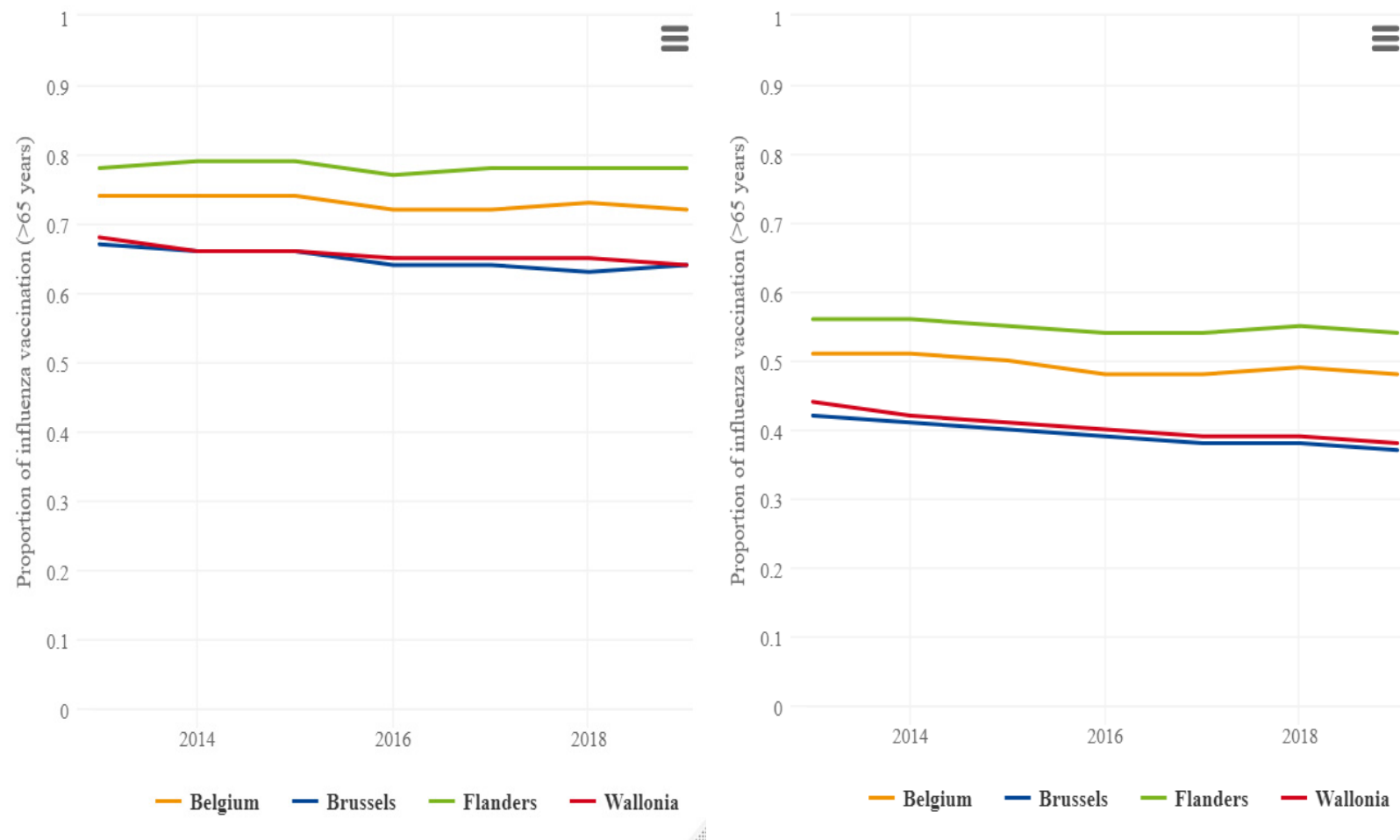
Population aged 65 years over entitled to the INAMI-RIZIV status chronic illness vs not entitled to the status chronic illness

The vaccination rate is 24.2% higher in patients entitled to the status chronic illness than in patients not entitled to the status (2019: chronic 72.3% vs not chronic 48.1%) and the difference in vaccination coverage increased since 2013 (22.5%). Whatever the socio-economic characteristics of the patients, those entitled to the chronic status are always more frequently vaccinated than those without chronic status. Patients with chronic status living in Flanders are more frequently vaccinated (77.7%) than those living in Brussels (63.6%) or Wallonia (64.3%). However, Liège has the highest vaccination rates among chronic patients (79.4%), followed by Anvers (78.5%) and Vlaams Brabant (78.3%). The average vaccination rate in Wallonia is drawn down by the low vaccination rate in Hainaut (63.0%) (Table 13; Figure 18).

Chronic patients living in nursing homes (65+ in Wallonia and Brussels) are also more frequently vaccinated (84.2%) than patients not entitled to chronic status living in nursing homes (73.9%).



Figure 17 – Coverage of vaccination against influenza in people aged 65 years and over, by region (2013-2019) and by chronic status (Chronic = left side; Not chronic = right side)



Source: IMA data, KCE calculation.

Note: **People residing in institution are excluded from the analysis** (see section limitation in technical fiche for details).



Table 13 – Coverage of vaccination against influenza in people aged 65 years and over, by patient characteristics (2019)

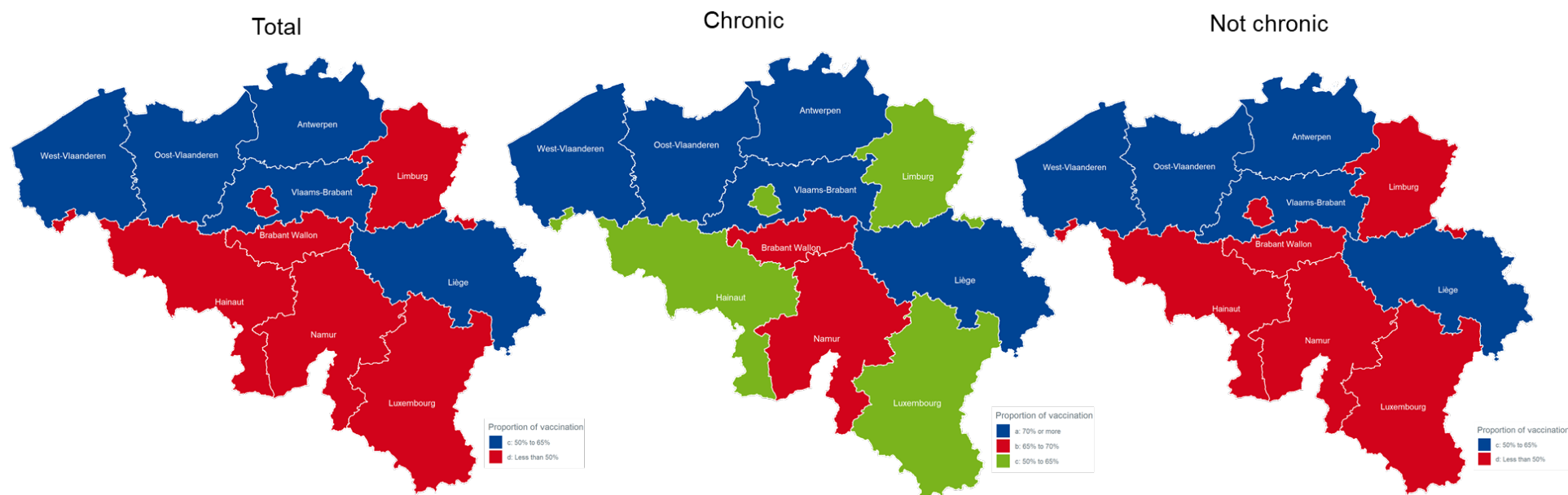
Variable	Category	Chronic			Not chronic			Belgium		
		<u>BELGIUM CALCULATION, INSTITUTIONS EXCLUDED</u>	<u>WALLONIA +BRUSSELS CALCULATION, INSTITUTIONS INCL.</u>	<u>WALLONIA+BRUSSELS CALCULATION, INSTITUTIONS EXCL.</u>	<u>BELGIUM CALCULATION, INSTITUTIONS EXCLUDED</u>	<u>WALLONIA+BRUSSELS CALCULATION, INSTITUTIONS INCL.</u>	<u>WALLONIA+BRUSSELS CALCULATION, INSTITUTIONS EXCL.</u>	<u>BELGIUM CALCULATION, INSTITUTIONS EXCLUDED</u>	<u>WALLONIA+BRUSSELS CALCULATION, INSTITUTIONS INCL.</u>	<u>WALLONIA+BRUSSELS CALCULATION, INSTITUTIONS EXCL.</u>
		Influenza vaccination coverage			Influenza vaccination coverage			Influenza vaccination coverage		
Data 2019 by categories										
Total		72.3%	67.2%	64.1%	48.1%	38.5%	37.8%	55.1%	48.2%	45.9%
Age (years)	65-69	61.1%	53.7%	52.5%	35.7%	26.3%	26.2%	40.8%	32.6%	32.0%
	70-74	69.5%	62.6%	61.4%	46.8%	36.7%	36.6%	52.5%	44.1%	43.3%
	75-79	75.0%	68.3%	67.0%	55.4%	45.3%	45.0%	61.5%	53.4%	52.3%
	80-84	78.1%	73.2%	71.1%	62.0%	52.2%	51.5%	68.0%	61.1%	59.1%
	85-89	79.3%	76.3%	72.7%	64.9%	57.1%	55.5%	71.2%	66.9%	63.1%
	>90	78.9%	79.4%	73.7%	63.8%	59.3%	55.5%	71.4%	71.7%	64.5%
Gender	Female	71.6%	67.0%	63.4%	48.7%	39.0%	38.1%	55.6%	49.3%	46.2%
	Male	73.2%	67.4%	65.3%	47.4%	38.0%	37.5%	54.4%	46.9%	45.5%
Entitlement to increased reimbursement	No	72.8%	67.1%	64.7%	48.3%	38.9%	38.3%	54.4%	47.3%	45.5%
	Yes	71.3%	67.6%	63.1%	47.3%	37.3%	36.1%	57.0%	50.8%	46.8%
Long term care	Home care	74.6%	65.9%	65.9%	61.7%	51.4%	51.4%	71.3%	62.3%	62.3%
	Institutions	NA	84.2%	NA	NA	73.9%	NA	NA	82.1%	NA
	No long term care	71.9%	63.9%	63.9%	47.8%	37.6%	37.6%	54.2%	45.1%	45.1%
Region	Brussels	63.6%	65.8%	63.6%	37.0%	37.6%	37.0%	44.7%	46.6%	44.7%



	Flanders	77.7%	NA	NA	54.2%	NA	NA	60.8%	NA	NA
	Wallonia	64.3%	67.6%	64.3%	38.0%	38.8%	38.0%	46.1%	48.6%	46.1%
	Brussels + Wallonia (sensitivity analysis)	64.2%	67.3%	64.2%	37.8%	38.5%	37.8%	45.9%	48.2%	45.9%
Province	Antwerpen	78.5%	NA	NA	55.4%	NA	NA	61.4%	NA	NA
	Brabant Wallon	68.4%	71.5%	68.4%	41.9%	42.6%	41.9%	48.9%	51.1%	48.9%
	Bruxelles- Capitale	63.6%	65.8%	63.6%	37.0%	37.6%	37.0%	44.7%	46.6%	44.7%
	Hainaut	63.0%	66.6%	63.0%	37.2%	37.9%	37.2%	45.8%	48.5%	45.8%
	Limburg	64.0%	NA	NA	36.8%	NA	NA	45.3%	NA	NA
	Liège	79.4%	66.9%	64.0%	54.8%	37.6%	36.8%	62.4%	47.6%	45.3%
	Luxembourg	63.4%	67.6%	63.4%	37.0%	37.9%	37.0%	44.2%	47.1%	44.2%
	Namur	66.1%	69.1%	66.1%	40.0%	40.6%	40.0%	47.7%	50.0%	47.7%
	Oost- Vlaanderen	78.1%	NA	NA	54.5%	NA	NA	61.0%	NA	NA
	Vlaams Brabant	78.3%	NA	NA	55.3%	NA	NA	61.6%	NA	NA
	West- Vlaanderen	75.0%	NA	NA	50.9%	NA	NA	57.9%	NA	NA

Note: People residing in institution are excluded from the analysis at Belgian level - see Wallonia and Brussels columns for sensitivity analyses (see section limitation in technical fiche for details); NA= not applicable; Source: IMA data, KCE calculation

Figure 18 – Influenza vaccination coverage by province, by chronic status (2019)

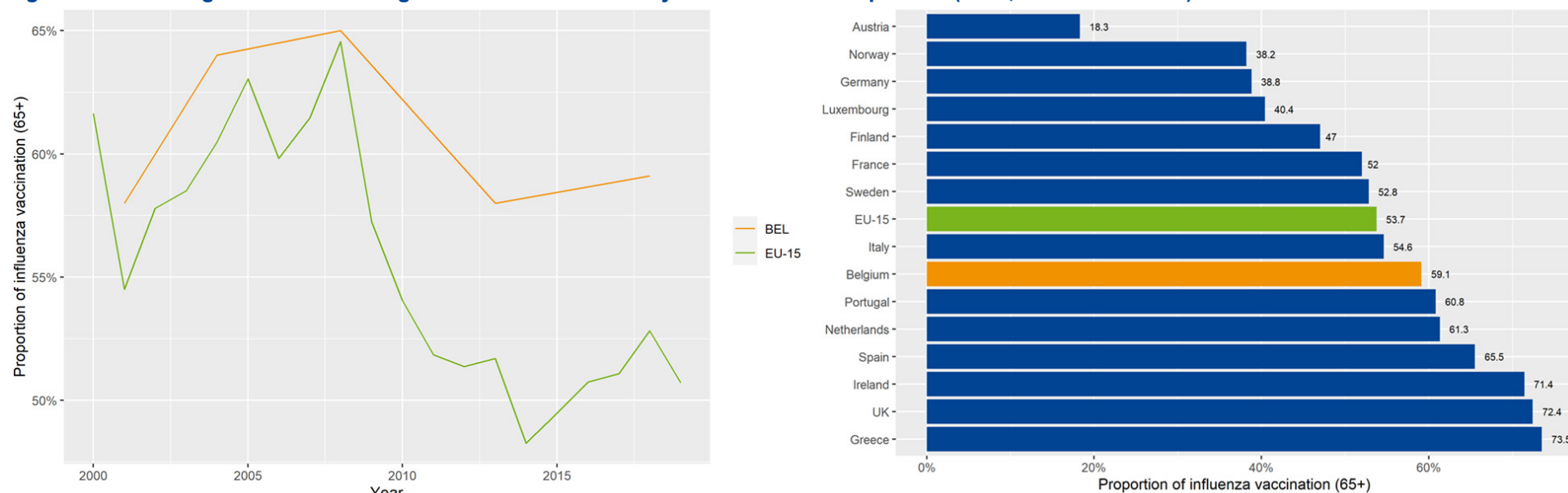


8.2.2. International comparison

International comparisons are based on results from HIS survey. Based on the last results from the Health interview survey, coverage of influenza vaccination in Belgium for 2018 was 59.1% in this age group (this is only slightly superior to the results obtained by the billing IMA data, 55.3%). Compared to other European countries, this is above the EU-15 average (53.7%) (Figure 19).



Figure 19 – Coverage of vaccination against influenza for elderly: international comparison (2018, trend 2000-2020)



Source: Data from Belgium are based on the Health Interview Survey.

Note: fluctuation of the EU-15 is an artefact of the availability of the coverage data of the different countries.



Key points

- In 2019, the vaccination coverage against influenza of people aged 65 years and over (and not residing in an institution) was 55.1%, far below the WHO target of 75% and staid stable since 2013 (56.4%).
- Vaccination rates for 65+ years old (in 2019) are higher in Flanders (60.8%) than in Wallonia (46.1%) and Brussels (44.7%) and globally also higher for people aged 85+.
- The vaccination rate is higher in patients entitled to the status chronic illness than in patients not entitled to the status (2019: chronic 72.3% vs not chronic 48.1%) and the difference in vaccination coverage increased since 2013 (22.5%). Whatever the socio-economic characteristics of the patients, those entitled to the chronic status are always more frequently vaccinated than those without chronic status.
- The elderly entitled to chronic status living in nursing homes (in Wallonia-Brussels) are more frequently vaccinated than the elderly not entitled to chronic status living in nursing homes.
- In 2018, Belgium has a higher influenza vaccination coverage (59.1%) than average EU-15 countries (53.7%).

References

1. Superior Health Council. Vaccination contre la grippe saisonnière Saison hivernale 2017-2018. Brussels: CSS-HGR; 2017. nr. 9418 Available from: https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/css_9418_grippe_saisonniere_2017-2018.pdf
2. WHO. Prevention and Control of Influenza Pandemics and Annual Epidemics,. World Health Organization; 2003. Resolution of the Fifty-Sixth World Health Assembly (WHA56.19) Available from: http://apps.who.int/gb/archive/pdf_files/WHA56/ea56r19.pdf
3. OECD. Health at a Glance 2019: OECD Indicators. Paris: Organisation for Economic Co-operation and Development; 2019. Available from: <https://doi.org/10.1787/4dd50c09-en>
4. Sciensano. Belgian Health Interview Survey – Interactive Analysis. Module: Health and Social Services [Web page].Brussels: Sciensano;2021 [cited December 2021]. Available from: <https://hisia.wiv-isp.be/SitePages/Home.aspx>



9. BREAST CANCER SCREENING (P-6; P-7)

9.1. Documentation sheet

Description	Proportion of women aged 50-69 having received at least one mammogram within the last two years 1. Within the context of the organised screening programme (mammogram with a specific billing code for screening) 2. Within or outside the context of the organised screening programme (all mammograms)
Calculation	Numerator: number of women aged 50-69 in a given year, having received a (screening) mammogram within the year or the preceding year. Denominator: Total number of women aged 50-69 affiliated to a Sickness fund in a given year
Rationale	In Belgium, breast cancer is by far the first female cancer in incidence (10 962 cases in 2019)^h and is also one of the leading cause of death in females (34.6 deaths per 100 000 population in 2017)ⁱ. Mammographic screening is considered an efficient mean to improve the prognosis. Therefore, since 2001 in Flanders and 2002 in Brussels and Wallonia, a national breast cancer screening programme exists for women aged 50-69 years^j. Each woman aged 50 to 69 years receives every 2 years an invitation to participate in the screening programme. The mammograms realised in the programme follow a specific procedure to insure the quality and effectiveness, and have their own RIZIV-INAMI billing codes. The examination is free of charge for the women. Mammograms having the specific reimbursement code are referred to as "organised screening mammograms" in this report in order to distinguish them from the opportunistic screening using mammogram (i.e. outside the programme). The first indicator measures the proportion of women aged 50-69 undergoing a mammogram in the framework of the organised screening, whereas the second measures the proportion of women aged 50-69 undergoing a mammogram within or outside the organised programme (all mammograms). The first indicator measures the success of the organised programme, the second the whole coverage of mammographic screening in Belgium. There is a generally accepted target of 75% for the breast cancer screening coverage.¹
Data source	IMA-AIM atlas (population results); IMA-AIM data (results by chronic status)
Technical definitions	RIZIV-INAMI billing codes: 450192-450203 (mammogram within the screening programme: organised screening mammograms), 450096, 461090 (other mammography). In the IMA-AIM database only the year of birth is available and not the exact date of birth. The age is the difference between the calendar year and the year of birth (snapshot on the 30th of June or the 31st of December). If the woman's age falls between 50 and 69 years, she enters the denominator. A distinction is made between chronic versus non-chronic patients. Status for persons with a chronic illness in IMA-AIM database: entitlement is observed through data from the InterMutualistic Agency (IMA-AIM), variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement and is assumed to suffer from a chronic illness.

^h http://www.kankerregister.org/Statistiques_tableaux%20annuelle (last access: 28 October 2021)

ⁱ <https://www.healthibelgium.be/en/health-status/mortality-and-causes-of-death/overall-mortality-by-cause> (last access: 28 October 2021)

^j <http://www.zorg-en-gezondheid.be/Ziektes/Vlaams-bevolkingsonderzoek-naar-borstkanker/> and <http://www.sante.cfwb.be/index.php?id=cancerdusein0> (last access: 21 October 2021)



Limitations	It is impossible to distinguish opportunistic screening mammograms (i.e. mammogram made for screening purposes but outside the organised programme) from diagnostic mammograms (i.e. mammogram made for diagnostic reasons, e.g. in women with symptoms or at high risk). Since the fraction of diagnostic mammograms among all mammograms is quite low, the rate of mammograms outside the screening is an acceptable proxy of the opportunistic screening.² Women with a bilateral mastectomy and women with a breast cancer have not been excluded from the target population. For all those reasons, the total coverage is likely to be slightly overestimated. The RIZIV-INAMI chronic illness status is allocated on the basis of health expenditure. Some people may be entitled to the status even though they do not actually suffer from a chronic disease and some patients who do suffer from a chronic disease may not be entitled to the status.
International comparability	The OECD publishes the proportion of women aged 50-69 having had a bilateral mammography within the past two years (for the majority of countries), preferably from programme (administrative billing) data, otherwise from survey data; the OECD thus warns for a limited comparability. For Belgium, OECD results are available from IMA-AIM data under the label "programme data".³
Dimension	Accessibility of preventive care
Related indicators	Breast Cancer 5-year survival rate (not calculated in this report, see ⁴) Breast cancer screening mammography in women aged 40-49 (not calculated in this report, see ⁴)

9.2. Results

9.2.1. Belgium

The total coverage of breast cancer screening was 59.7% in 2019.⁵ This coverage has improved at the early 2000s (it was 43% in 2003) but slightly decreased since 2016 (62%). From 2003 to 2019, the organised screening programme coverage has risen from 21.5% to 33.0% (see Figure 20). Despite these increases, the overall coverage is still lower than the 75% European target screening rate.⁶

The total breast cancer screening coverage (organised screening mammograms and other mammograms) is higher for younger women (50-54 years) within the target age group (50-69 years) (see Table 14).

In both organised and global screening, vulnerable women (those entitled to increased reimbursement) have lower coverage than the remaining population (respectively 22.4% versus 34.6% and 45.5% versus 63.1% in 2019) (see Table 14). This is in line with evidence from other countries: several countries have income inequalities in breast cancer screening (e.g. Czech Republic, Denmark, France, New Zealand and Poland).⁷ The breast

cancer screening coverage by level of income is considered by the OECD as an indicator of access of care; see also the *equity and inequalities* section in Devos et al., 2019⁴.

The organised screening coverage was still higher in Flanders (50.1%) than in Brussels (10.4%) and Wallonia (4.7%) in 2019 (see Table 14, Figure 20).

9.2.2. By RIZIV-INAMI status for persons with chronic illness

In 2019, the **patients with chronic illness status participated less frequently** in the organised **screening mammograms** than the patients without chronic disease status (chronic status: 28.2% vs not chronic status: 33.0%, difference: 4.8%). This is also the same conclusion for the total breast cancer screening coverage (organised screening mammograms and other mammograms) (chronic status: 58.8% vs not chronic status: 59.9%, difference: 1.1%), but the difference is less important (see Table 14).

Looking at the results by age group, we observed that **women aged 65-69 with chronic illness status still participated more frequently in the organised** screening mammograms than women of the same age but without chronic status. However, this is no longer the case when looking at the total number of mammograms. In this case, it is mainly younger women



(50-59 years) with chronic status who are more frequently covered than patients of the same age without chronic status. In other words, young women with chronic disease are more frequently covered by mammography than young women without chronic disease (see Table 14). Analyses of the breast cancer screening coverage by age group and by region have also been performed to further explore these important observations.

In the women entitled to the chronic illness status in Flanders, the youngest women (50-54 years) are the most frequently covered by the organised breast cancer screening program. In Brussels and Wallonia, the organised breast screening coverage increases with age. When looking at the patients not entitled to the chronic status, the observation is the same as in the chronic patients in Brussels and Wallonia but in Flanders, this is the women aged 60-64 years who are the most frequently covered by breast cancer screening (see Table 15). In Flanders, the patients who are not entitled to the chronic illness status are more frequently covered by the organised breast screening program than the patients with the chronic status whatever the age group. In Brussels, the observation is the opposite, women with chronic illness status are more frequently covered by the breast screening the women without the chronic status. In Wallonia, the results by chronic status are more heterogeneous, in the age-group 55-65 years, chronic patients are more frequently covered by the organised breast screening than the non-chronic patients and in the other age-groups, this is the women entitled to the chronic status who are less frequently covered by the breast screening than the non-chronic patients (see Table 15).

When looking at the total mammograms, **the youngest women (50-54 years) are the most frequently covered by breast screening whatever the region** (Wallonia, Brussels or Flanders) **and the chronic status** (entitled or not). In Brussels and Wallonia, the women entitled to the chronic illness status are more frequently covered by mammograms in every age group. In Flanders, results are the opposite, the women entitled to the chronic status are less frequently covered than the women without chronic illness status (see Table 15).

In both organised screening mammograms and total mammograms groups, vulnerable women (those entitled to increased reimbursement) with chronic status have a lower coverage than the women without chronic illness status. However, by looking at the total mammograms, **vulnerable women with chronic illness status are more covered than the women with vulnerable status but without chronic illness** (vulnerable and chronic status: 47.8% vs not vulnerable and chronic status: 44.4%) (see Table 14).

In Brussels and Flanders, the women without chronic illness status are more frequently covered by the organised screening program than the women with chronic illness status. In Wallonia, the proportions are the same whatever the chronic status. By looking at the **total mammograms**, conclusions are quite different. In this case, **women who suffer from a chronic illness and live in Brussels and Wallonia are more covered** than the women without chronic illness from the same regions. **In Flanders, the women with chronic illness status are less covered** than women without chronic illness status (chronic status: 63.0% vs not chronic status: 65.7%) (see Table 14).

Since 2014, the coverage rate does not vary much, either for chronic or non-chronic patients and among the organised screening mammograms or total mammograms.

Among non-chronic patients and total mammograms, we observe that **Flanders maintains a better coverage rate than the other regions over time** with a coverage that remains around 68%, while a slight decrease in coverage is observed in Wallonia and Brussels. In 2019, a better coverage rate is observed in Wallonia, which was not the case in 2014. Among patients with chronic status, the coverage trend remains almost identical since 2014. The coverage rate is better in Flanders than in Brussels and Wallonia.

Among screening organised mammograms, Flanders maintains a rate of around 50% in non chronic patients and of 45% in chronic patients, whereas Brussels and Wallonia report rates around 12 and 8% whatever the chronic status (see Figure 22 and Figure 24).



Table 14 – Coverage (in %) of breast cancer screening in women 50-69 years old (organised screening mammograms and total mammograms coverage) (2019), by chronic disease status

Variable	Category	Organised screening mammograms	Organised screening mammograms	Organised screening mammograms	Total coverage	Total coverage	Total coverage
		Chronic status	Not chronic status	Total	Chronic status	Not chronic status	Total
Age (years)	50-54	29.9	33.8	33.3	64.5	64.3	64.3
	55-59	26.2	29.5	29.0	56.7	56.0	56.1
	60-64	30.1	35.8	34.8	59.9	61.2	60.9
	65-69	27.0	33.4	32.0	55.8	57.5	57.1
	Total (50-69)	28.2	33.0	32.2	58.8	59.9	59.7
Entitlement to increased reimbursement	No	31.7	35.0	34.6	65.2	62.8	63.1
	Yes	22.1	22.6	22.4	47.8	44.4	45.5
Region of residence	Brussels	12.0	10.0	10.4	55.5	50.0	51.0
	Flanders	45.6	50.9	50.1	63.0	65.7	65.3
	Wallonia	4.7	4.7	4.7	53.2	51.1	51.5
Province of residence	Bruxelles-Capitale	12.0	10.0	10.4	55.5	50.0	51.0
	Antwerpen	43.1	48.8	47.9	61.0	64.6	64.1
	Limburg	54.3	60.4	59.3	67.0	69.1	68.8
	Oost-Vlaanderen	46.5	52.1	51.2	64.0	66.8	66.3
	Vlaams Brabant	39.0	42.8	42.3	63.0	64.7	64.4
	West-Vlaanderen	46.5	53.1	52.1	61.3	64.7	64.1
	Hainaut	6.9	7.0	4.9	59.4	57.3	52.2
	Liège	5.0	4.9	3.1	53.9	51.8	49.2
	Luxembourg	3.0	3.1	7.3	51.5	48.8	46.8
	Namur	7.6	7.2	4.7	49.0	46.4	51.8
	Brabant Wallon	4.9	4.7	7.0	52.2	51.8	57.5

Source: IMA Atlas 2019



Table 15 – Coverage (in %) of breast cancer screening in women (organised screening mammograms and total mammograms coverage), by chronic disease status, by age and by region (2019)

Chronic - organised				
	Brussels	Wallonia	Flanders	Belgium
50-54	10.3	3.7	49.1	29.9
55-59	12.0	4.7	41.5	26.2
60-64	12.5	5.2	48.6	30.1
65-69	12.9	5.0	44.0	41.5
Total (50-69)	12.0	4.7	45.6	28.2
Not chronic - organised				
	Brussels	Wallonia	Flanders	Belgium
50-54	8.8	3.8	52.8	33.8
55-59	10.0	4.5	44.9	29.5
60-64	10.9	5.1	55.1	35.8
65-69	10.8	5.7	51.1	33.4
Total (50-69)	10.0	4.7	50.9	33
Chronic - total				
	Brussels	Wallonia	Flanders	Belgium
50-54	63.1	58.3	68.6	64.5
55-59	55.0	54.1	58.5	56.7
60-64	52.9	52.7	65.5	59.9
65-69	52.5	49.5	60.6	55.8
Total (50-69)	55.5	53.2	63.0	65.2
Not chronic - total				
	Brussels	Wallonia	Flanders	Belgium
50-54	54.3	55.6	70.2	64.3
55-59	48.6	51.2	59.4	56.0
60-64	48.4	49.3	69.1	61.2
65-69	47.4	47.5	64.1	57.5
Total (50-69)	50.0	51.1	65.7	59.9



Figure 20 – Coverage of breast cancer screening (all mammograms) in women 50-69 years old, by region, year (organised left side; total right side)

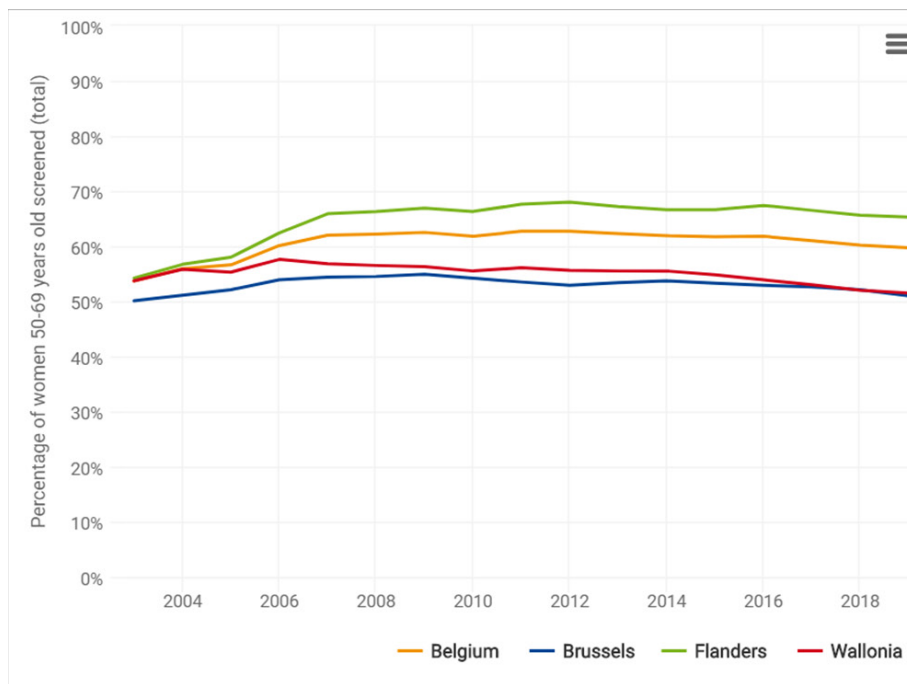
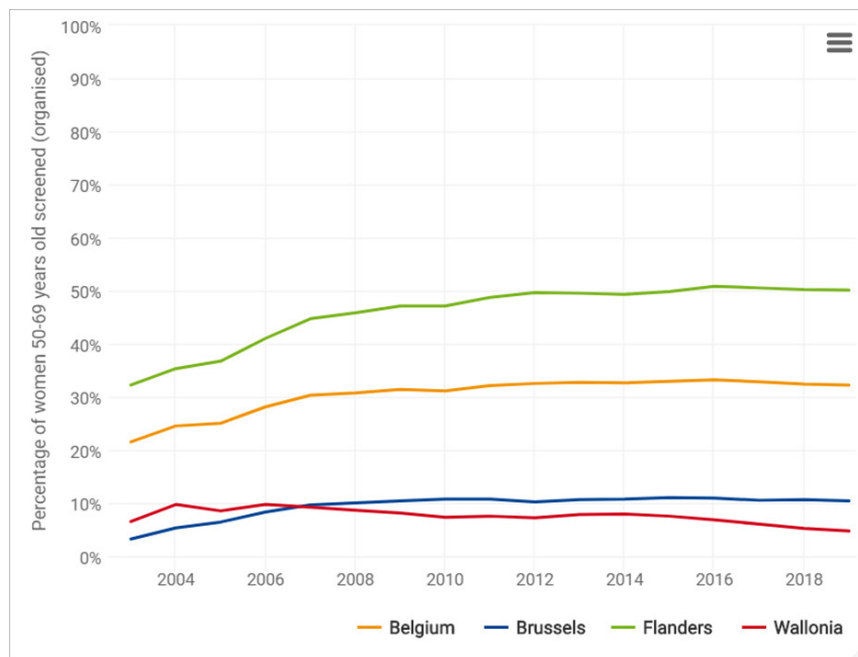
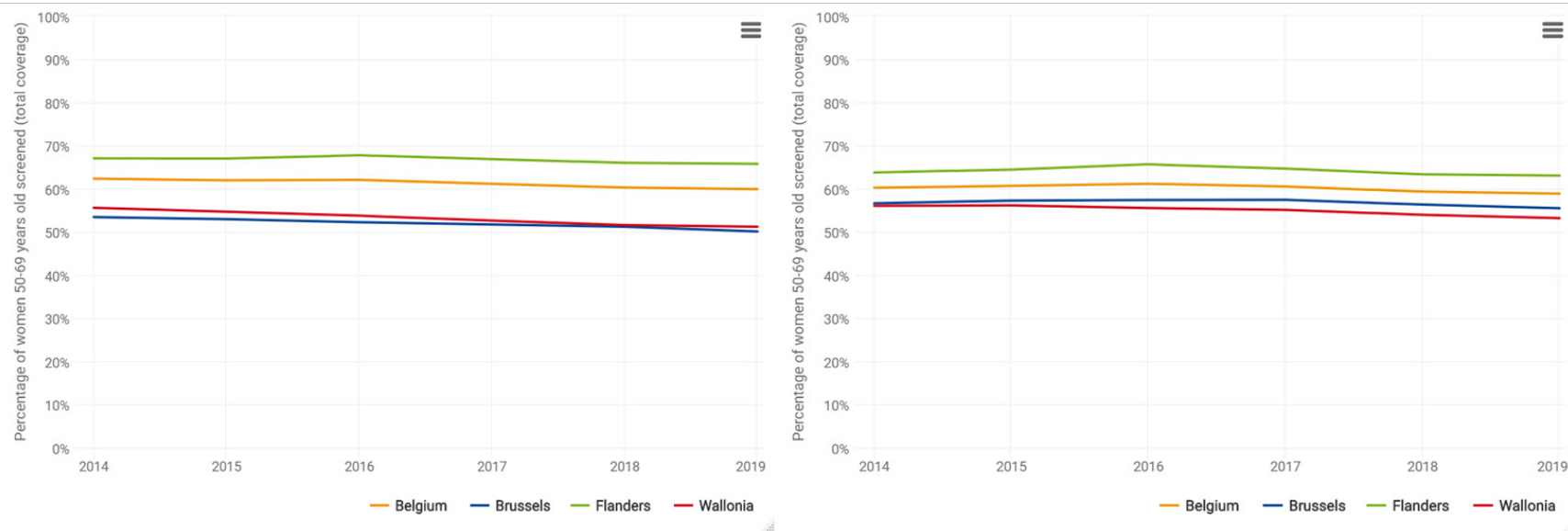




Figure 21 – Coverage of breast cancer screening (all mammograms) in women 50-69 years old, by region, year and NIDHI chronic disease status (not chronic disease status left side; chronic disease status right side)



Data: IMA – AIM (2014-19); figure: KCE



Figure 22 – Coverage of breast cancer screening (organised mammograms) in women 50-69 years old, by region, year and NIDHI chronic disease status (not chronic disease status left side; chronic disease status right side)

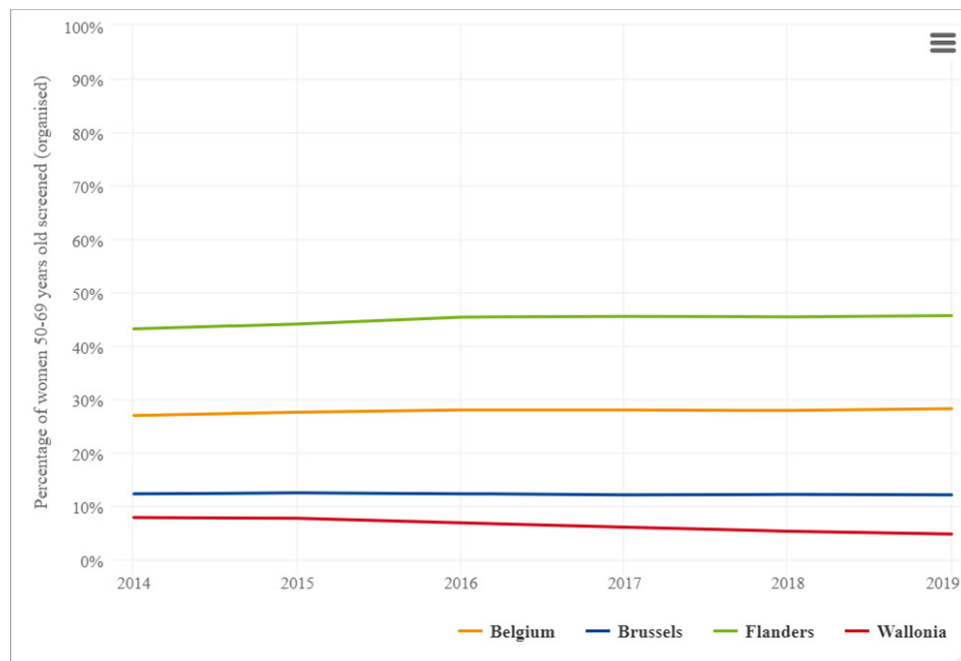
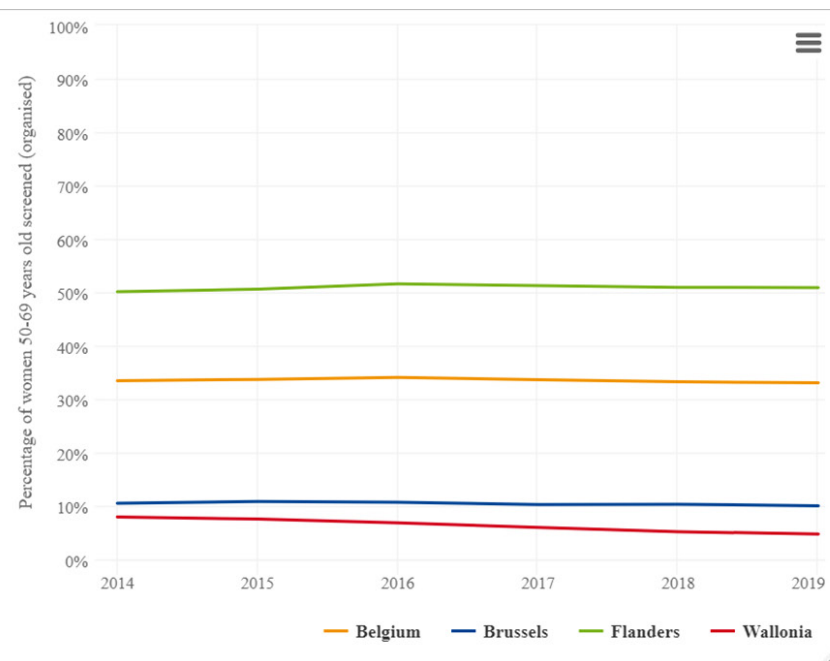
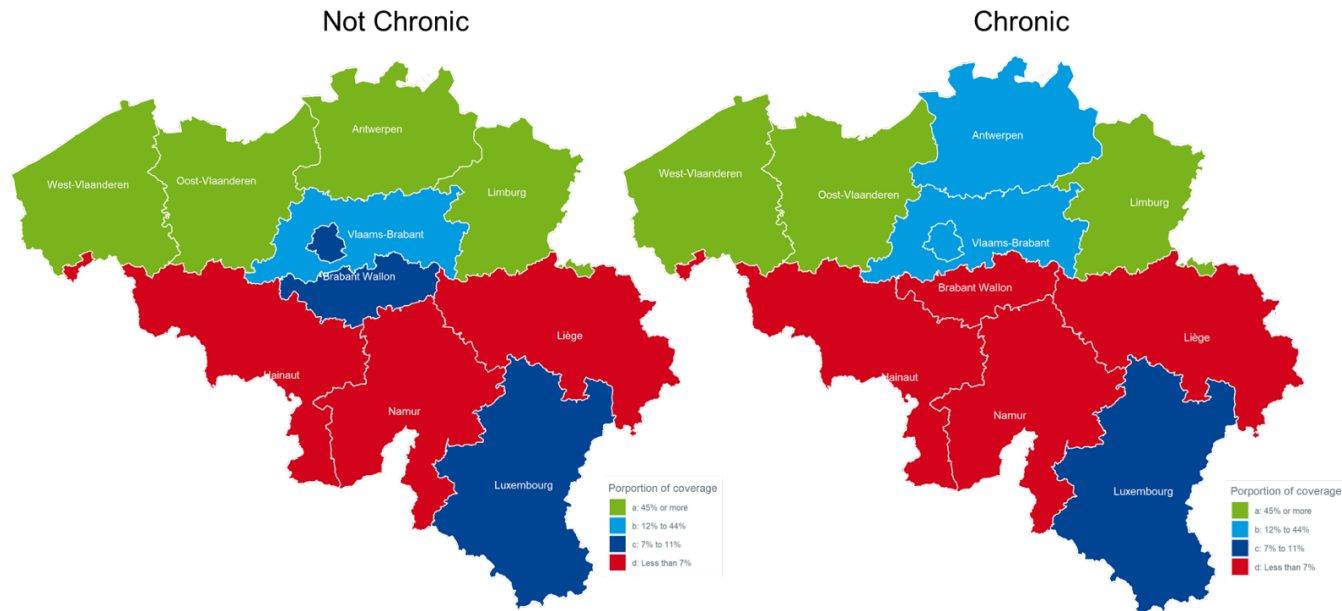
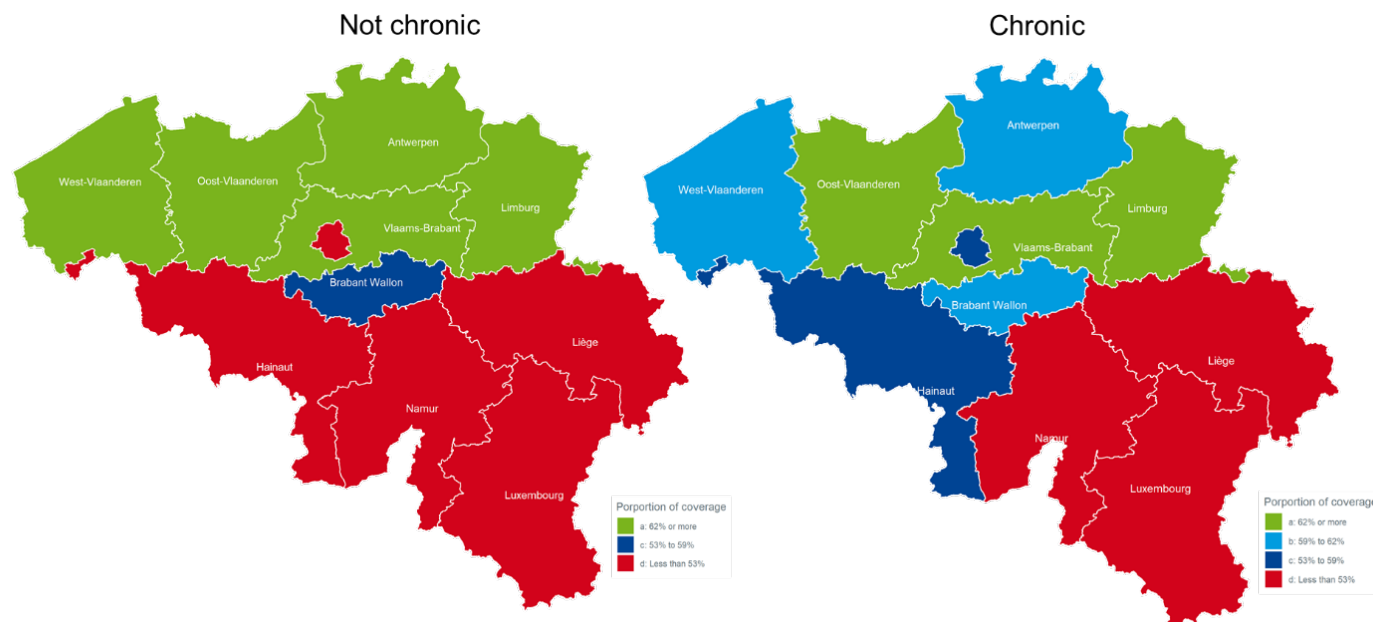


Figure 23 – Coverage of breast cancer screening (organised) in women 50-69 years old, by province (2019) and by chronic status (not chronic: left side; chronic right side)



Data: IMA – AIM 2019, figure KCE

Figure 24 – Coverage of total mammograms in women 50-69 years old, by province (2019) and by chronic status (not chronic: left side; chronic right side)



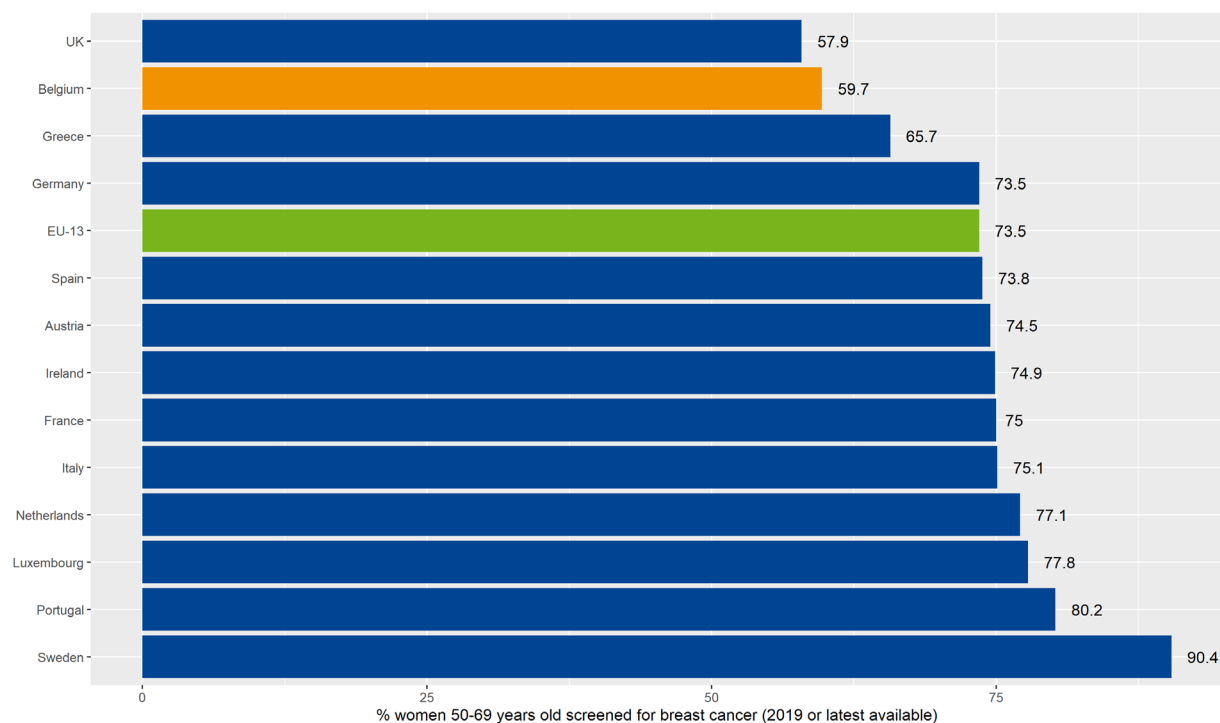
Data: IMA – AIM 2019, figure KCE

9.2.3. International comparison

Only the total mammogram coverage can be compared with other countries; comparisons should be taken with caution, as they mix survey and programme data. The Belgian coverage is below the EU-13 average (59.7% vs 73.5%). In 2019, six countries reach the 75% target coverage: France, Italy, Netherlands, Luxembourg, Portugal and Sweden (Figure 25).



Figure 25 – Coverage of breast cancer screening: international comparison (2019 (or latest available year))



Source: OECD Health statistics 2021, for Belgium IMA atlas, Figure KCE, 2014= UK, Sweden, Germany, France; 2015=Ireland; 2019: Austria, Belgium, Greece, Italy, Luxembourg, Netherlands, Portugal; 2020: Spain



Key points

- **The total coverage of breast cancer screening was 59.7% in 2019. This coverage has improved in the early 2000s (it was 43% in 2003) but slightly decreased since 2016 (62%). In 2019, Flanders reached the highest rate at 65.3% while the lowest rate of 51.0% was achieved in Brussels (51.5% in Wallonia).**
- **The breast cancer screening coverage in Belgium fails to achieve the commonly accepted target of 75%, which is reached by France, Italy, the Netherlands, Luxembourg, Portugal and Sweden in 2019. It is also lower than the EU average (73.5%).**
- **Overall patients with RIZIV-INAMI chronic illness status are less covered by a mammogram than non-chronic patients (organised or total mammograms). However, this result varies according to age group, vulnerable status (entitled to increased reimbursement) and region. Younger women (50-59 years) with chronic illness status are more frequently covered by breast cancer screening (total mammograms) than women of the same age without chronic illness.**

References

1. Programme EAC, Actions ECRP, Health ECD-Gf, Protection C. European guidelines for quality assurance in mammography screening. Office for Official Publications of the European Communities; 2006.
2. Mambourg F, Robays J, Camberlin C, Vlayen J, Gailly J. Breast cancer screening with mammography for women in the agegroup of 40-49 years. Good Clinical Practice (GCP). Brussels: Belgian Health Care Knowledge Centre (KCE); 2010 07/07/2010. KCE Reports 129 Available from: <https://kce.fgov.be/publication/report/breast-cancer-screening-with-mammography-for-women-in-the-agegroup-of-40-49-years>
3. OECD/EU. Health at a Glance: Europe 2018: State of Health in the EU Cycle. Paris: OECD; 2018.
4. Devos C, Cordon A, Lefèvre M, Obyn C, Renard F, Bouckaert N, et al. Performance of the Belgian health system – Report 2019. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2019 04/2019. KCE Reports 313 Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_313C_Performance_Belgian_health_system_Report.pdf
5. IMA-AIM. Programme de Dépistage du Cancer du Sein. Périodes 2002-2003 et 2004-2005. 2007 2007, September.
6. OECD. Health at a Glance: Europe 2014. OECD Publishing; 2014.
7. OECD. Health at a Glance 2013: OECD indicators. 2013. Available from: https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2013_health_glance-2013-en



10. REGULAR CONTACTS WITH A DENTIST (P-11)

10.1. Documentation sheet

Description	Proportion of the population with a “regular contact with a dentist” (defined as at least 2 contacts in 2 different years during the last three years)
Calculation	Numerator: number of individuals 3 years old and older who had a contact with a dentist at least twice in 2 different years during the last three years. Denominator: number of individuals aged 3 years and older.
Rationale	Oral health is a condition in which people can eat, speak and socialize without (oral) disease, discomfort or embarrassment.¹ While having good levels of oral health is important in itself, it has also been linked to general health.² Fortunately, some oral disorders (like dental caries and dental erosion) can be prevented. Regular dental visits not only enable the diagnosis and treatment of any dental problem in an early stage, they also help to prevent such problems through dietary and oral hygiene advice and the delivery of professional prophylaxis (i.e. the removal of dental plaque and calculus, the application of fluoride and sealants). Several studies demonstrated (inter- and intra-country) socioeconomic inequalities in access to oral healthcare, oral health and oral health related behaviour (e.g. toothbrushing).²⁻⁷
Data source	Main indicator: IMA – AIM data Secondary analyses: HIS 2018 (Interactive analysis – Module Health and Social Services)⁸ and HISLink 2013/2018 data (see section ‘related indicators’ below) In the HISLink project, Sciensano performed a linkage between Health Interview Survey (HIS) 2013 and 2018 and IMA – AIM data (2013/2018), partly to verify the HIS reporting on the use of care but also to overcome the shortcomings of the health insurance data (e.g. information on non-reimbursed health care use is lacking, no link between health care use and health needs, information on socio-demographic background characteristics is scarce). Data extracted from the HIS are covering the following topics: socio-demographic characteristics, health status, lifestyle and health care use.
Indicator source	IMA-AIM Atlas, HIS
Technical definitions	Contact definition: all RIZIV – INAMI billing codes belonging to N group 04 (dental care provided by general dental practitioners, periodontists, orthodontists, or medical specialists in stomatology). Hereafter, the term ‘dentist’ is used to cover all these dental care specialists. In the previous HSPA reports, codes belonging to N group 16 (care provided by maxilla-facial surgeons) were also considered. Chronic definitions: 1) IMA – AIM: Individuals entitled to the status chronic illness. Entitlement is observed through data from the InterMutualistic Agency (IMA – AIM), variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement and is assumed to suffer from a chronic condition.



	2) HIS: The number of persons reporting to suffer from a chronic disease by answering “yes” to the following question in the HIS; the denominator is the number of respondents of the following question in the HIS (MA_SH02): “Do you suffer from a chronic disease or condition?”
International comparability	This is not an international indicator. The definition of “regular contact with a dentist” varies from one country to another; the most frequently used indicator is yearly contact.
Limitation	HIS excluded population under 15 years.
Dimension	Access to dental care
Secondary indicators	Proportion of people (aged 15 and over) that consulted a dental care specialist (dentist, orthodontist or other dental care specialist) in the last 12 months (HIS). Proportion of people (aged 15 and over) that never consulted a dental care specialist (dentist, orthodontist or other dental care specialist) in the last 12 months, by chronic status (HIS). For these secondary indicators, based on the HIS, the term ‘dental care specialist’ is used rather than ‘dentist’ to easily make the distinction between the main indicator based on IMA – AIM data and these secondary indicators.



10.2. Results

10.2.1. Belgium

The proportion of the population who had at least two dental visits in two different years in the last three years (regular contact with a dentist)

The proportion of the population who had at least two dental visits in two different years in the last three years increased from 49.5% in 2014 to 55.3% in 2019 (Table 16). The increase in the last years may (in part) be attributed to the information campaigns of the health insurance funds and the dental professional associations on the upcoming dental care programme ('Mondzorgtraject' – 'Trajet de soins bucco-dentaires')^k which was established on 1 July 2016.⁹ During the 2014-2019 period, a higher increase in the regular attendance rate can be observed for patients with the chronic illness status (+9.7 percentage points) than without the status (+5.5 percentage points). The difference between people with and without the chronic illness status was therefore more pronounced in 2014 (43.4% vs. 50.1%, RR: 0.87) than in 2019 (53.1% vs. 55.6%, RR: 0.96).

The proportion of the population with a regular dental contact in 2019 is the highest in children and adolescents (68.6% and 71.8% for the age groups 5-14 years and 15-17 years, respectively), which is not surprising since there is full reimbursement for the majority of preventive and restorative procedures for all children under 18 years since 2009. In addition, this is the age span in which many children receive orthodontic diagnosis and/or treatment. It is remarkable that in most age groups, the subgroup with chronic illness status was more likely to have a regular contact with a dentist

than compared to the subgroup without. The difference becomes smaller at age 65 and is reversed from age 75 onwards. The overall lower dental attendance rate for people with the chronic illness status than for people without the chronic illness status is therefore mostly due to the elderly. Indeed, there is a higher fraction of elderly among persons with chronic illness status.

If we look at the distribution between regions, the regular dental attendance rate was, in 2019, for the whole population higher in Flanders (60%) than in Wallonia (51%) and Brussels (50%) (see Table 16). When a distinction is done based on the chronic illness status, differences between regions are reduced and the regular attendance rate was the highest in Brussels (56.5%) and the lowest in Wallonia (49.7%) for people with the chronic illness status (in 2019 but also in the previous years) (see Table 16; Figure 26). It should also be noted that in Brussels, the proportion of people with regular dental attendance is slightly higher for people with a chronic illness status than for people without such a status, while in Flanders and Wallonia, it is the opposite. As said above, this result is also related to an age effect, with much lower attendance rates among the elderly and a higher fraction of older people in the group with chronic illness status.

When looking at the data by district in 2019, Nivelles (58.6%) and Hal (58.1%) have the highest proportions of chronic patients with regular dental visits, whereas Neufchâteau (42.7%), Virton (41.5%) and Arlon (38.5%) have the lowest proportions of chronic patients with regular dental visits (see Figure 27). In the subgroup without chronic illness status, Maaseik (65.7%), Turnhout (63.9%) and Hasselt (63.7%) have the highest proportion of patients with regular dental visits and Charleroi (44.8%), la Louvière (44.0%) and Arlon (42.4%) have the lowest proportions (see Figure 27).

^k The concept of the dental care program ('Mondzorgtraject' – 'Trajet de soins bucco-dentaires') ensures that citizens of 18 years and older who have a dental appointment (during which a reimbursed procedure is performed) every calendar year receive a higher reimbursement (i.e. have a smaller personal share) for curative care (e.g. dental restorations, extractions, prostheses) than those who do not attend a dentist regularly. The following

procedures are not included in the dental care programme: consultations, preventive care, orthodontics, periodontics and dental radiographs. The dental care programme should not be confused with the 'continuity rule', which stipulates (for a long time already) that the reimbursement for a professional dental debridement is halved for citizens who had no reimbursed dental care during the previous year.


Table 16 – Proportion of people with regular contact with a ‘dentist’ (N04), by year, chronic status, and patient characteristics (2014-2019)

Variable	Category	Proportion		
		People with the chronic illness status	People without the chronic illness status	Whole population
Year	2014	43.4%	50.1%	49.5%
	2015	46.1%	52.2%	51.6%
	2016	48.9%	54.3%	53.7%
	2017	50.8%	55.4%	54.9%
	2018	51.5%	55.4%	55.0%
	2019	53.1%	55.6%	55.3%
Age (2019) (years)	3-4	21.8%	16.6%	16.6%
	5-14	77.7%	68.3%	68.6%
	15-17	79.2%	71.6%	71.8%
	18-24	64.5%	53.5%	53.8%
	25-44	65.1%	52.5%	53.1%
	45-64	62.6%	58.6%	59.1%
	65-74	55.0%	54.9%	54.9%
	75+	37.3%	40.4%	39.1%
Province (2019)	Antwerpen	54.1%	59.4%	58.8%
	Brabant Wallon	58.6%	56.9%	57.1%
	Brussels	56.5%	49.3%	50.1%
	Hainaut	44.2%	46.0%	45.7%
	Liège	56.0%	55.9%	55.9%
	Limburg	56.3%	63.7%	62.7%
	Luxembourg	43.1%	49.2%	48.5%
	Namur	47.2%	50.8%	50.4%
	Oost-Vlaanderen	52.8%	59.9%	59.0%
	Vlaams Brabant	57.6%	61.0%	60.6%
Region (2019)	West-Vlaanderen	54.0%	61.3%	60.3%
	Brussels	56.5%	49.3%	50.1%
	Flanders	54.7%	60.7%	60.0%
	Wallonia	49.7%	51.2%	51.0%

Source: IMA – AIM

Note: Regular contact is defined as two contacts in two different years in the last three years.


Table 17 – Number of people with regular contact with a ‘dentist’ (N04), by year, chronic status, and patient characteristics (2014-2019)

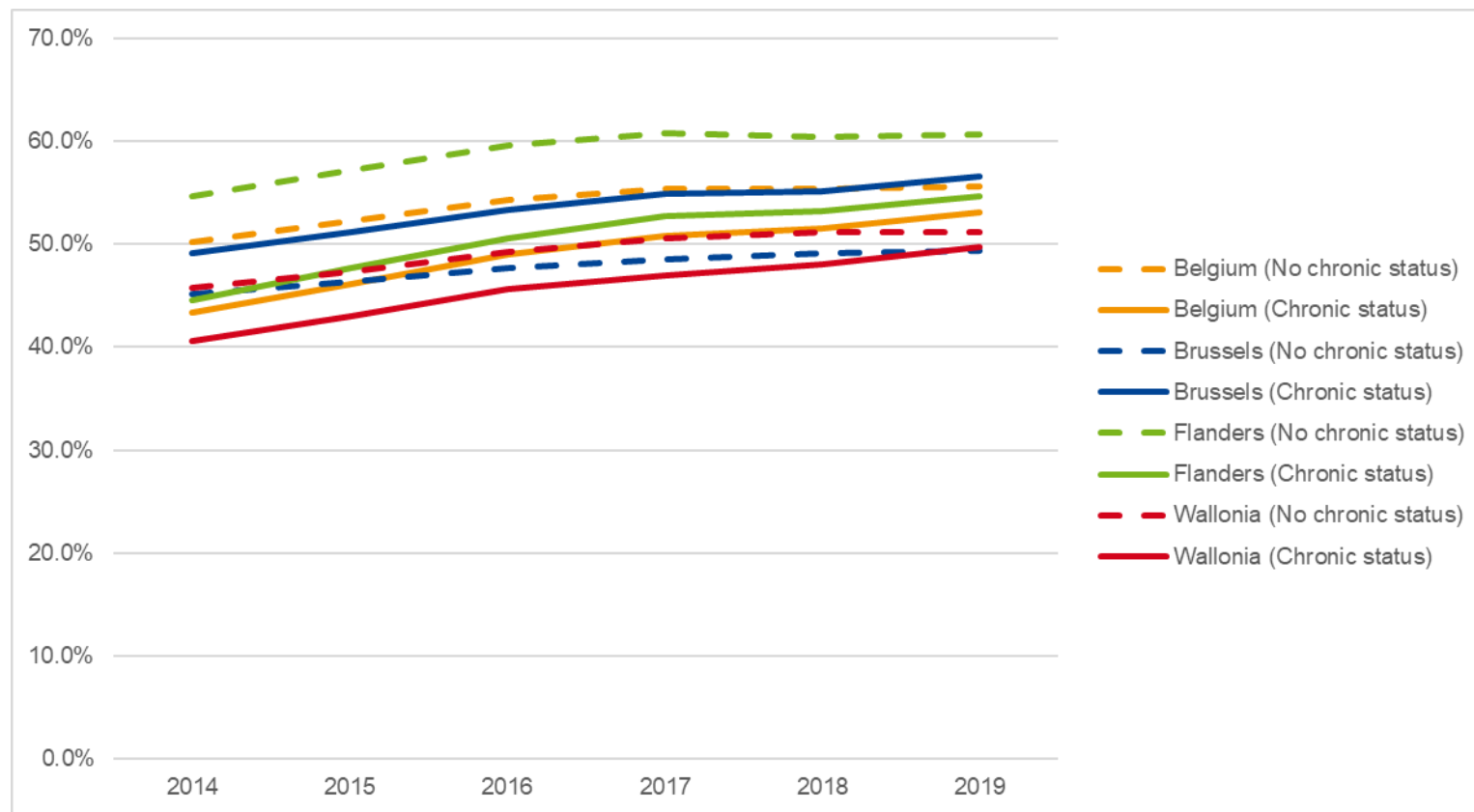
Variable	Category	Number (Numerator / Denominator)		
		People with the chronic illness status	People without the chronic illness status	Whole population
Year	2014	412 626 / 951 371	4 781 072 / 9 535 204	5 193 698 / 10 486 575
	2015	476 053 / 1 031 958	4 965 492 / 9 504 838	5 441 545 / 10 536 796
	2016	537 192 / 1 097 839	5 153 520 / 9 494 600	5 690 712 / 10 592 439
	2017	579 340 / 1 139 955	5 268 288 / 9 506 853	5 847 628 / 10 646 808
	2018	611 637 / 1 186 955	5 267 394 / 9 511 631	5 879 031 / 10 698 586
	2019	679 897 / 1 280 219	5 270 161 / 9 475 027	5 950 058 / 10 755 246
Age (2019) (years)	3-4	604 / 2 766	39 146 / 236 213	39 750 / 238 979
	5-14	31 127 / 40 070	847 263 / 1 240 983	878 390 / 1 281 053
	15-17	6 397 / 8 074	254 279 / 355 059	260 676 / 363 133
	18-24	11 642 / 18 050	455 445 / 850 622	467 087 / 868 672
	25-44	85 574 / 131 420	1 400 867 / 2 667 640	1 486 441 / 2 799 060
	45-64	23 1648 / 370 047	1 537 768 / 2 625 018	1 769 416 / 2 995 065
	65-74	149 854 / 272 522	492 485 / 897 827	642 339 / 1 170 349
	75+	163 051 / 437 270	242 908 / 601 665	405 959 / 1 038 935
Province (2019)	Antwerpen	102821 / 190 106	918 938 / 1 546 938	1 021 759 / 1 737 044
	Brabant Wallon	23946 / 40 839	191 334 / 336 344	215 280 / 377 183
	Brussels	57577 / 101 902	442 912 / 897 622	500 489 / 999 524
	Hainaut	74905 / 169 345	500 481 / 1 088 378	575 386 / 1 257 723
	Liège	75726 / 135 162	496 277 / 888 066	572 003 / 1 023 228
	Limburg	60881 / 108 060	447 691 / 702 610	508 572 / 810 670
	Luxembourg	11162 / 25 897	89 673 / 182 210	100 835 / 208 107
	Namur	26659 / 56 435	210 361 / 414 030	237 020 / 470 465
	Oost-Vlaanderen	91008 / 172 279	761 703 / 1 271 789	852 711 / 1 444 068
	Vlaams Brabant	68243 / 118 469	582 497 / 954 736	650 740 / 1 073 205
	West-Vlaanderen	85125 / 157 568	602 957 / 984 300	688 082 / 1 141 868
Region (2019)	Brussels region	57 577 / 101 902	442 912 / 897 622	500 489 / 999 524
	Flemish region	408 078 / 746 482	3 313 786 / 5 460 373	3 721 864 / 6 206 855
	Walloon region	212 398 / 427 678	1 488 126 / 2 909 028	1 700 524 / 3 336 706

Source: IMA – AIM

Note: Regular contact is defined as two contacts in two different years in the last three years.



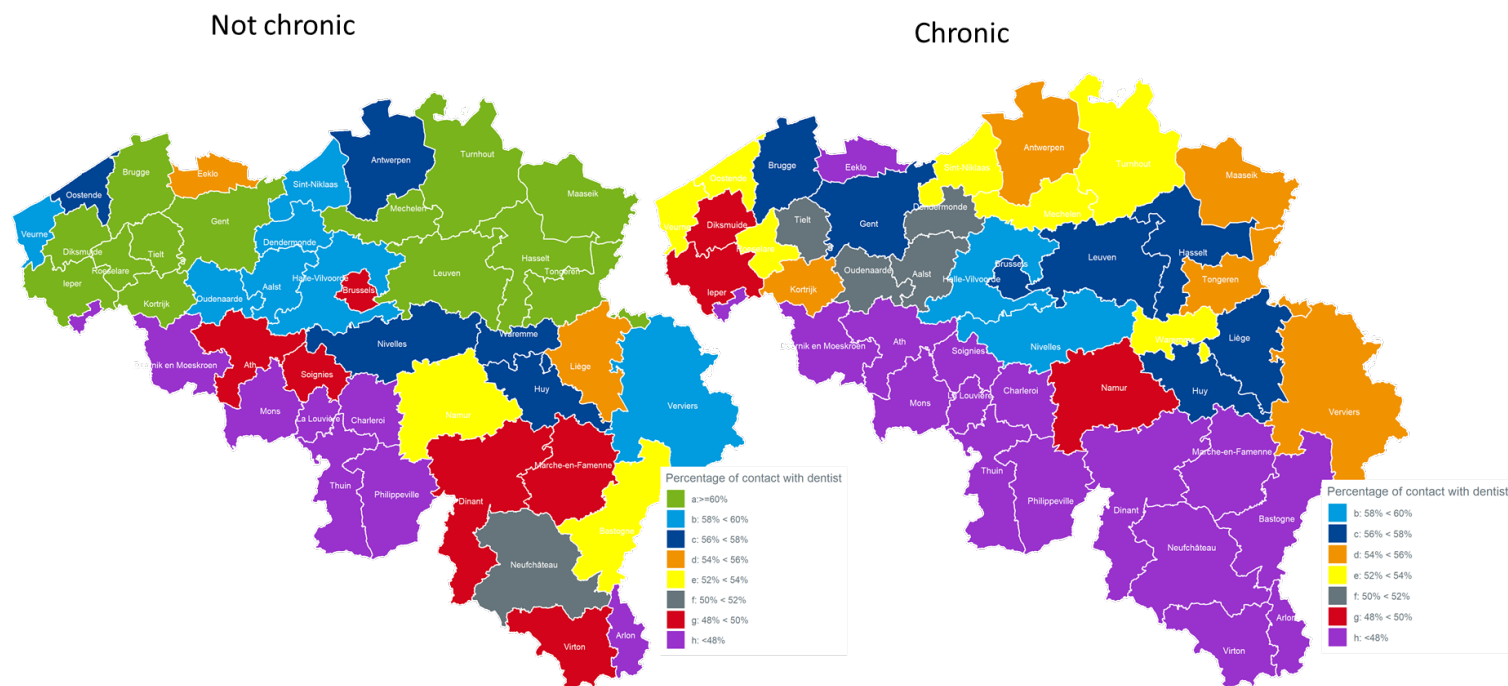
Figure 26 – Regular contact with a dentist, by chronic illness status and region (2014-2019)



Source: IMA – AIM

Note: Regular contact is defined as two contacts in two different years in the last three years.

Figure 27 – Regular contact with dentist, by district, by chronic status, 2019



Source: IMA – AIM

Note: Regular contact is defined as two contacts in two different years in the last three years.

**The proportion of people (15+) that consulted a dental care specialist in the last 12 months**

Results presented in the previous sections, which are based on billing IMA – AIM data, are in line with the results reported in the 2018 Health Interview Survey (interactive analysis), in which 67.7% of the respondents reported that they had consulted a dental care specialist in the preceding year. Likewise, variation across age groups was observed with the highest rate in the 2-14 years old age group (75.4%) and the lowest in the seniors (aged 75 or older, 43.0%). The higher attendance rates in the Health Interview Survey were expected as they are based on self-report.^{8, 10}

The Health Interview Survey (interactive analysis) further revealed important sociodemographic differences, even after correction for age and gender: only 40.1% of the group with the lowest educational level (primary or no degree) reported having seen a dental care specialist in the preceding year and this proportion increases up to 78.1% in the group who had taken the highest education level (superior education).

Based on the HiSLink 2018 data, linking HIS and IMA-AIM data, a lower proportion of patients (aged 15 years and over) entitled to the chronic illness

status reported having consulted a dental care specialist in the last 12 months compared to patients without a chronic illness status (chronic illness status: 58.3% vs no chronic illness status: 67.3%); this difference was also observed in 2013 and in every region. The same observation can also be done concerning patients with/without self-reported chronic disease (see Table 3). Nevertheless, the difference is somewhat more pronounced based on the chronic illness status (chronic illness status: 58.3% vs. not chronic: 67.3%; -9 percentage points) than based on self-reported chronic disease (self-reported chronic disease: 62.7% vs. no self-reported chronic disease: 68.7%; -6 percentage points) (see Table 18 and Figure 28).

HiSLink 2013 and 2018 data usually also showed an increase in the proportion of people who consulted a dental care specialist between 2013 and 2018. Such observation is done in every region and chronic subgroup, except in Brussels concerning patients that both have the chronic illness status and that have self-reported a chronic disease, for whom a decrease in the proportion is observed (-9 percentage points between 2013 and 2018) (see Table 18).

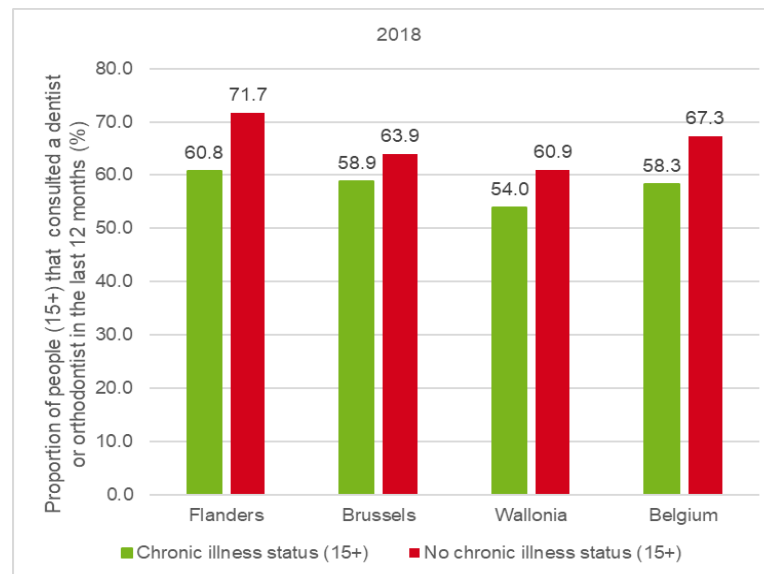
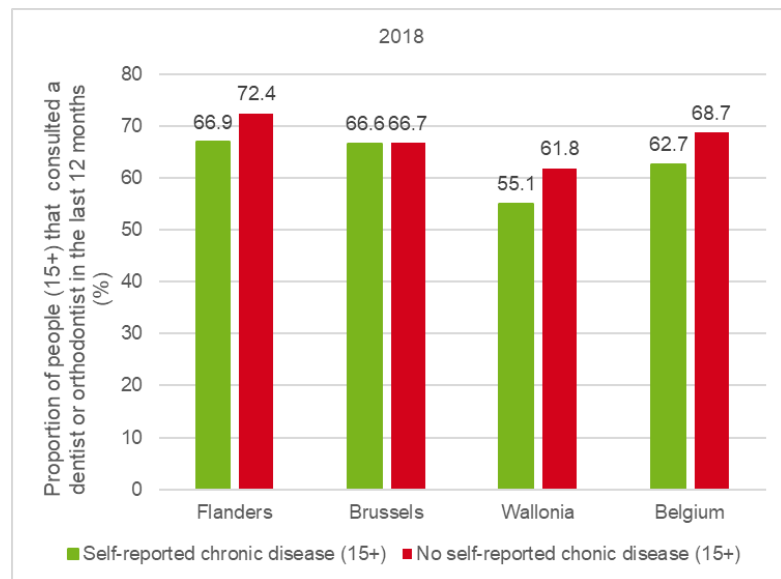
Table 18 – Proportion of people (15+) that consulted a dental care specialist in the last 12 months, by region, chronic status, and year (2013 and 2018)

	Belgium			
	2013		2018	
	%	95% CI	%	95% CI
Self-reported chronic disease (15+)	56.3	(53.0-59.5)	62.7	(60.0-65.3)
No self-reported chronic disease (15+)	62.6	(60.5-64.7)	68.7	(66.8-70.5)
Chronic illness status (15+)	47.6	(43.3-52.0)	58.3	(54.6-62.0)
No chronic illness status (15+)	61.4	(59.7-63.2)	67.3	(65.8-68.9)
Self-reported chronic disease and chronic illness status (15+)	51.2	(45.1-57.4)	60.4	(55.6-65.2)



	Brussels			
	2013		2018	
	%	95% CI	%	95% CI
Self-reported chronic disease (15+)	65.4	(60.3-70.6)	66.6	(62.2-71.1)
No self-reported chronic disease (15+)	60.4	(56.2-64.6)	66.7	(63.5-69.8)
Chronic illness status (15+)	54.2	(45.5-62.9)	58.9	(52.7-65.1)
No chronic illness status (15+)	57.6	(54.6-60.6)	63.9	(61.3-66.5)
Self-reported chronic disease and chronic illness status (15+)	70.1	(58.8-81.5)	61.1	(52.9-69.2)
	Flanders			
	2013		2018	
	%	95% CI	%	95% CI
Self-reported chronic disease (15+)	57.9	(53.1-62.7)	66.9	(63.3-70.6)
No self-reported chronic disease (15+)	65	(62.2-67.9)	72.4	(70.0-74.8)
Chronic illness status (15+)	45.2	(38.9-51.5)	60.8	(55.6-66.1)
No chronic illness status (15+)	65.2	(62.6-67.8)	71.7	(69.6-73.9)
Self-reported chronic disease and chronic illness status (15+)	48.7	(40.2-57.3)	62.7	(56.2-69.3)
	Wallonia			
	2013		2018	
	%	95% CI	%	95% CI
Self-reported chronic disease (15+)	51.3	(46.3-56.3)	55.1	(50.5-59.7)
No self-reported chronic disease (15+)	57.8	(54.2-61.4)	61.8	(58.2-65.5)
Chronic illness status (15+)	50.1	(43.2-57.0)	54	(47.6-60.3)
No chronic illness status (15+)	55.8	(52.9-58.6)	60.9	(57.9-63.8)
Self-reported chronic disease and chronic illness status (15+)	52	(42.6-61.3)	56.2	(47.6-64.8)

Source: HiSLink 2013 and 2018 data

**Figure 28 – Proportion of people (15+) that consulted a dental care specialist in the last 12 months, by chronic status**

Source: HiSLink 2013 and 2018 data

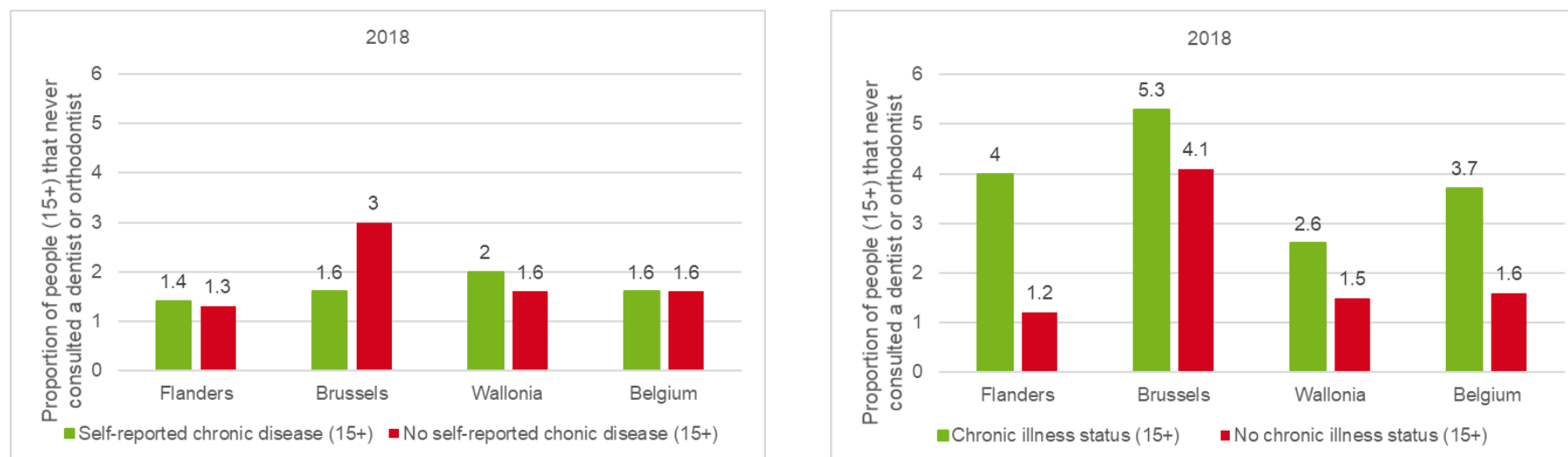
Proportion of people (15+) that never consulted a dental care specialist in the last 12 months, by chronic status

When looking at the proportion of people (aged 15 years old and over) who have never consulted a dental care specialist in the last 12 months, differences of proportions between chronic and non-chronic patients are also higher based on the chronic illness status than based on self-reported chronic disease.

The proportion of people with the chronic illness status that never consulted a dental care specialist (3.7% in 2018) was higher than for patients without the status (1.6% in 2018). Based on the self-reported chronic disease, results are similar between self-reported chronic and non-chronic patients (1.6% in 2018 in both group in Belgium), except in Brussels. (Figure 29).



Figure 29 – Proportion of people (15+) that never consulted a dental care specialist in the last 12 months, by chronic status



Source: HiSLink 2013 and 2018 data

Table 19 – Proportion of people (15+) that never consulted a dental care specialist in the last 12 months, by region, chronic status and year (2013 and 2018)

	Belgium			
	2013		2018	
	%	95% CI	%	95% CI
Self-reported chronic disease (15+)	1.1	(0.6-1.6)	1.6	(0.9-2.3)
No self-reported chronic disease (15+)	1.0	(0.6-1.4)	1.6	(1.1-2.0)
Chronic illness status (15+)	1.0	(0.3-1.6)	3.7	(1.9-5.4)
No chronic illness status (15+)	1.4	(1.0-1.8)	1.6	(1.2-1.9)
Self-reported chronic disease and chronic illness status (15+)	0.7	(0.0-1.5)	2.4	(0.8-4.1)



	Brussels			
	2013		2018	
	%	95% CI	%	95% CI
Self-reported chronic disease (15+)	1.1	(0.1-2.1)	1.6	(0.5-2.8)
No self-reported chronic disease (15+)	1.9	(0.8-2.9)	3.0	(2.0-4.1)
Chronic illness status (15+)	1.2	(0.0-2.8)	5.3	(2.6-7.9)
No chronic illness status (15+)	2.4	(1.7-3.2)	4.1	(3.0-5.1)
Self-reported chronic disease and chronic illness status (15+)	1.1	(0.0-3.2)	1.9	(0.0-3.8)
	Flanders			
	2013		2018	
	%	95%CI	%	95%CI
Self-reported chronic disease (15+)	0.3	(0.0-0.8)	1.4	(0.4-2.3)
No self-reported chronic disease (15+)	0.4	(0.2-0.7)	1.3	(0.6-1.9)
Chronic illness status (15+)	0.8	(0.0-1.6)	4.0	(1.2-6.9)
No chronic illness status (15+)	0.5	(0.1-0.9)	1.2	(0.7-1.6)
Self-reported chronic disease and chronic illness status (15+)	0.5	(0.0-1.4)	2.9	(0.3-5.4)
	Wallonia			
	2013		2018	
	%	95% CI	%	95% CI
Self-reported chronic disease (15+)	2.4	(1.0-3.7)	2.0	(0.8-3.2)
No self-reported chronic disease (15+)	2.0	(1.0-3.1)	1.6	(0.8-2.4)
Chronic illness status (15+)	1.2	(0.1-2.3)	2.6	(0.5-4.7)
No chronic illness status (15+)	2.8	(1.8-3.7)	1.5	(1.0-2.1)
Self-reported chronic disease and chronic illness status (15+)	1.2	(0.0-2.6)	1.8	(0.0-3.9)

Source: HiSLink 2013 and 2018 data

10.2.2. International Comparison

Since “regular dental visit” has been defined in the IMA – AIM atlas (the information source for this indicator) as at least two contacts with a dentist in a time span of three consecutive years and since this is not a standard indicator, it is not possible to compare these results with international reports or publications. International comparison was also not possible for the secondary indicators.



Key points

- The population seeing a dentist on a regular basis is increasing in the 2014-2019 period, especially for people with a chronic illness status (+9.7 percentage points with the status, compared to +5.5 percentage points without the status).
- The highest regular attendance rate is seen in children and adolescents (5-17 year old).
- The regular dental attendance rate was higher for people with the chronic illness status than without such status for all age categories, except for people aged 75 year old and over.
- Overall, the regular dental attendance rate was higher in Flanders (60.0% in 2019) than in Wallonia (51.0% in 2019) and Brussels (50.1% in 2019). Nevertheless, when a distinction is made based on the chronic illness status, differences between regions, and in particular between Flanders and Brussels, were reduced (with 56.5% in Brussels, 54.7% in Flanders and 49.7% in Wallonia for people with the chronic illness status). It should also be noted that in Brussels, the proportion of people with regular dental attendance is slightly higher for people with a chronic illness status than for people without such a status, while in Flanders and Wallonia, it is the opposite. Based on the HiSLink data, the proportion of people (aged 15 years and over) that consulted a dental care specialist in the last 12 months is lower for chronic patients than for non-chronic patients and such difference is more important based on the chronic illness status than based on a self-reported chronic disease, with 58.3% (95% CI 54.6-62.0) people with the chronic illness status compared to 67.3% (95% CI 65.8-68.9) for people without the chronic illness status (-9 percentage points), and 62.7% (95% CI 60.0-65.3) for people with a self-reported chronic disease and 68.7% (95% CI 66.8-70.5) for people without a self-reported chronic disease (-6 percentage points).

- It is difficult to benchmark these data with other countries, since “regular dental visit” has been defined in the IMA atlas (the information source for this indicator) as at least two contacts with a dentist in a time span of three consecutive years, which is not a standard indicator in the international literature.

References

1. Kwan S, Petersen P. Oral health: equity and social determinants. In: Equity, social determinants and public health programmes. Geneva, Switzerland: WHO; 2011.
2. Palencia L, Espelt A, Cornejo-Ovalle M, Borrell C. Socioeconomic inequalities in the use of dental care services in Europe: what is the role of public coverage? *Community Dent Oral Epidemiol.* 2014;42(2):97-105.
3. Armfield JM. Socioeconomic inequalities in child oral health: a comparison of discrete and composite area-based measures. *J Public Health Dent.* 2007;67(2):119-25.
4. Van den Branden S, Van den Broucke S, Leroy R, Declerck D, Hoppenbrouwers K. Oral health and oral health-related behaviour in preschool children: evidence for a social gradient. *Eur J Pediatr.* 2013;172(2):231-7.
5. Tchicaya A, Lorentz N. Socioeconomic inequalities in the non-use of dental care in Europe. *Int J Equity Health.* 2014;13:7.
6. Hakeberg M, Wide Boman U. Dental care attendance and refrainment from dental care among adults. *Acta Odontol Scand.* 2017;75(5):366-71. doi: 10.1080/00016357.2017.1317105. Epub 2017 Apr 19.
7. Shen J, Listl S. Investigating social inequalities in older adults' dentition and the role of dental service use in 14 European countries. *Eur J Health Econ.* 2018;19(1):45-57. doi: 10.1007/s10198-016-0866-2. Epub 2017 Jan 7.



8. Sciensano. Belgian Health Interview Survey – Interactive Analysis. Module: Health and Social Services [Web page]. Brussels: Sciensano; 2021 [cited December 2021]. Available from: <https://hisia.wiv-isp.be/SitePages/Home.aspx>
9. RIZIV - INAMI. Het mondzorgtraject: betere terugbetaling bij regelmatig tandartsbezoek [Web page]. 2017 [cited 13 December 2018]. Available from: <https://www.riziv.fgov.be/nl/publicaties/jv2016/themas/Paginas/mondzorgtraject.aspx>
10. Van Der Heyden J. Raadplegingen bij de tandarts. Wetenschappelijk Instituut Volksgezondheid; 2015. Gezondheidsenquête 2013. Rapport 3: Gebruik van gezondheids- en welzijnsdiensten. Available from: https://his.wiv-isp.be/nl/Gedeelde%20%20documenten/DC_NL_2013.pdf



11. APPROPRIATE FOLLOW-UP OF DIABETIC PATIENTS (QA-1, QA-2)

11.1. Documentation sheet

Description	Quality of diabetic patients follow-up based on different criteria
Calculation	Numerator: Number of diabetic patients who received the five following tests in the past 15 months: - at least two records of HbA1c - at least one record of lipid profile - at least one record of microalbuminuria - at least one record of serum creatinine - at least a consultation by an ophthalmologist Denominator: number of patients with any type of diabetes identified through their drugs prescription.
Rationale	Diabetes is a chronic disease characterised by high levels of glucose in the blood. People with diabetes are at greater risk of developing cardiovascular diseases such as heart attack and stroke if the disease is left undiagnosed or poorly controlled. They also have higher risks of sight loss, foot and leg amputation, and renal failure. {OECD/EU, 2018 #162} In Belgium, diabetes prevalence is increasing over time, with 6.3% of the Belgian population having a known diabetes diagnosis in 2018. Because according to Sciensano more than one in three people with diabetes do not know they have the disease, the true prevalence of diabetes can therefore be estimated to around 10%. {Healthy Belgium, 2021 #534} All type 1 diabetic patients are on insulin while most type 2 diabetic patients may be on a treatment which may or may not include insulin; overall 5-10% of all diabetic patients are suffering from type 1 diabetes, while type 2 diabetes make out the majority of the other diabetics. The majority of the type 2 diabetics do not receive insulin. According to the RIZIV-INAMI 2019 feedback on GPs practice, in diabetics, it is recommended to measure at least twice a year the level of glycated haemoglobin (HbA1c), every 3 months the glycemia, and once a year the microalbuminuria and the lipid profile. It is also recommended that an ophthalmologist performs a dilated fundus examination once a year to detect ocular complications at an early stage. {RIZIV - INAMI, 2019 #532} These recommendations were then reviewed with experts to create an indicator permanently available in the Atlas of the IMA-AIM. After this review, the test on glycemia measurement was removed and the test on serum creatinine was added (as also recommended in the 2012 RIZIV-INAMI Performance report of GP practice) {Meeus, 2012 #152}.
Primary data source	IMA data
Indicator source	KCE calculation
Technical definitions	Numerator: • Test 1 HbA1c: billing code 540750-540761, 571830-571841 (measure of glycated haemoglobin in haemolysate) at least twice over the period; • Test 2 Lipid profile: total cholesterol (billing codes: 540271-540282) AND HDL (billing codes: 540293-540304) AND triglycerides (billing codes: 541376-541380); OR LDL (billing codes: 542231-542242) at least once over the period;



- **Test 3 Albumin measurement:** billing codes to check microalbuminuria (543712-543723, 433554-433565) or total protein measurement (125532-125543) to check proteinuria, at least once over the period;
- **Test 4 Serum creatinine:** billing codes 540330-540341 at least once over the period;
- **Test 5 (ophthalmology):** ophthalmologist consultation (all billing codes of the article 14h OR billing codes: 102012, 102535 and specialist qualification code: 037, 370, 371, 374, 378 or 397) at least once over the period;

Denominator: Diabetics selected on Pharmanet: class ATC A10 drugs prescription.

Two distinct subgroups are considered :

- **Adult diabetics under insulin (ATC=A10A):** patients aged ≥ 18 years and A10A outpatient prescription >37.5 DDDs.
- **Adult diabetics receiving glucose-lowering drugs other than insulin (ATC=A10B) and almost no insulin (ATC=A10A):** patients aged 50 years and older and A10B outpatient prescription ≥ 270 DDDs per year and $0 \leq$ A10A outpatient prescription <37.5 DDDs per year. This group includes all oral antidiabetics but also incretin mimetic (GLP1-agoniste, code A10BJ) which is a non-insulin injectable solution. For this group of patients, an inferior age limitation was set at 50 years to be sure to discard people taking e.g. metformin to lose weight instead of stabilizing a diabetes.

Limitations	Patients with diabetes controlled with diet only are not identified. It should also be noted that the selection of these tests was based on the 2019 RIZIV-INAMI feedback to the GPs concerning the quality of diabetic patients follow-up {RIZIV - INAMI, 2019 #532}, then reviewed by experts to be incorporate in the AIM-IMA atlas (see also the section on "rationale"). According to the 2018 guidelines of the American Diabetes Associations,{American Diabetes Association, 2018 #533} for diabetes type 1 patients (expected mainly in the "under insulin" subgroup), microalbuminuria and serum creatinine are nevertheless only recommended for diabetes duration over 5 years.^l Additionally, according to these guidelines, for some patients, ophthalmologic consultations are not needed on a yearly base.^m This must be kept in mind when assessing the performance based on the global indicator on all 5 tests. Results per test must also be considered.
Review	Reviewed by Astrid Lavens, Sciensano, Scientist in Health services research (diabetes)
Dimensions	Appropriateness of care, and Continuity of Care
International	These indicators were selected in the early phases of the OECD quality indicators project {GREENFIELD, 2004 #405} but have been abandoned in the recent phases because of the poor availability of data in the majority of countries.{OECD, 2015 #380} Hence, there are no international comparison available for this indicator.

^l «At least once a year, assess urinary albumin (e.g., spot UACR) and eGFR in patients with type 1 diabetes with duration of ≥ 5 years, in all patients with type 2 diabetes, and in all patients with comorbid hypertension. B»{American Diabetes Association, 2018 #533}

^m «Adults with type 1 diabetes should have an initial dilated and comprehensive eye examination by an ophthalmologist or optometrist within 5 years after the onset of diabetes. B » ; « Patients with type 2 diabetes should have an initial dilated and comprehensive eye examination by an ophthalmologist or optometrist at the time of the diabetes diagnosis. B»; «If there is no evidence of retinopathy for one or more annual eye exam and glycemia is well controlled, then exams every 1–2 years may be considered. If any level of diabetic retinopathy is present, subsequent dilated retinal examinations should be repeated at least annually by an ophthalmologist or optometrist. If retinopathy is progressing or sight-threatening, then examinations will be required more frequently. B »{American Diabetes Association, 2018 #533}



11.2. Results

The composite endpoint of all five tests being evaluated as a quality indicator for follow-up of diabetes was only 43.2% in 2019 for adult diabetics under insulin (but improving since in 2009, it was 36.3%, see Figure 31) and 15.9% (also improving, since in 2009 it was 9.1%) for the adult diabetics receiving glucose-lowering drugs other than insulin. According to some experts, these low results can in part be explained by the fact that not all these five tests are recommended for every diabetic patient in some recent guidelines. In the 2018 ADA guidelines,{American Diabetes Association, 2018 #533} for patients with type 1 diabetes, microalbuminuria and serum creatinine are for example only recommended for diabetes duration over 5 years and the consultation to an ophthalmologist could be considered every two years for some patients. Results per test must therefore also be considered.

Recommendations for glycated haemoglobin (2x HbA1C), cholesterol level and serum creatinine measures were followed properly in adult diabetics under insulin (Figure 30): 84.1%, 92.4% and 97.4% of them were measured with these respective tests in the last 15 months (last results available for 2019). For the other tests, the proportions of patients with a yearly measurement were lower over the same period: i.e. check for microalbuminuria (62.5%) or proteinuria (31.2%), and ophthalmological consultations (66.7%). Nevertheless, as stated above, some guidelines

does not recommended these 3 latest tests yearly for some diabetic patients (especially type 1 diabetics with a diabetes duration inferior to 5 years).

Recommendations are followed less properly for adult diabetics receiving glucose-lowering drugs other than insulin (under oral antidiabetics or taking glucagon-like peptide-1 analogues) aged 50 and over: while serum creatinine is tested in 94.9% of these patients, cholesterol level in 90.1% of the patients, and glycated haemoglobin in 66.2% of them, the other tests are monitored in less than half of the patient population: microalbuminuria (29.6%) or proteinuria (14.2%), and ophthalmological consultation (48.6%). While the low rate concerning ophthalmological consultations can in part be explained by the fact that some guidelines considered a consultation every 2 years could be appropriate for some patients, the low rate of albumin measurements is less explained because the subgroup of adult diabetics receiving glucose-lowering drugs other than insulin mainly concerns type 2 diabetics, for which a yearly test is recommended.

Regional differences are small but for adult diabetics under insulin, results are slightly worst in Wallonia and for adult diabetics receiving glucose-lowering drugs other than insulin, a better follow-up is observed in Brussels (Figure 31). Some variation per district can also be observed (see Figure 32).



Figure 30 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per test in 2019 in Belgium

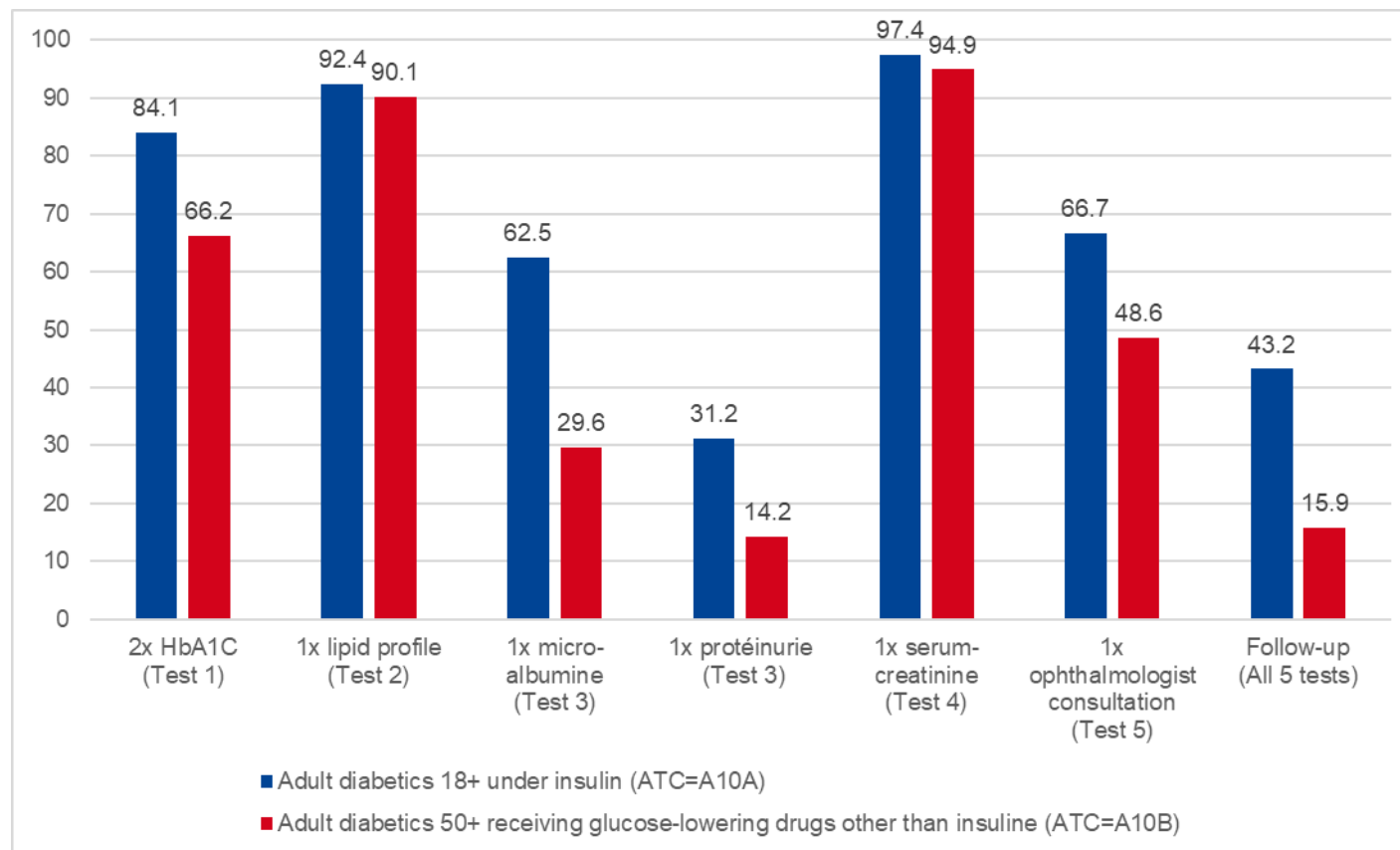
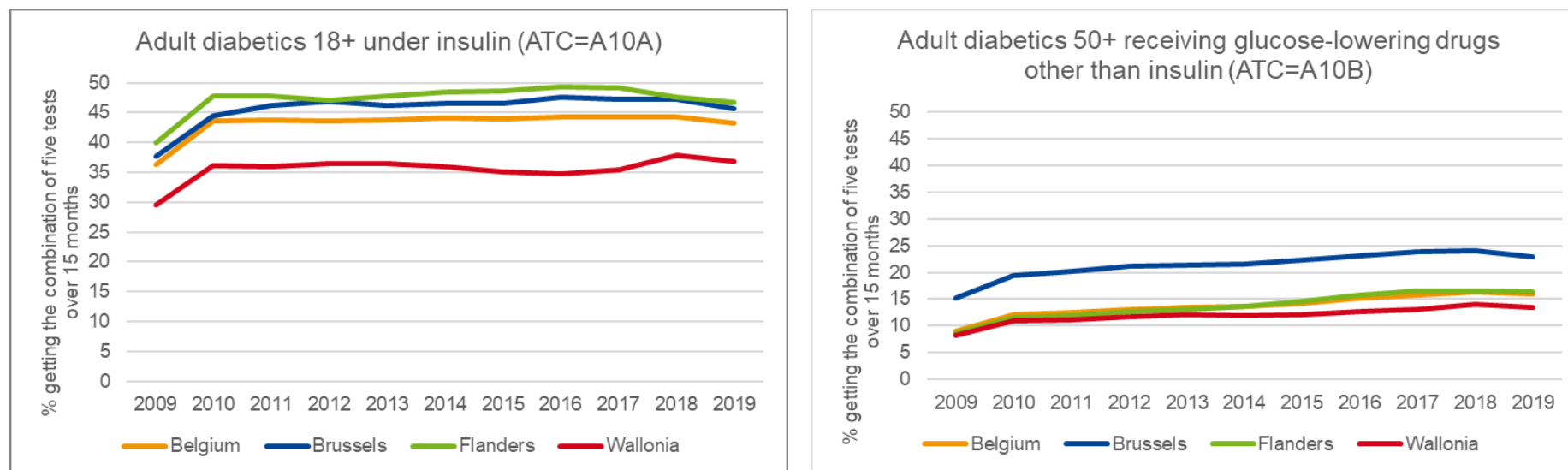




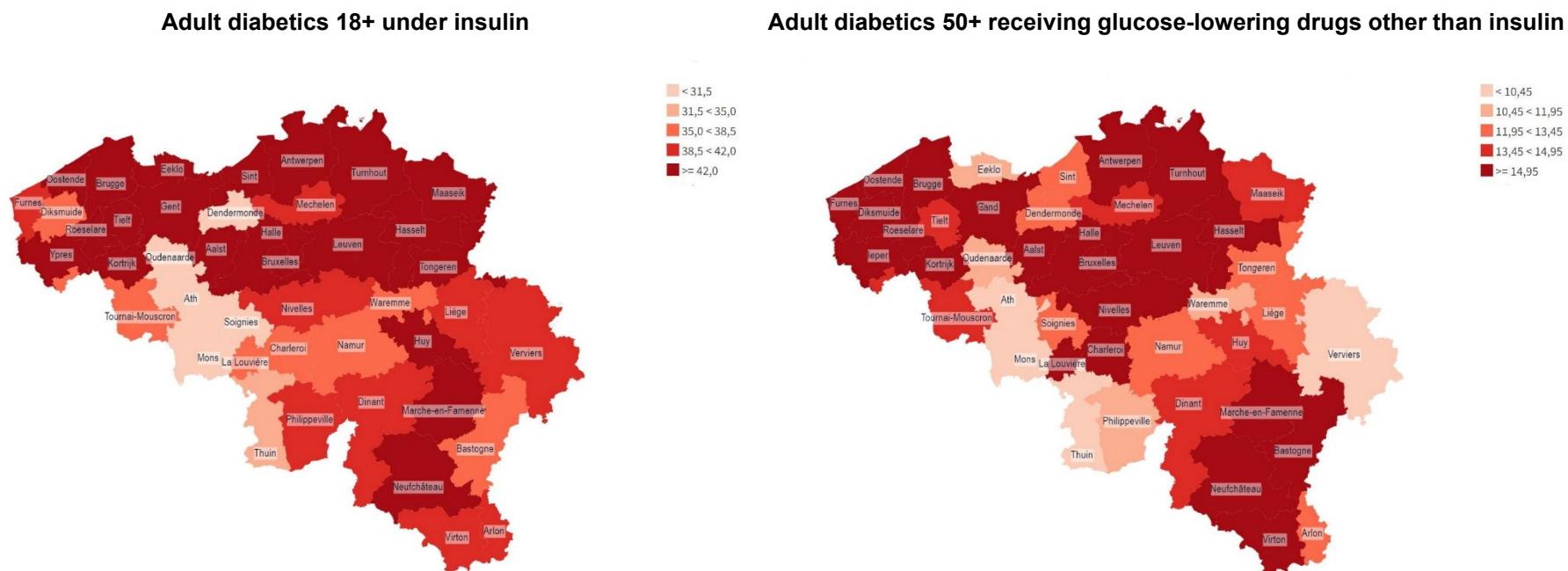
Figure 31 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per region and per year (2009-2019)



Source: IMA-AIM data 2021



Figure 32 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per districts in 2018 (2019 not available)



Source: IMA-AIM 2021



Key points

- The five tests selected to assess the quality of diabetes follow-up are performed for 43.2% of the adult diabetics under insulin; an improvement compared to 2009 can be observed.
- For adult diabetics receiving glucose-lowering drugs other than insulin, the coverage of the five tests combined is much lower, i.e. 15.9%. An improvement compared to 2009 is nevertheless also observed.
- Regional differences are small but for adult diabetics under insulin, results are slightly worst in Wallonia and for adult diabetics receiving glucose-lowering drugs other than insulin, a better follow-up is observed in Brussels.
- The low rates for the five tests combined can in part be explained by the fact that not all these five tests are recommended for every diabetics patients in some recent guidelines. In the 2018 ADA guidelines, {American Diabetes Association, 2018 #533} yearly microalbuminuria and serum creatinine measurements in patients with type 1 diabetes (i.e. mainly patients in the subgroup under insulin) are for example only recommended from diabetes duration over 5 years and consultations to an ophthalmologist could be considered every 2 years for some patients. Results per test must therefore also be considered.
- For adult diabetics under insulin the serum creatinine (97.4%), cholesterol measures (92.4%) and the glycated haemoglobin (84.1%) are very well covered while the annual consultations with an ophthalmologist (66.7%) and albumin measurements (microalbuminuria (62.5%) or proteinuria (31.2%)) are less frequent. Nevertheless, as stated above, some guidelines does not recommended these 3 latest tests yearly for some diabetic patients (especially type 1 diabetics with a diabetes duration inferior to 5 years).

- For adult diabetics receiving glucose-lowering drugs other than insulin, the serum creatinine (94.9%) and cholesterol measures (90.1%) are well covered, glycated haemoglobin are less frequent (twice yearly in 66.2% only) and albumin measurement and ophthalmological consultations are performed yearly in less than half of the patient population. While the low rate concerning ophthalmological consultation can in part be explained by the fact that some guidelines considered a consultation every 2 years was appropriate for some patients, the low rate of albumin measurement is less explained by these new guidelines because the subgroup of adult diabetics receiving glucose-lowering drugs other than insulin mainly concerns type 2 diabetics, for which a yearly test is recommended whatever the diabetes duration.

References

1. European Centre for Disease Prevention and Control. Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals. 2011-2012. Stockholm, 2015. Available from: <https://www.ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/healthcare-associated-infections-antimicrobial-use-PPS.pdf>
2. Vandael E, Catry B, Latour K. Point Prevalence Study of healthcare-associated infections and antimicrobial use in Belgian acute care hospitals: Results of the ECDC PPS 2017. Brussels, Belgium: Sciensano; 2018. 34p. Report Number: D/2018/14.440/37. Available from: <http://www.nsih.be/>
3. Suetens C, Latour K, Kärki T, Ricchizzi E, Kinross P, Moro ML, Jans B, Hopkins S, Hansen S, Lyytikäinen O, Reilly J, Deptula A, Zingg W, Plachouras D, Monnet DL, The Healthcare-Associated Infections Prevalence Study Group. Prevalence of healthcare-associated infections, estimated incidence and composite antimicrobial



resistance index in acute care hospitals and long-term care facilities: results from two European point prevalence surveys, 2016 to 2017. *Euro Surveill.* 2018;23(46). <https://doi.org/10.2807/1560-7917.ES.2018.23.46.1800516>.

4. De Pauw H, Uwineza A, Benhammadi N, Catry B. Resultaten van de 7de nationale campagne ter bevordering van de handhygiëne in ziekenhuizen. Brussels, Belgium: Wetenschappelijk Instituut Volksgezondheid; 2018. 49p. Available from: http://www.nsih.be/surv_hh/download/WIV-ISP%20Resultaten%20Nationaal%20HH%202016-2017.pdf



12. SELF-PERCEIVED QUALITY OF LIFE (QOL-1)

12.1. Documentation sheet

Description	Self-perceived quality of life
Calculation	The EQ-5D-5L instrument is used to score the subjective health (see rational section)
Rationale	With technological progress and increasing life expectancy of the population (and therefore the number of patients suffering from chronic conditions), the impact of health interventions on the quality of life of the population is becoming an important concern in public health policies and patient management decisions. The aim is no longer to just extend people's lives but also to improve or try to maintain their health-related quality of life.¹ While quality of life is a very broad concept that can be influenced by all aspects of an individual existence, health-related quality of life (HRQoL) focuses on the way health affects the quality of life, i.e., on the impact of health status on quality of life. According to a more specific definition, HRQoL focuses on the value of health, i.e. the value (also called the utility) assigned to different health states.¹ The approach to estimate the HRQoL is to use a multidimensional generic HRQoL instrument in combination with a pre-existing set of utility values or value set. A value set contains a fixed utility value for each of the possible health states that can be described with the HRQoL instrument. The last value set was developed in 2021 by Bouckaert et al.¹. The value set is used to attribute values to the health states of any study population. The use of multidimensional generic HRQoL instruments in combination with a pre-existing value set is referred to as an indirect evaluation. Different instruments exist but the one used for this indicator is the EuroQol EQ-5D-5L instrument.¹ The EQ-5D-5L, developed by the EuroQol Group, is a generic HRQoL instrument commonly used for indirect utility measurement.² It is a descriptive system for health states, encompassing 5 dimensions of health (mobility, self-care, usual activities, pain/discomfort and anxiety/depression), combined with a visual analogue scale (VAS) ranging from "worst imaginable health state" to "best imaginable health state". Each EQ-5D-5L health state is labelled by a code, e.g. 21531, where each digit represents the severity level of a dimension.¹
Data source	The Health Interview Survey (HIS). As the EQ-5D-5L questionnaire is included in the Belgian Health Interview Survey (HIS) since 2013, reference values from the general population (i.e. population norms) are generated and can be compared to others, i.e. patients with chronic diseases. The value set developed in 2021 by Bouckaert et al. is used to value the results of the EQ-5D-5L questionnaire from the HIS.¹ In the HISLinkⁿ project, Sciensano performed a linkage between HIS 2013 and 2018 and IMA-AIM data, partly to support NIHD1 to overcome the shortcomings of the data (e.g. information on non-reimbursed health care use is lacking, no link between health care use and health needs, information on socio-demographic background characteristics is scarce). Data extracted from the HIS cover the following topics: socio-demographic characteristics, health status, lifestyle and health care use. The linkage is not 100% because some individuals included in HIS could not be identified in IMA-AIM database.

ⁿ HISLink project, <https://www.sciensano.be/en/projects/linkage-health-interview-survey-data-health-insurance-data> (last access 6 October 2021)



	In the HIS2013, linkage was possible for 88% of HIS participants, while in the HIS2018 linkage, this was the case for ~94%.
Technical definitions	Chronic definitions: 1) HIS: The number of persons reporting to suffer from a chronic disease by answering “yes” to the following question in the HIS; the denominator is the number of respondents of the following question in the HIS (MA_SH02): “Do you suffer from a chronic disease or affection?”. 2) IMA-AIM: Individuals entitled to the chronic illness status. Entitlement is observed through data from the InterMutualistic Agency (IMA-AIM), variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement and is assumed to suffer from a chronic condition. To be entitled to the NIHDI chronic illness status, health expenditure based on official tariffs i.e. NIHDI expenditures and patients’ official co-payments (tickets modérateurs / remgelden) but excluding extra-billings exceed €300 (2013 tariff, indexed to €325.35 in 2019) per quarter for eight consecutive quarters or if they benefit for the fixed payments for chronically ill people or if they suffer from a rare or orphan disease and if their health expenditure based on official tariffs per quarter for eight consecutive quarters.
Limitations	The Health Interview Survey (and HISLink) partly excludes under 15 years self-reported data.
International comparability	/
Dimension	/
Related performance indicators	/
Keywords	Health related quality of life

12.2. Results

12.2.1. Self-reported health-related quality of life in population

In 2018, the average EQ-5D-5L score is 0.843 (95% CI 0.836,0.850) which corresponds to a decrease of 0.018 in HRQoL compared to 2013 (Mean: 0.861; 95% Confidence Interval (CI): 0.864,0.868). The decrease is observed in all Belgian regions and is even more pronounced in Wallonia (-0.030) than in Flanders (-0.010) and Wallonia (0.010) (see Table 20). More in-depth analyses of health-related quality of life are available in Van Wilder et al. (2021).³

Table 20 – Quality of life scores in population 15+, by year and by region

	2013		2018		
	Mean	95% CI	Mean	95% CI	Diff Mean
Belgium	0.861	0.864,0.868	0.843	0.836,0.850	-0.018
Brussels	0.849	0.836,0.862	0.839	0.827,0.851	-0.010
Flanders	0.878	0.869,0.888	0.868	0.860,0.877	-0.010
Wallonia	0.828	0.815,0.840	0.798	0.783,0.813	-0.030

CI=Confidence Interval



12.2.1.1. Self-reported health-related quality of life in patients with chronic disease

- **Self-reported chronic disease (HIS)**

Participants reporting a **chronic disease have a lower quality of life** than participants not reporting a chronic disease. The mean score was 0.211 and 0.207 lower in participants reporting a chronic disease than in participants not reporting a chronic disease, in 2013 and 2018 respectively. The quality of life score is lower in patients with a chronic disease than in patients

without chronic disease whatever the year (2013 or 2018) and the Belgian region (Brussels, Flanders, Wallonia) (Table 21).

In 2013 and 2018, the **difference** in self-reported HRQoL by a self-reported chronic disease state **was higher in Wallonia** (EQ-5D-5L self-reported chronic disease – EQ-5D-5L no self-reported chronic disease 2013: -0.208; 2018: -0.245) than in Brussels (2013: -0.202; 2018: -0.211) and Flanders (2013: -0.214; 2018: -0.178) (Table 21). Between 2013 and 2018, the difference in HRQoL between self-reported chronic disease state increased in Brussels and Wallonia, but decreased in Flanders (see Table 21).

Table 21 – Quality of life scores, by year, region and self-reported chronic disease status

	2013					2018				
	Self-reported chronic disease		No self-reported chronic disease		Difference	Self-reported chronic disease		No self-reported chronic disease		Difference
	Mean	95% CI	Mean	95% CI	Mean	Mean	95% CI	Mean	95% CI	Mean
Belgium	0.709	0.691,0.728	0.920	0.916,0.924	-0.211	0.696	0.679,0.712	0.903	0.898,0.909	-0.207
Brussels	0.732	0.705,0.758	0.902	0.891,0.914	-0.202	0.687	0.658,0.716	0.898	0.889,0.908	-0.211
Flanders	0.720	0.693,0.748	0.934	0.928,0.939	-0.214	0.739	0.717,0.760	0.917	0.910,0.925	-0.178
Wallonia	0.686	0.660,0.712	0.894	0.885,0.903	-0.208	0.632	0.602,0.662	0.877	0.867,0.887	-0.245

CI=Confidence Interval

Entitled to the NIHDI chronic illness status

The patients **entitled to the chronic illness status have a lower quality of life** than the participants not entitled to the chronic illness status. The HRQoL score was 0.231 and 0.242 lower in participants entitled to the status than in participants not entitled, **in 2013 and 2018** respectively. The same observation is made by region and year but the difference of HRQoL between chronic illness status is even more pronounced in Brussels and Wallonia than in Flanders (Table 22Table 21). The difference of HRQoL between chronic and non-chronic persons decreased between 2013 and

2018 in Flanders (2013: -0.232; 2018: -0.224) and Brussels (2013: -0.215; 2018: -0.193) but increased in Wallonia (2013: -0.232; 2018: -0.273)

In 2013 and 2018, the **HRQoL was lower in the patients entitled to the NIHDI chronic illness status** (2013: 0.656; 95% CI 0.625,0.688; 2018: 0.630; 95% CI 0.601,0.659) **than in the patients with self-reported chronic diseases in the HIS** (2013: 0.709; 95% CI 0.691,0.728; 2018: 0.696; 95%CI 0.679,0.712) (Table 21;Table 22). Regardless of the origin of the status (NIHDI vs HIS), a decrease in HRQoL is observed between 2013 and 2018 in chronic disease patients (Figure 33).

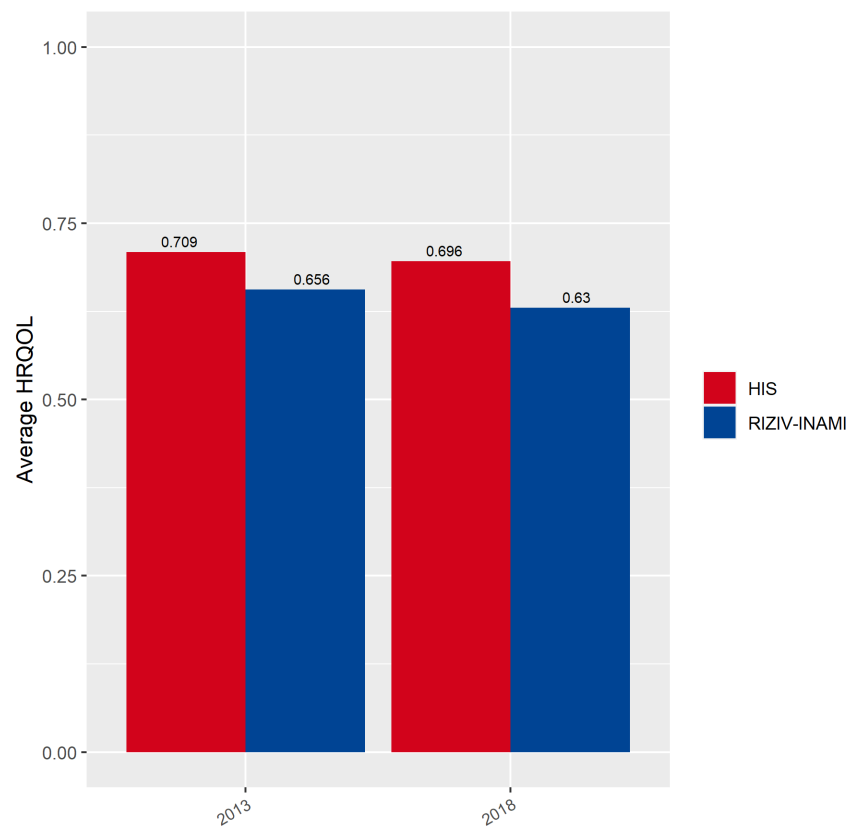


Table 22 – Quality of life scores, by year, region and entitlement to the chronic illness

2013						2018				
	Entitled to the chronic illness status		Not entitled to the chronic illness status		Difference	Entitled to the chronic illness status		Not entitled to the chronic illness status		Difference
	Mean	95% CI	Mean	95% CI	Mean	Mean	95% CI	Mean	95% CI	Mean
Belgium	0.656	0.625,0.688	0.887	0.881,0.893	-0.231	0.630	0.601,0.659	0.872	0.866,0.878	-0.242
Brussels	0.655	0.589,0.722	0.870	0.858,0.882	-0.215	0.627	0.574,0.680	0.864	0.853,0.875	-0.193
Flanders	0.674	0.630,0.719	0.906	0.899,0.913	-0.232	0.671	0.632,0.711	0.895	0.888,0.903	-0.224
Wallonia	0.619	0.571,0.668	0.851	0.839,0.863	-0.232	0.558	0.508,0.608	0.831	0.817,0.844	-0.273



Figure 33 – Overall HRQOL among chronic ill persons by year and by data source



Data: Sciensano, figure: KCE

Self-reported chronic disease (HIS) AND entitled to the status chronic illness (RIZI-INAMI)

Participants with both self-reported chronic disease and entitled to the NIHDI chronic illness status reported even worse HRQoL (2013: 0.610; 95%CI 0.572,0.648; 2018: 0.575; 95% 0.540,0.609) than the person with either status (see Table 21 and Table 22), whatever the region (Brussels, Flanders or Wallonia).

**Table 23 – Quality of life scores among person who were entitled to the chronic illness status and who self-reported chronic disease, by year**

	Entitled to the chronic illness status* AND self-reported chronic disease** 2013		Entitled to the chronic illness status * AND self-reported chronic disease** 2018	
	Mean	95% CI	Mean	95% CI
Belgium	0.610	0.572,0.648	0.575	0.540,0.609
Brussels	0.637	0.573,0.701	0.579	0.513,0.644
Flanders	0.615	0.562,0.669	0.616	0.568,0.664
Wallonia	0.592	0.535,0.646	0.503	0.446,0.561

*NIHDI chronic illness status; **HIS self-reported chronic disease or condition

Keypoints

- In 2018, the average EQ-5D-5L score is 0.843 (95% CI 0.836-0.850) which corresponds to a decrease of 0.018 in health-related quality of life compared to 2013 (Mean: 0.861; 95% CI 0.864-0.868). The decrease is observed in all Belgian regions and is even more pronounced in Wallonia.
- In 2013 and 2018, the participants self-reporting or entitled to chronic illness status reported a lower health-related quality of life than the participants without chronic diseases/not entitled to chronic illness status. By region, the conclusion is the same but the difference in HRQoL is more pronounced in Wallonia and Brussels than in Flanders.
- Between 2013 and 2018, the difference in health-related quality of life between chronic and non-chronic disease patients (HIS) increased in Brussels and Wallonia but decreased in Flanders. When looking at the persons entitled to the chronic illness status (NIHDI), the difference between chronic and non-chronic persons increased in Brussels but decreased in Wallonia and Flanders.

- In 2013 and 2018, the HRQoL was lower in the patients entitled to the NIHDI chronic illness than in the patients who self-reported being chronically ill in the HIS.
- The participants with both chronic disease status (i.e. self-reported (HIS) and entitled (NIHDI) have even worse HRQoL than those with only one chronic status (HIS or NIHDI).NI

References

1. Bouckaert N, Gerkens S, Devriese S, Cleemput I. An EQ-5D-5L value set for Belgium – How to value health-related quality of life? Health Services Research (HSR). Brussel: Belgian Health Care Knowledge Centre (KCE); 2021 07/2021. KCE Reports 342 Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_342_EQ-5D-5L_value_set_for_Belgium_Report_1.pdf
2. Group TE. EuroQol-a new facility for the measurement of health-related quality of life. Health policy. 1990;16(3):199-208.
3. Van Wilder L, Devleeschauwer B, Clays E, De Buyser S, Van der Heyden J, Charafeddine R, et al. The impact of multimorbidity patterns on health-related quality of life in the general population: results of the Belgian Health Interview Survey. Qual Life Res. 2021.



13. PERCENTAGE OF PERSONS WHO HAVE A GLOBAL MEDICAL RECORD (GMR) WITH A GENERAL PRACTITIONER (QC-1)

13.1. Documentation sheet

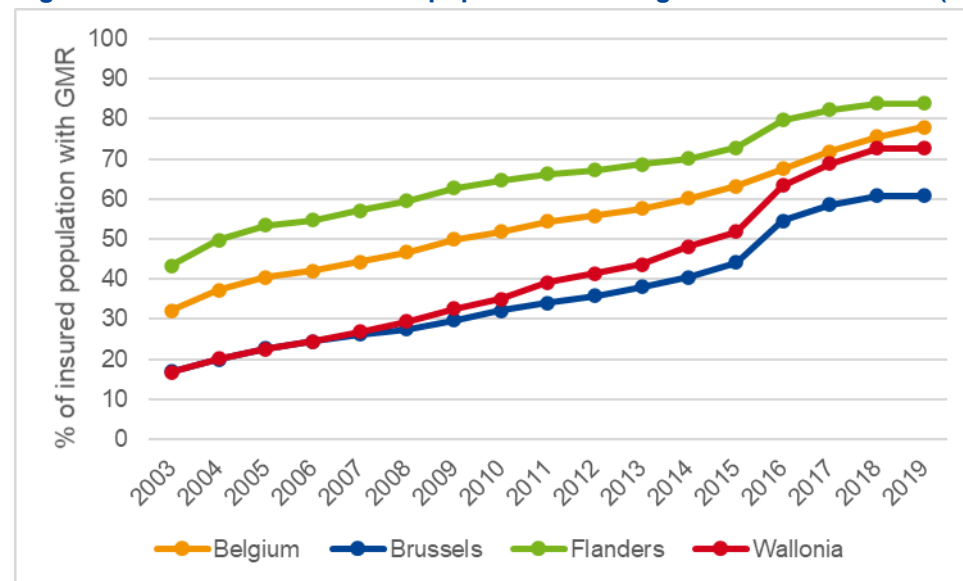
Description	Percentage of persons who have a global medical record (GMR) with a general practitioner (GP)
Calculation	• Numerator: number of insured persons with a global medical record or a electronic global medical record • Denominator: all insured persons
Rationale	Since 2001, the global medical record (GMR) is implemented in Belgium. Each patient can ask a (unique) general practitioner to manage his/her medical information (except in nursing homes where GP are designated). By leaving the coordination of medical care to one central person, the quality of care is expected to increase. Referral to and communication with other care providers can become more efficient, and double investigations or contrasting treatments can be avoided. Since 2016, the electronic global medical record is implemented in Belgium.
Data source	IMA-IMA (Atlas); INAMI-RIZIV
Technical definitions	INAMI-RIZIV billing codes: • GMR codes: 102771, 102793, 102395, 101371, 101393, completed with • eGMR codes (since 2016): 101312, 101334, 103574, 103596. A distinction is made between chronic versus non-chronic patients. Status for persons with a chronic illness in IMA-AIM database: entitlement is observed through data from the InterMutualistic Agency (IMA-AIM), variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement and is assumed to suffer from a chronic illness.
International comparability	Limitation: • specific indicator to the Belgian system. • Nomenclature codes are used as a proxy to calculate the present indicator. The patient retains the GMR until the end of the 2nd year following the last payment of the GMR to the GP. For instance if the patient opens a GMR 13 March 2015, he keeps his GMR until 31 December 2017, even if he has no contact with GP. This limitation main affects the young patients.
Performance dimension	Quality (continuity); Quality (effectiveness); Efficiency
Related indicators	Percentage of GPs using electronic global medical record (eGMR) through MyCareNet - Share of electronic global medical record among all global medical record (GMR+EGMR) (not calculated in this report, see https://www.healthybelgium.be/en/health-system-performance-assessment or ¹ for results)



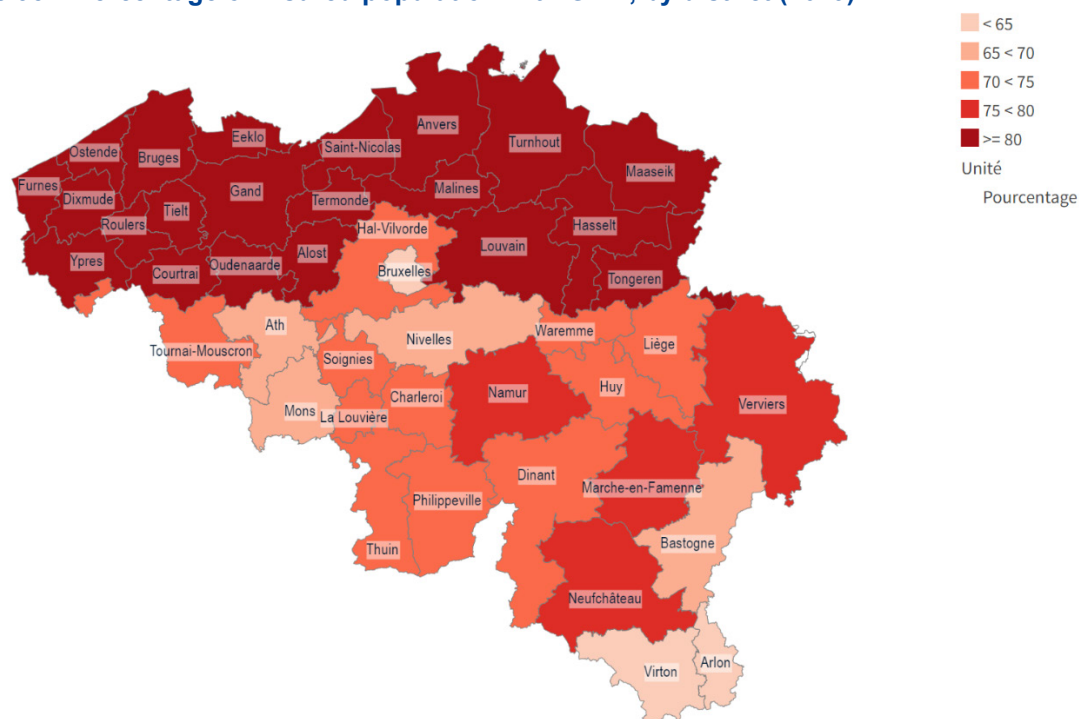
Belgium	NA	59.1	62.2	66.6	71.1	74.8	77.3	18.2
Regions	Brussels	39.5	43.3	48.5	53.8	57.8	60.0	20.5
	Flanders	69.2	71.9	75.5	79.0	81.5	83.3	14.1
	Wallonia	47.0	50.6	56.0	62.3	67.9	71.8	24.8

Source: atlas IMA-IMA; NA=Not available because the RIZIV-INAMI chronic illness status has been introduced end 2013.

Figure 34 – Evolution of insured population with a global medical record (GMR), by region and by year (2003-2019)



Source: IMA-IMA, figure: KCE

**Figure 35 – Percentage of insured population with GMR, by district (2019)**

Data and figure: IMA-AIM atlas

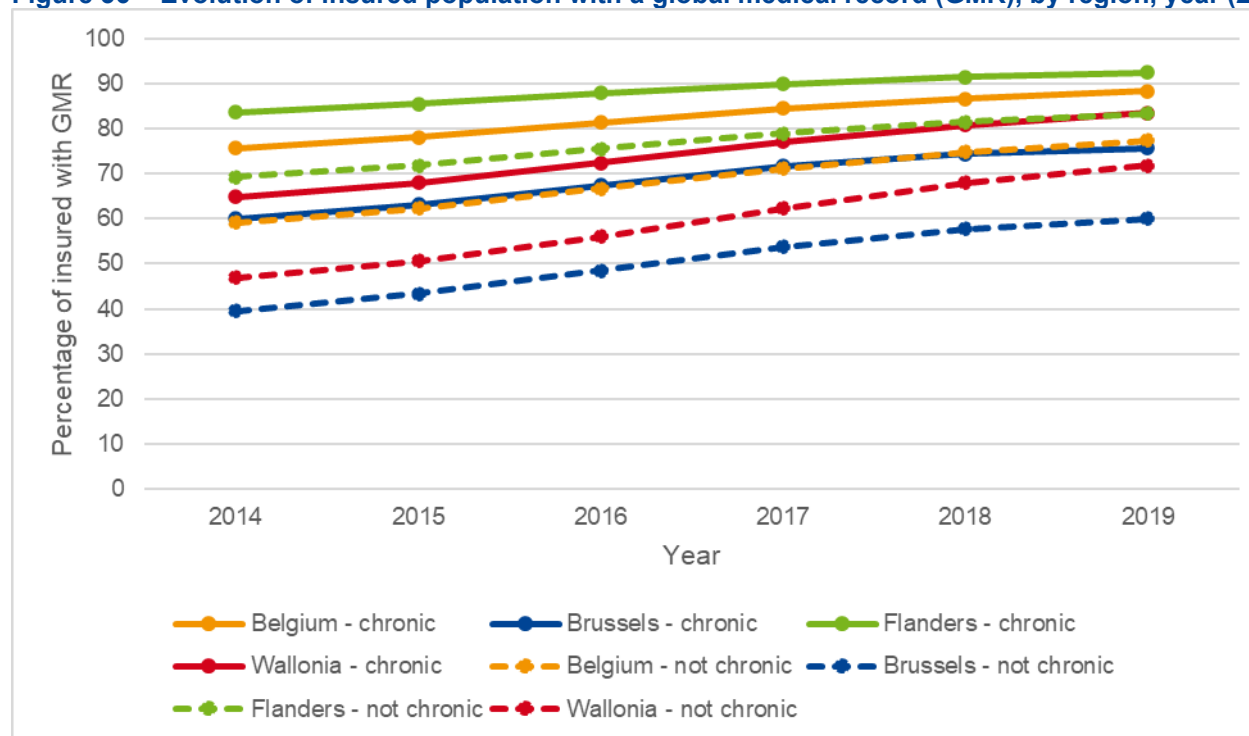


By RIZIV-INAMI chronic illness status

In 2014, the percentage of insured persons with a GMR and with chronic illness status was 75.7% and reached 88.3% in 2019 (+ 12.6 points of percentage) (see Table 24). Among the persons without chronic illness status, the GMR coverage is lower (77.3% in 2019) but the increase between 2014 and 2019 is higher than in the persons entitled to the chronic illness status (+ 18.2 points of percentage). The differences of percentage of insured with a GMR by regions are lower in the chronic persons than in

the non-chronic persons but in both sub-groups Flanders shows a higher GMR coverage (see Figure 36). There are also differences of GMR coverage between districts but they are more important among patients without chronic status. Indeed, among patients with chronic status, GMR coverage is above 80% in most districts, except in Brussels, leper, Mons and Thuin. For non-chronic patients, the differences of GMR coverage between districts are much more important but Brussels, leper, Mons and Thuin also report the lowest GMR coverage (Figure 38).

Figure 36 – Evolution of insured population with a global medical record (GMR), by region, year (2014-2019) and chronic illness status





As said above, the percentage of insured population with a GMR is higher in persons with INAMI-RIZIV chronic illness status than the persons without chronic illness status. In general, the same observation is done by gender, age group and status of increased reimbursement. However in the oldest (65+), the non-chronic persons have a better GMR coverage than the persons entitled to the chronic status (see Figure 37). The difference of

percentage of insured persons with a GMR between chronic status is the most important in the younger (0-4 years: 72.7% chronic vs not chronic 60.8%), the male (chronic 86.2% vs not chronic 74.6%) and persons without increased reimbursement status (chronic 89.0% vs not chronic 77.3%) (see Table 25).

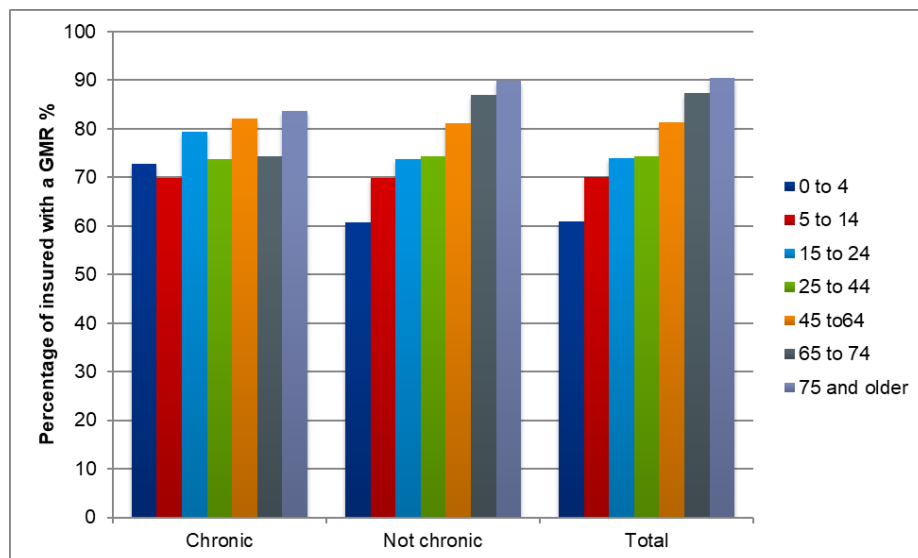
Table 25 – Percentage of insured population with a Global Medical Record (GMR), by chronic status, gender, age category and entitlement to increased reimbursement (2019)

		Chronic illness status	Not chronic illness status	Diff chronic – not chronic	Total*
Belgium		88.3	77.3	10.9	77.9
Gender	Female	89.9	80.0	9.9	80.6
	Male	86.2	74.6	11.6	75.1
Age category	0-4	72.7	60.8	11.9	60.9
	5-14	69.8	69.8	0.0	70.1
	15-24	79.4	73.7	5.7	73.9
	25-44	73.7	74.4	-0.7	74.4
	45-64	82.1	81.2	1.0	81.4
	65-74	74.4	87.0	-12.6	87.3
	75 and older	83.6	89.9	-6.3	90.4
Increased reimbursement	Yes	87.9	79.3	8.6	81.1
	No	89.0	77.3	11.7	77.5

Source: IMA-IMA, *IMA-AIM atlas



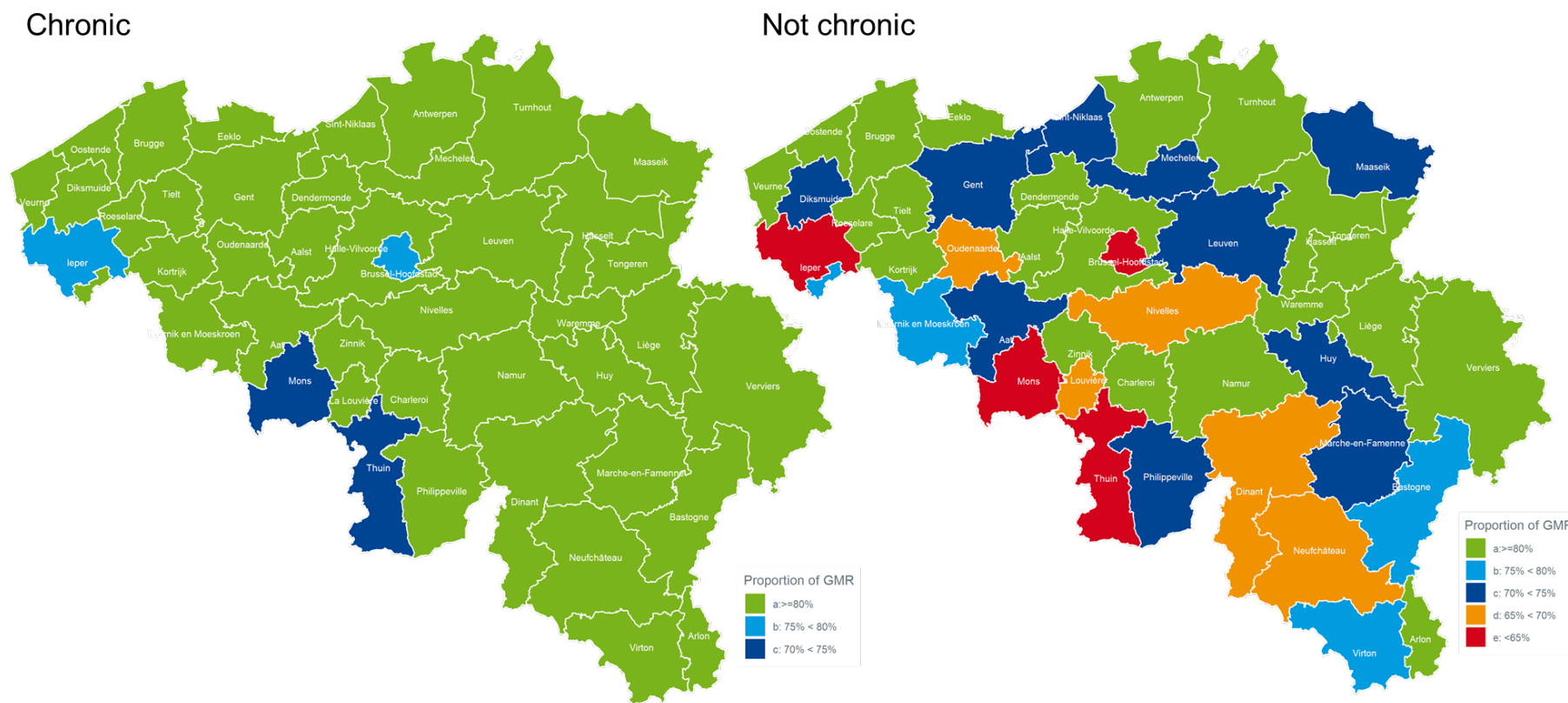
Figure 37 – Percentage of insured population with a Global Medical Record (GMR), by chronic status and age category (2019)



Data: IMA-IMA; figure: KCE



Figure 38 – Percentage of insured population with GMR, by district, by chronic illness status (2019) (left side: chronic; right side: not chronic)



Source: IMA-IMA; figure: KCE



Key points

- The percentage of insured population with a global medical record (GMR) in general practitioner is growing over the years from 60.1% in 2014 to 77.9% in 2019. The increase of GMR coverage is lower in the persons entitled to the chronic illness status (+ 12.6 points of percentage) than in the non-chronic persons (+ 18.2 points of percentage).
- The GMR coverage is higher in the chronic patients (2019: 88.3%) than in the non-chronic patients (2019: 77.9%), except for the oldest (and the 24-44 years).
- Differences in GMR coverage exist between regions (with Flanders having a better percentage than the others) but they tend to decrease over time. The same observation is made between the chronic and non-chronic patient groups.

References

1. Devos C, Cordon A, Lefèvre M, Obyn C, Renard F, Bouckaert N, et al. Performance of the Belgian health system – Report 2019. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2019 04/2019. KCE Reports 313 Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_313C_Performance_Belgian_health_system_Report.pdf



14. GP ENCOUNTER WITHIN 7 DAYS AFTER HOSPITAL DISCHARGE (% PATIENTS 65+) (QC-3)

14.1. Documentation sheet

Description	Proportion of hospital discharges of elderly patients (65+) that were followed by a general practitioner (GP) encounter within 1 week
Calculation	Numerator: number of hospitalisations for elderly patients (65+), alive 1 week after discharge, without new hospital admission in the week following the discharge, and with at least one GP consultation within 1 week (7 days) following the hospital discharge Denominator: number of hospitalisations for elderly patients (65+), alive 1 week after discharge and without new hospital admission in the week following the discharge. Calculation is done separately for individuals entitled or not entitled to the status for persons with a chronic illness. Entitlement is observed through IMA-AIM variables pp3015, pp3016 or pp3017. If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement.
Rationale	Integration, coordination and continuity of healthcare are priorities for health services. It involves coordinating the care of patients as they navigate through the healthcare system. Care transitions between the inpatient and outpatient setting are such a pivotal moments. Poor continuity of care can increase the risk of adverse events or readmissions, while good continuity of care may contribute to better communication between care providers and the translation of knowledge into health-promoting actions at home.^{1-3 4} As says the Commission on Dignity in Care for Older people (NHS Confederation, the Local Government, Association and Age UK), the objective of discharge is not simply to get a person out of the hospital, but to ensure seamless clinical, physical and emotional support and the best possible return to their home or care home.⁵ This Commission suggests that GPs arrange for a follow-up assessment around 1 week after an older person has been discharged from hospital (to check whether care arrangements put in place when the patient was discharged are still appropriate). Moreover, evidence shows that early follow-up after hospital discharge among patients aged 75+ can reduce readmissions and length of hospital stay.⁶ The increasing number of elderly patients and shorter hospital stays further emphasise the need for collaboration between different level of care (secondary care and primary care). Different concepts have been developed (integrated care pathways, care pathways,...) to strengthen coordination and cooperation of healthcare services and results in better quality of patient care (improved health or patient satisfaction outcomes).⁷ Moreover, it has been shown that in particular patients with multiple complex chronic conditions can benefit from post-discharge follow-up by a GP in the first week(s).⁸
Primary data source	Data from the InterMutualistic Agency (IMA/AIM).
Indicator source	KCE calculation



Technical definitions	Nomenclature codes for GPs encounters - all visits and consultations including after-hours visits and consultations were included in the selection of codes: 101010, 101032, 101076, 101091, 101113, 102410, 102432, 102454, 102476, 103110, 103132, 103213, 103235, 103316, 103331, 103353, 103412, 103434, 103515, 103530, 103552, 103913, 103935, 103950, 104112, 104134, 104156, 104215, 104230, 104252, 104274, 104296, 104311, 104333, 104355, 104370, 104392, 104414, 104436, 104451, 104510, 104532, 104554, 104576, 104591, 104613, 104635, 104650, 104672, 104694, 104716, 104731, 104753 Nomenclature codes for hospital stays: 761235, 761246, 767163, 767185, 767852, 767863, 767874, 767885, 767896, 767900, 767911, 767922, 767933, 767944, 768003, 768025, 768036, 768040, 768051, 768062, 768084, 768106, 768121, 768143, 768165, 768176, 768180, 768191, 768202, 768213, 768224, 768235, 768246, 768250, 768261, 768272, 768283, 768294, 768305, 768316, 768320, 768331, 768342, 768353, 768364, 777140, 777162, 777184, 777206, 790020, 793590, 793601, 793612, 793623, 793634, 793645, 793656, 793660, 793671, 793682, 793693, 793704, 793715, 793730, 793752, 793774. Hospitalisation are directly identified in the IMA database. Exclusion criteria: • Persons registered in a community health centre. Individuals with a registration of nomenclature code 109616 at any point throughout the year were considered to be enrolled in a community health centre. • Stays with a duration of less than 24 hours (minimum length of stay); • stays that, within 1 week after discharge, were followed by death or readmission. However, as the precise date of death is unknown, in reality the exclusion of stays because of a decease is programmed as follows: exclusions of stays for which the month of death is the same as the month of discharge OR for stays with discharge date in the last week of the month preceding the month of death; • stays which are still ongoing for the period of analysis; • stays for patients younger than 65 years in the year of the hospital discharge. Long term care: long term care use has been defined similarly as for the IMA-AIM atlas (http://atlas.aim-ima.be/base-de-donnees, see statistics on care for the elderly), based on lump sums registered for home care and for care in nursing homes.
Limitations	No information is available on the reason for consulting the GP and the potential link with hospital stay; no information is available on the initiator of the appointment (was it scheduled by the hospital or on the initiative of the patient); no information is available on the reason of the hospitalisation. The analysis does not account for follow-up after hospital discharge by teleconsultation or by other healthcare providers, for example a specialist, home nurse, or nurse in nursing home
International comparability	Not applicable
Dimensions	Continuity of care (Management/Coordination); coordination of care; integrated care



14.2. Results

Table 26 and Figure 34 provide an overview of the evolution over time of the proportion of hospital stays of elderly patients (65+) that were followed by at least one general practitioner (GP) encounter within 1 week. This proportion gives an indication of the integration and the continuity of care between the hospitals and the first line, even if we do not know whether the GP encounter followed a discharge plan from the hospital or was initiated by the patient.

Overall population

Overall, the follow-up rate is declining over time from 60.7% in 2013 to 53.2% in 2019 (see Table 26, panel A). Moreover, there is important variation by age group, sex, use of long term care, region, and increased reimbursement status.

As indicated in Table 26, panel A, the proportion of hospital stays with at least one follow-up GP consultation within 1 week after discharge increases strongly by age with a proportion of 40.8% in 2019 in the age group 65 to 69 in 2019, 45.4% in the age group 70 to 74, 51.1% in the age group 75 to 79, 59.0% in the age group 80 to 84, 64.8% in the age group 85 to 89 and 69.0% among elderly aged 90 or older. The proportion of hospitalisations with follow-up is higher for women (55.8% in 2019) than for men (50.2% in 2019), which is in part related to a gender effect, i.e. women of the same age have a higher follow-up rate, and an age effect as women grow older than men. Persons with increased reimbursement (IR) are more likely to have a follow-up GP consultation within 7 days after discharge (proportion of 60.6% in persons with IR versus 49.0% in persons without IR in 2019). The same is true for persons using long term care, they have a higher rate of hospitalisations with follow-up GP encounter than do persons not in long term care. There is almost no difference in the proportion between elderly using home care and institutionalised elderly. Finally, we observe that the rate of hospitalisation with follow-up GP contact is structurally lower in Brussels (42.9% in 2019) than in Flanders (54.2% in 2019) and Wallonia (53.2% in 2019), accounting for the higher share of persons enrolled in community health centres in Brussels.

Changes in follow-up may explain declining trend

The declining trend can, but does not necessarily indicate a decrease in follow-up of the patient. It can also be the results of an increase in alternative modes of follow-up. Examples thereof are a consultation or encounter with another healthcare provider such as a specialist doctor, a home nurse or a nurse in the nursing home, but it can also take the form of a teleconsultation with the GP. Alternative modes of follow-up were not analysed. Moreover, a better information flow between the hospital and the patient's GP by means of the GMR can result in a reduced need for a direct follow-up in the first week, but rather at a later point in time.

By RIZIV-INAMI chronic illness status

Table 26 and Figure 39 also give a subdivision by entitlement to the chronic illness status. As shown in Table 26, panel B and C, the proportion of hospital stays with at least one GP consultation within 1 week after discharge is structurally 9 to 11 percentage points higher over the period 2013 to 2019 among persons entitled to the chronic illness status in comparison with persons without entitlement. In 2019 the proportion amounted to 58.1% among persons with chronic illness status and 46.9% among persons without entitlement to the status.

In both subgroups, there is a declining time trend in the follow-up rate from 65.2% in 2013 to 58.1% in the group with the status and from 55.9% in 2013 to 46.9% in 2019 in the group without the status. Moreover, the variation by age group, sex, use of long term care, region, and increased reimbursement status follow a similar pattern as in the general population. Note that the difference in the proportion of hospitalisations with follow-up GP consultation can be smaller for a particular characteristic compared to the overall difference between persons with and without the chronic illness status, e.g. for the age groups the difference amounts to about 6 to 9 percentage points in 2019 between persons with and without chronic illness status, which is smaller than the overall difference of about 11 percentage points. This can be explained by a different composition of the two subgroups, with persons entitled to the chronic illness status on average older than individuals without entitlement.



Table 26 – Proportion of hospital stays of elderly patients (65+) followed by a GP consultation within 1 week after discharge, by patient characteristics and by year (2013-2019) , for the population (panel A) and subdivided by entitlement to the chronic illness status (panel B and C)

A. POPULATION	Characteristics	2013	2014	2015	2016	2017	2018	2019
	Belgium	60.7%	59.5%	57.9%	56.6%	55.6%	54.3%	53.2%
	Sex							
	Female	63.4%	62.1%	60.5%	59.1%	58.2%	56.8%	55.8%
	Male	57.5%	56.4%	54.8%	53.6%	52.6%	51.3%	50.2%
	Age group							
	65-69	47.7%	46.7%	45.2%	44.0%	43.2%	41.6%	40.8%
	70-74	53.5%	51.7%	49.8%	48.5%	47.6%	46.1%	45.4%
	75-79	60.1%	59.1%	56.9%	55.7%	54.4%	53.0%	51.1%
	80-84	67.0%	65.5%	64.1%	62.7%	61.3%	60.0%	59.0%
	85-89	71.9%	71.0%	69.1%	68.1%	67.2%	65.7%	64.8%
	≥90	74.8%	73.8%	72.6%	71.5%	71.0%	69.7%	69.0%
	Long term care							
	Nursing care at home	71.8%	70.5%	68.9%	67.8%	66.9%	65.4%	64.7%
	Nursing home	72.7%	72.2%	70.6%	69.6%	68.9%	67.8%	66.9%
	No long term care	55.0%	53.5%	51.6%	50.1%	48.9%	47.4%	46.5%
	Increased reimbursement							
	No	57.0%	55.8%	54.0%	52.4%	51.5%	50.1%	49.0%
	Yes	66.6%	65.5%	64.2%	63.4%	62.6%	61.4%	60.6%
	Region							
	Brussels	49.4%	48.1%	48.0%	46.0%	44.1%	43.1%	42.9%
	Flanders	62.5%	61.2%	59.2%	57.9%	57.1%	55.6%	54.2%
	Wallonia	59.4%	58.4%	57.3%	56.0%	54.8%	53.7%	53.2%



B. ENTITLED TO CHRONIC ILLNESS STATUS

Characteristics	2013	2014	2015	2016	2017	2018	2019
Belgium	65.2%	64.2%	62.7%	61.2%	60.3%	58.7%	58.1%
Sex							
Female	68.1%	67.0%	65.4%	64.0%	62.9%	61.3%	60.9%
Male	61.2%	60.4%	58.9%	57.4%	56.8%	55.2%	54.5%
Age group							
65-69	51.1%	50.3%	49.7%	48.0%	47.4%	45.4%	45.2%
70-74	57.5%	55.4%	53.7%	52.4%	51.4%	50.1%	49.9%
75-79	63.5%	62.8%	60.5%	59.6%	58.1%	56.5%	55.2%
80-84	70.4%	68.7%	67.5%	66.1%	64.8%	63.2%	62.2%
85-89	74.3%	73.5%	71.8%	70.6%	69.8%	68.3%	67.5%
≥90	76.2%	75.8%	74.3%	73.4%	72.7%	71.4%	70.9%
Long term care							
Nursing care at home	72.7%	71.8%	70.3%	69.2%	68.4%	66.9%	66.7%
Nursing home	73.4%	73.0%	71.6%	70.7%	70.0%	68.8%	68.0%
No long term care	58.5%	57.0%	55.4%	53.9%	52.7%	50.9%	50.5%
Increased reimbursement							
No	61.0%	60.0%	58.4%	56.6%	55.8%	54.1%	53.6%
Yes	70.0%	69.2%	67.7%	66.7%	65.9%	64.5%	64.0%
Region							
Brussels	54.8%	52.9%	52.6%	49.6%	47.7%	46.2%	46.5%
Flanders	67.1%	66.1%	64.1%	62.8%	62.1%	60.3%	59.4%
Wallonia	63.7%	62.9%	61.9%	60.2%	59.1%	57.9%	57.8%



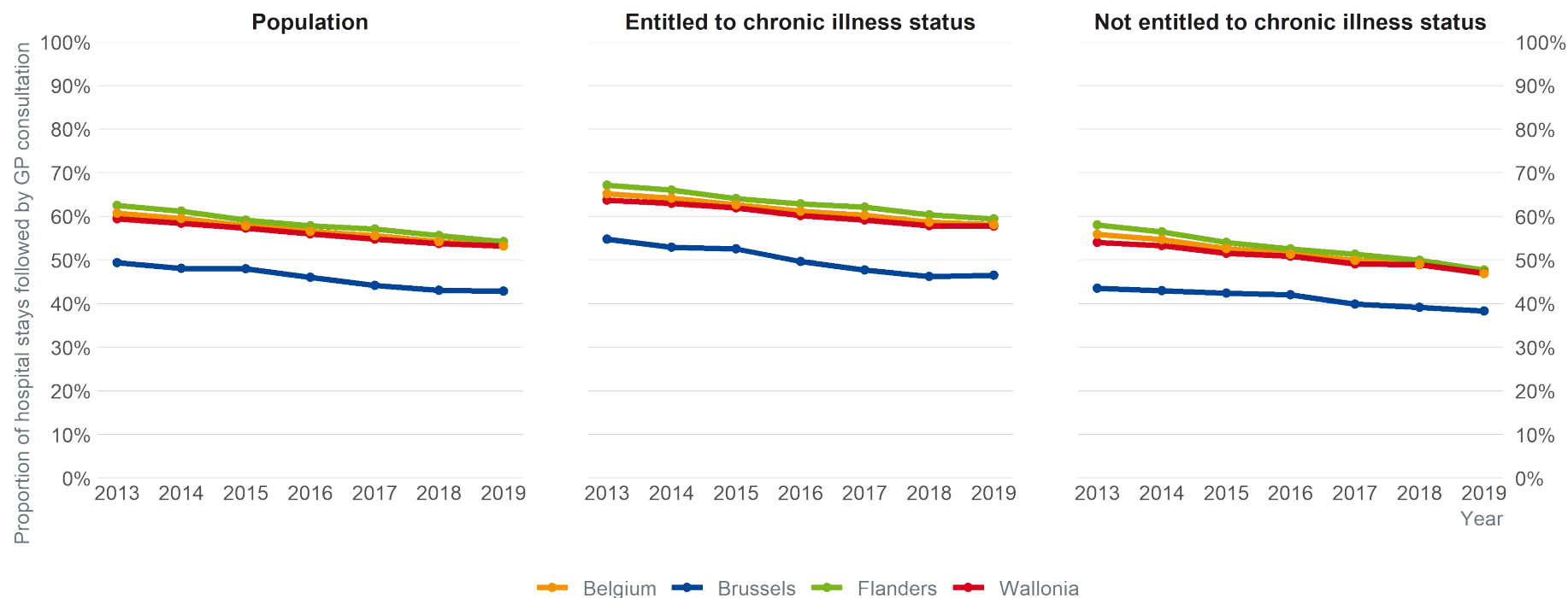
C. NOT ENTITLED TO CHRONIC ILLNESS STATUS

Characteristics	2013	2014	2015	2016	2017	2018	2019
Belgium	55.9%	54.7%	52.6%	51.4%	50.0%	49.0%	46.9%
Sex							
Female	57.7%	56.4%	54.2%	52.8%	51.6%	50.8%	48.4%
Male	54.1%	52.9%	50.9%	49.9%	48.3%	47.2%	45.4%
Age group							
65-69	45.3%	44.3%	42.1%	41.0%	39.8%	38.6%	37.1%
70-74	50.2%	48.8%	46.4%	44.9%	43.9%	42.4%	41.0%
75-79	56.7%	55.5%	53.2%	51.5%	49.9%	49.0%	46.0%
80-84	62.8%	61.6%	59.6%	58.2%	56.4%	55.5%	54.0%
85-89	68.3%	67.1%	64.8%	64.3%	62.7%	61.5%	59.8%
≥90	71.9%	69.9%	69.4%	68.1%	67.4%	66.4%	64.4%
Long term care							
Nursing care at home	69.7%	68.0%	66.0%	64.9%	63.7%	62.2%	59.7%
Nursing home	70.9%	70.0%	67.9%	67.0%	65.9%	65.5%	63.8%
No long term care	52.5%	51.0%	48.8%	47.2%	45.7%	44.5%	42.9%
Increased reimbursement							
No	53.6%	52.4%	50.1%	48.8%	47.4%	46.3%	44.4%
Yes	61.1%	59.8%	58.4%	57.6%	56.4%	55.6%	53.7%
Region							
Brussels	43.6%	42.9%	42.4%	42.1%	39.9%	39.2%	38.3%
Flanders	58.0%	56.5%	54.0%	52.6%	51.4%	50.0%	47.7%
Wallonia	54.0%	53.3%	51.5%	50.9%	49.1%	48.9%	47.0%

Source: IMA-IMA



Figure 39 – Evolution in proportion of hospital stays of elderly patients (65+) followed by a GP consultation within 1 week after discharge, by chronic illness status and by year (2013-2019)



Source: IMA-IMA; figure: KCE

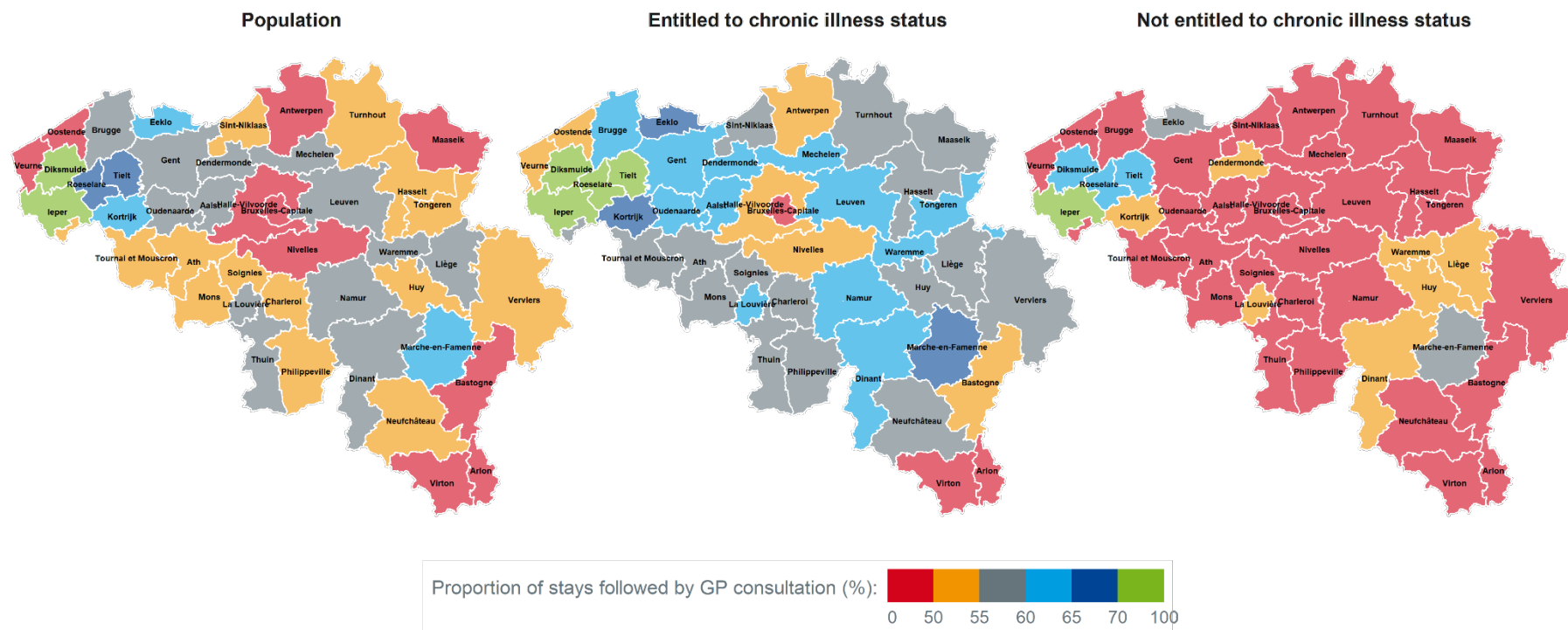
Geographic variability

The variation between the three regions is further detailed at the level of districts in Figure 38. We conclude that in most districts, the rate of follow-up GP consultations is higher for persons entitled to the chronic illness

status than for persons without such entitlement. Moreover, in the south of the province West-Flanders, we find higher rates in both subgroups, whereas the lowest rates are observed in Brussels, the districts around Brussels and the south of the province Luxembourg.



Figure 40 – Proportion of hospital stays of elderly patients (65+) followed by a GP consultation within 1 week after discharge, by district, by chronic illness status (2019)



Source: IMA-IMA; figure: KCE



Key points

- Despite the supposed advantage of having a GP encounter within the week after hospital discharge, the follow-up rate declined over time from 60.7% in 2013 to 53.2% in 2019. The decline can indicate a reduction in early follow-up or a switch to other modes of follow-up, for example teleconsultation or by other healthcare providers.
- There is important variation in the follow-up rate. The groups more likely to see a GP within 1 week after hospital discharge were those who were
 - *older* (increasing from 40.8% in 2019 in the age group 65 to 69 up to 69.0% among elderly aged 90 or older),
 - *more socially disadvantaged* (63.4% in 2019 among persons with increased reimbursement against 52.4% among persons without),
 - *in long-term care* (68% for elderly in institution or with home care against 50.2% for elderly without long term care),
 - *entitled to the chronic illness status* (58.1% in 2019 among persons with chronic illness status against 46.9% among persons without).
- This suggests that follow-up is being targeted to those with the highest need.
- The declining trend over time (from 65.2% in 2013 to 58.1% in the group with the status and from 55.9% in 2013 to 46.9% in 2019 in the group without the status) as well as the variation by age, sex, region, use of long-term care, and increased reimbursement status remain present in the subgroups of persons with and without chronic illness status.
- There are regional differences in follow-up rate with Brussels having a lower rate than Flanders and Wallonia.

References

1. Forster AJ, Clark HD, Menard A, Dupuis N, Chernish R, Chandok N, et al. Adverse events among medical patients after discharge from hospital. CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne. 2004;170(3):345-9.
2. Coleman EA, Berenson RA. Lost in transition: challenges and opportunities for improving the quality of transitional care. Ann Intern Med. 2004;141(7):533-6.
3. Coleman EA. Falling Through the Cracks: Challenges and Opportunities for Improving Transitional Care for Persons with Continuous Complex Care Needs. Journal of the American Geriatrics Society. 2003;51(4):549-55.
4. Health Quality Ontario. Effect of Early Follow-Up After Hospital Discharge on Outcomes in Patients With Heart Failure or Chronic Obstructive Pulmonary Disease: A Systematic Review. Ontario health technology assessment series. 2017;17(8):1-37.
5. Commission on Dignity in Care for Older People. Delivering Dignity: Securing dignity in care for older people in hospitals and care homes. A report for consultation. Local Government Association, NHS confederation, ageUK Improving later life, ; 2012.
6. Pedersen LH, Gregersen M, Barat I, Damsgaard EM. Early geriatric follow-up after discharge reduces mortality among patients living in their own home. A randomised controlled trial. European Geriatric Medicine. 2017;1878-7649.
7. Nolte E. PE. What is the evidence on the economic impacts of integrated care? Denmark: WHO Regional Office for Europe and European Observatory on Health Systems and Policies; 2014.
8. Jackson C, Shahsahebi M, Wedlake T, DuBard CA. Timeliness of outpatient follow-up: an evidence-based approach for planning after hospital discharge. Annals of family medicine. 2015;13(2):115-22.



15. PROPORTION OF ADULT DIABETICS (UNDER INSULIN) WITHIN A PASS/PRE-CARE TRAJECTORY, A CARE TRAJECTORY OR A CONVENTION (% OF PATIENTS, 18+) (QC-4) & PROPORTION OF ADULT DIABETICS (RECEIVING GLUCOSE-LOWERING DRUGS OTHER THAN INSULIN) WITHIN A PASS/PRE-CARE TRAJECTORY, A CARE TRAJECTORY OR A CONVENTION (% OF PATIENTS, 50+) (QC-5)

15.1. Documentation sheet

Description	QC-4 Proportion of adult diabetics (under insulin) registered in a pass/pre-care trajectory, a care trajectory or a convention^o (% of patients, 18+) QC-5 Proportion of adult diabetics aged 50 years and older (receiving glucose-lowering drugs other than insulin and almost no insulin, (hereafter abbreviated as “receiving glucose-lowering drugs other than insulin”) registered in a pass/pre-care trajectory, a care trajectory or a convention (% of patients, 50+)
Calculation	QC-4 Proportion of adult diabetics (under insulin) registered in a pass/pre-care trajectory, a care trajectory or a convention (% of patients, 18+) - Numerator: number of diabetic patients (≥ 18 years) under insulin with any type (I and II) diabetes registered in a pass/pre-care trajectory, a care trajectory or a convention. - Denominator: number of patients (≥ 18 years) under insulin with any type (I and II) diabetes identified through their drugs prescription. QC-5 Proportion of adult diabetics aged 50 years and older (receiving glucose-lowering drugs other than insulin) registered in a pass/pre-care trajectory, a care trajectory or a convention (% of patients, 50+) - Numerator: number of diabetic patients (≥ 50 years) receiving glucose-lowering drugs other than insuline with any type (I and II) diabetes registered in a pass/pre-care trajectory, a care trajectory or a convention. - Denominator: number of patients (≥ 50 years) receiving glucose-lowering drugs other than insuline with any type (I and II) diabetes identified through their drugs prescription.
Rationale	To optimize care provided to diabetic patients, several measures have been implemented in Belgium by the RIZIV – INAMI. Diabetes pass/pre-care trajectory (<i>passport diabète / modèle (ou protocole) de soins pour le suivi de patients diabétique de type 2, connu sous le vocable de « prétrajet diabète» - diabetespas / zorgmodel (of zorgprotocol) voor de opvolging van een patiënt met diabetes mellitus type 2, bekend als « voortraject diabetes »</i>):

^o From a legal point of view, the correct translation should be “agreement”. Nevertheless, to facilitate the identification of what it means by a Belgian expert, we decided to choose the term “convention”, which is more commonly used.



- Diabetes pass set up in Belgium in 2003. Removed and replaced by the pre-care trajectory for patients with type 2 diabetes since the 1st February 2016.
- Inclusion criteria: patients with diabetes type II under diet or oral antidiabetics; patients should have a global medical record followed by their general practitioner.
- Aims: to improve the education of patients and those around them (information on treatment, management of complications...), to stimulate the patients involvement through information on periodic examinations and to support the communication between the patient and various care providers.
- Advantages for patients: 2 consultations partially reimbursed by year with dieticians and 2 consultations partially reimbursed with podiatrist each year (only if the patient is at high risk of foot wound).
- Diabetes pass has been replaced by the pre-care trajectory for patients with type 2 diabetes in order to better manage patients with type 2 diabetes not registered in a care trajectory for chronic care or in a convention. Advantages for patients are almost the same: 2 consultations reimbursed by year with dieticians and 2 with podiatrist. Some patients^P in the pre-care trajectory are eligible for reimbursement of consultations with specialist in diabetes for education (dieticians, pharmacist, nurses, physiotherapists...). A maximum of 4 consultations per patient per year is reimbursed.
- Care trajectory for patients with type 2 diabetes (*trajet de soins diabète type 2 - Zorgtrajecten diabetes type 2*):
 - Set up in Belgium in September 2009 (modified in 2018).
 - Inclusion criteria: patients with diabetes type II under insulin or incretinomimetics or diabetes type 2 insufficiently controlled by oral antidiabetics; patient not be registered in a convention; patient should have a global medical record followed by their general practitioner and should undertake to consult their general practitioner at least twice by year and their endocrinologist at least one by year.
 - Aims: to improve follow-up and collaboration between patients, general practitioner and medical specialist.
 - Advantages for patients: all consultations totally reimbursed with general practitioner and endocrinologist; free access to consultations with nurses specialised in diabetes for education (information on lifestyle, treatments, follow-up); free self-control material only for those on injectable therapy (150 dipsticks/6 months, glucometer), 2 consultations partially reimbursed by year with dieticians and 2 consultations partially reimbursed by year with podiatrist (only if the patient is at high risk of foot wound).
 - Since the 1st May 2018, reimbursement rules for patients with type 2 diabetes in care trajectory has been modified. It affects consultations in diabetes for education, reimbursement of self-control material and reimbursement of consultations with specialists. Patients registered in a care trajectory for type 2 diabetes under insulin or under incretinomimetics are fully reimbursed for their self-control material. Each patients can benefit from 5 consultations in diabetes for education per year and once 5 supplementary consultations. At least one of them should be delivered at home. Sickness funds do not paid lump sum fee for endocrinologists anymore when patients are also registered in a diabetes convention.
- Convention with specialised centres for diabetes self-management and other specific support programs such as for diabetic patients with foot wounds (*conventions INAMI – RIZIV overeenkomsten*):

^P Inclusion criteria: patients with type 2 diabetes registered in the pre-care trajectory; patients with age 15-69 years and a cardiovascular risk defined as BMI>30 and/or having high blood pressure; GP's prescription for consultation for diabetes education.



- Set up in Belgium in 1986 (modified in 2008 and 2016).
- Inclusion criteria: patients with type 1 or type 2 diabetes under at least 2 insulin injections by day and with a serious medical condition or patients with type 2 diabetes under at least 3 insulin injections by day; patients with gestational diabetes; patients aged more than 16 years old; ambulatory patients or hospitalized; patients with a global medical record followed by their general practitioner. Usually, patient with type 2 diabetes registered in a care trajectory are not followed in specialised hospital.
- Aims: to organize a multidisciplinary management of diabetic patients in specialised hospital centers in order to support the education of patients and those around them, the patient's involvement in their periodic examinations and the communication between the patient and various care providers.
- Advantages for patients: integration in a full revalidation process including free self-control material and multidisciplinary consultations. Since the application of the new convention the 1st July 2016, in addition to the usual standard equipment a new measuring equipment (sensor for self-monitoring of glucose) is reimbursed for patients with type 1 diabetes.

Because the registration in a diabetes pass/pre-care trajectory, care trajectory or convention is volunteer, the percentage of patients registered in at least one of the three systems of registration is an indicator of the patient's participation in this public investment.

Primary data source IMA - AIM data

Indicator source KCE calculation

Technical definitions

Two distinct groups of diabetics patients are considered (selection on Pharmanet: class ATC A10 drugs prescription)

- **Adult diabetics under insulin (ATC=A10A):** patients aged ≥ 18 years and A10A outpatient prescription >37.5 DDDs.
- **Adults diabetics receiving glucose-lowering drugs other than insuline (ATC=A10B) and almost no insuline (ATC=A10A):** patients aged 50 years and older and A10B outpatient prescription ≥ 270 DDDs per year and $0 \leq$ A10A outpatient prescription <37.5 DDDs per year. This group includes all oral antidiabetics but also incretin mimetic (GLP1-agoniste, code A10BJ) which is a non-insulin injectable solution. For this group of patients, an inferior age limitation was set at 50 years to be sure to discard people taking e.g. metformin to lose weight instead of stabilizing a diabetes.

For these 2 groups of diabetics patients (under insulin or receiving other glucose-lowering drugs), we identified patients registered in at least one of the three systems of registration. Adult diabetics (under insulin or receiving other glucose-lowering drugs) registered in a care trajectory, a convention, or a diabetes pass/pre-care trajectory are identified through the following nomenclature code:

- **Diabetes pass/pre-care trajectory:** 102852, 109594. On February 1, 2016, the description of the code 102852 «Use of a diabetes pass by the GP » was replaced by «Follow-up of a patient with type 2 diabetes according to the pre-care trajectory / care protocol established by the Insurance Committee ». The code 109594 was introduced in 2016 for the follow-up, in medical house (*maisons médicales - medische huizen*) of a patient with type 2 diabetes according to the pre-care trajectory / care protocol established by the Insurance Committee.
- **Diabetes care trajectory:** 107015, 107030, 107052, 107074. These codes concern the fixed fees for GPs and other medical specialists, respectively, for year 1 and for years 2, 3 and 4, respectively.
- **Diabetes convention:** 770033, 770055, 770070, 771573, 771595, 772450, 772461, 773113, 773231, 773253, 773275, 773393, 773496, 773592, 774115, 774130, 774152, 775456, 775471, 788756, 788771, 788793, 788815, 788830, 788852, 788874, 788896, 788911, 788933, 788955,



	785573, 785595, 785610, 785632, 785654, 785676, 785691, 785713, 785735, 785750, 785772, 785794, 785816, 785831, 785853, 785875, 785890, 785912, 785934, 785956, 789751, 789773, 789795, 789810, 789832, 789854, 789876, 789891, 789913, 789935
Limitations	Underestimated denominator (only diabetic with medication); process indicator (which provide no information on outcome); risk of misclassification, notably risk that some patients under insulin since a few days were considered as patients receiving glucose-lowering drugs; risk of misclassification or omission of certain RIZIV - INAMI codes that refer to a pass/pre-care trajectory, care trajectory or a convention.
International comparability	Not applicable
Related indicators	“Appropriate diabetes follow-up”
Review	Reviewed by Astrid Lavens, Sciensano, Scientist in Health services research (diabetes)
Dimensions	Continuity (Management/Coordination); Ambulatory care; Link specialist and GP; Chronic care



15.2. Results

A total of 156 328 diabetic patients under insulin (≥ 18 years) and a total of 226 046 diabetic patients receiving other glucose-lowering drugs than insulin (≥ 50 years) were identified in 2019 through their drugs prescription (see Table 27 and Table 28). This number does not consider the diabetic patients without medication (e.g. patients diagnosed with diabetes but only under diet or non-diagnosed patient). Globally, 91.0% of the identified **diabetic patients under insulin** had at least one registration in a diabetes care model (pass/pre-care trajectory, care trajectory or convention, see Table 27) in 2019. A large majority of these patients registered in a diabetes care model had a convention (82.7%), while 35.5% and 3.1% had a care trajectory or a pass/pre-care trajectory respectively.^q The proportion of **patients receiving other glucose-lowering drugs than insulin** having at least one registration in a diabetes care model was only 26.2% (see Table 28). Just over half of them had a care trajectory (57.8%), just under half of them had a pass/pre-care trajectory (43.0%), and only a few had a convention (2.6%).^r

Analysis by demographic characteristics and socio-economic status

• Gender & Age group

The proportion of **diabetic patients under insulin** with at least one registration in a diabetes care model is quite similar for men (91.8%) and women (90.0%, see Table 27). The same observation can be done among **diabetic patients receiving other glucose-lowering drugs than insulin** with at least one registration in a diabetes care model (26.4% for men and 25.9% for women, see Table 28).

The proportion of **diabetic patients under insulin** with at least one registration in a diabetes care model is the highest in the 18-24 years (96.1%) and remains superior to 80% until 94 years old. Afterwards, the proportion decrease to 58.7% in the 95+ age group (Table 27). The proportion of **diabetic patients receiving other glucose-lowering drugs than insulin** who have at least one registration in a diabetes care model decreases regularly from 28.0% in the first 50-74 age group to reach 12.7% in the 95+ age group (Table 28).

Among the 65 years old and plus, the proportion of diabetic patients with at least one registration in a diabetes care model is lower for patients in institutions (e.g. in nursing homes) compared to patients receiving home care and patients without long-term care (defined as not in institution and without receiving home care), **both for patients under insulin and receiving other glucose-lowering drugs than insulin** (see Table 27 and Table 28).

• Socio-economic status

Adult patients (18 years or +) **under insulin** with entitlement to increased reimbursement have slightly less often a registration than patients without this financial support (89.5% vs 91.9%, see Table 27). Conversely, the proportion of **diabetic patients receiving other glucose-lowering drugs than insulin** with at least one registration in a diabetes care model is higher with entitlement to increased reimbursement (27.5%) than without increased reimbursement (25.7%, see Table 28).

^q Total is not 100% since some patients have more than one registration in a diabetes care model.

^r Total is not 100% since some patients have more than one registration in a diabetes care model.



Table 27 – Proportion of diabetic patients under insulin within a pass/pre-care trajectory, a care trajectory or a convention, by patient characteristics (2019)

PATIENTS UNDER INSULIN (18 years or more)							
		Patients having a at least ONE OF THE THREE systems of registration			Patients having a PASS/PRE-CARE TRAJECTORY	Patients having a CARE TRAJECTORY	Patients having a CONVENTION
		Numerator	Denominator	Proportion	Proportion	Proportion	Proportion
Belgium		142 227	156 328	90.98%	2.50%	28.98%	67.51%
Region	Brussels	13 883	15 988	86.83%	3.62%	21.22%	69.74%
	Flanders	80 839	87 333	92.56%	2.47%	32.27%	66.70%
	Wallonia	47 505	53 007	89.62%	2.22%	25.91%	68.18%
Gender	Female	66 082	73 416	90.01%	2.50%	29.62%	65.79%
	Male	76 145	82 912	91.84%	2.51%	28.42%	69.03%
Age groups	18-24	3 163	3 290	96.14%	1.00%	0.82%	95.62%
	25-49	22 638	24 107	93.91%	1.85%	8.79%	87.69%
	50-74	76 385	82 504	92.58%	2.64%	29.89%	69.02%
	75-84	28 134	31 356	89.72%	2.82%	38.87%	57.30%
	85-94	11 413	14 230	80.20%	2.42%	42.33%	43.06%
	95+	494	841	58.74%	3.21%	34.60%	25.56%
Long term care (65 years or +)	Nursing care at home	13 276	14 900	89.10%	2.26%	41.05%	55.07%
	Institutions	5 876	8 072	72.79%	2.30%	32.51%	44.98%
	No LT care	58 708	64 362	91.22%	2.81%	36.16%	61.30%
Increased reimbursement (18 years or +)	No	89 828	97 794	91.85%	2.18%	27.96%	69.23%
	Yes	52 399	58 534	89.52%	3.04%	30.70%	64.64%

Source: IMA data, KCE calculation



Table 28 – Proportion of diabetic patients aged 50 years and older receiving other glucose-lowering drugs than insulin with a diabetes pass/pre-care trajectory, a care trajectory or a convention, by patient characteristics (2019)

PATIENTS RECEIVING OTHER GLUCOSE-LOWERING DRUGS THAN INSULIN (50 years or more)							
		Patients having a at least ONE OF THE THREE systems of registration			Patients having a PASS/PRE-CARE TRAJECTORY	Patients having a CARE TRAJECTORY	Patients having a CONVENTION
		Numerator	Denominator	Proportion	Proportion	Proportion	Proportion
Belgium		59 273	226 046	26.22%	11.29%	15.15%	0.68%
Region	Brussels	4 301	18 686	23.02%	8.94%	14.37%	0.63%
	Flanders	41 031	124 894	32.85%	14.98%	18.25%	0.78%
	Wallonia	13 941	82 466	16.91%	6.22%	10.64%	0.56%
Gender	Female	25 194	97 152	25.93%	11.54%	14.69%	0.52%
	Male	34 079	128 894	26.44%	11.10%	15.50%	0.81%
Age groups	18-24	-	-	-	-	-	-
	25-49	-	-	-	-	-	-
	50-74	43 543	155 648	27.98%	11.32%	16.92%	0.73%
	75-84	12 566	52 459	23.95%	11.63%	12.46%	0.60%
	85-94	3 078	17 260	17.83%	10.02%	7.86%	0.57%
	95+	86	679	12.67%	9.57%	3.39%	0.15%
Long term care (65 years or +)	Nursing care at home	3 443	13 369	25.75%	10.88%	14.75%	1.51%
	Institutions	694	5 372	12.92%	6.96%	5.75%	0.67%
	No LT care	33 226	132 631	25.05%	11.48%	13.77%	0.57%
Increased reimbursement (18 years or +)	No	40 929	159 284	25.70%	11.04%	14.85%	0.63%
	Yes	18 344	66 762	27.48%	11.87%	15.87%	0.82%

Source: IMA data, KCE calculation

Analysis by region and district

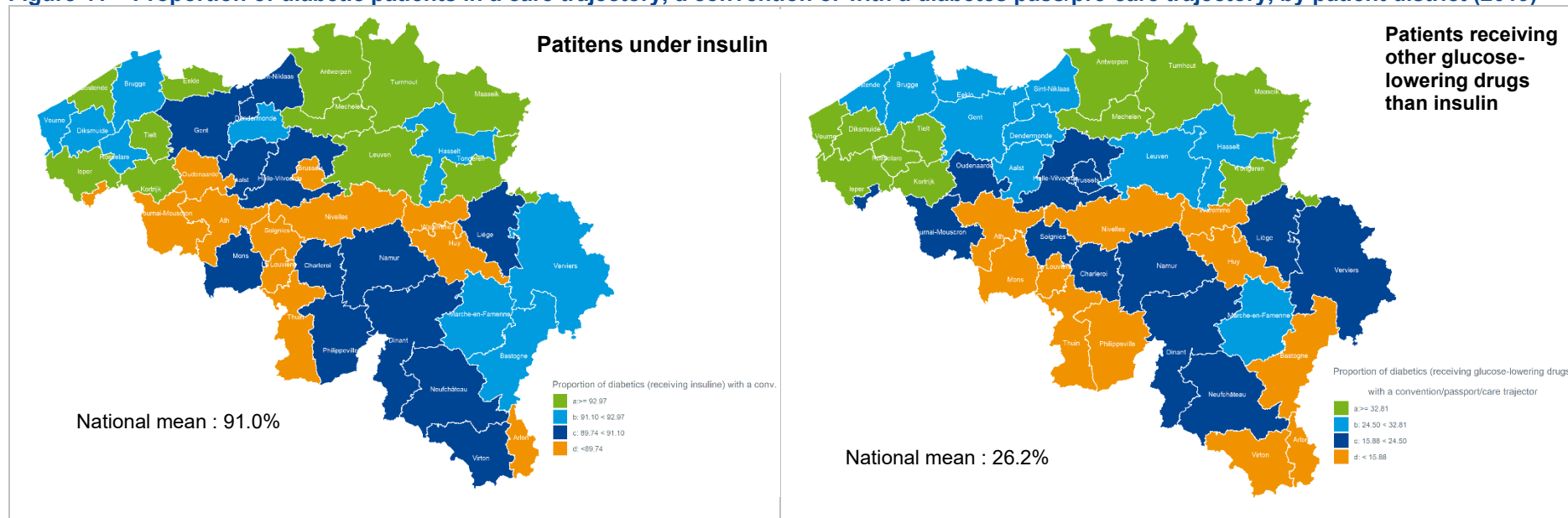
A slight difference was noticed between the three regions and the type of diabetes care model concerning **diabetic patients under insulin** (see Table 27). The use of care trajectory is higher in Flanders (32.3%) compared with Brussels (21.2%) and Wallonia (25.9%) while the use of diabetes pass/pre-care trajectory is higher in Brussels (3.6%) compared with the two other regions (2.5% in Flanders and 2.2% in Wallonia).

The proportion of **patients receiving other glucose-lowering drugs than insulin** with at least one registration in a diabetes care model is higher in Flanders (32.9%) than in Brussels (23.0%) and Wallonia (16.9%) and this difference is found for the three types of registration (see Table 28).

An analysis by district shows that Waremmе has the lowest proportion of **diabetic patients under insulin** with at least one registration in a diabetes care model (85%) while Mechelen and Tielт have the highest (95%, see Figure 41).

For **patients receiving other glucose-lowering drugs than insulin**, Waremme is the district with the lowest proportion of patients with at least one registration in a diabetes care model (8.1%) while Roeselare has the highest (54.3, see Figure 41).

Figure 41 – Proportion of diabetic patients in a care trajectory, a convention or with a diabetes pass/pre-care trajectory, by patient district (2019)



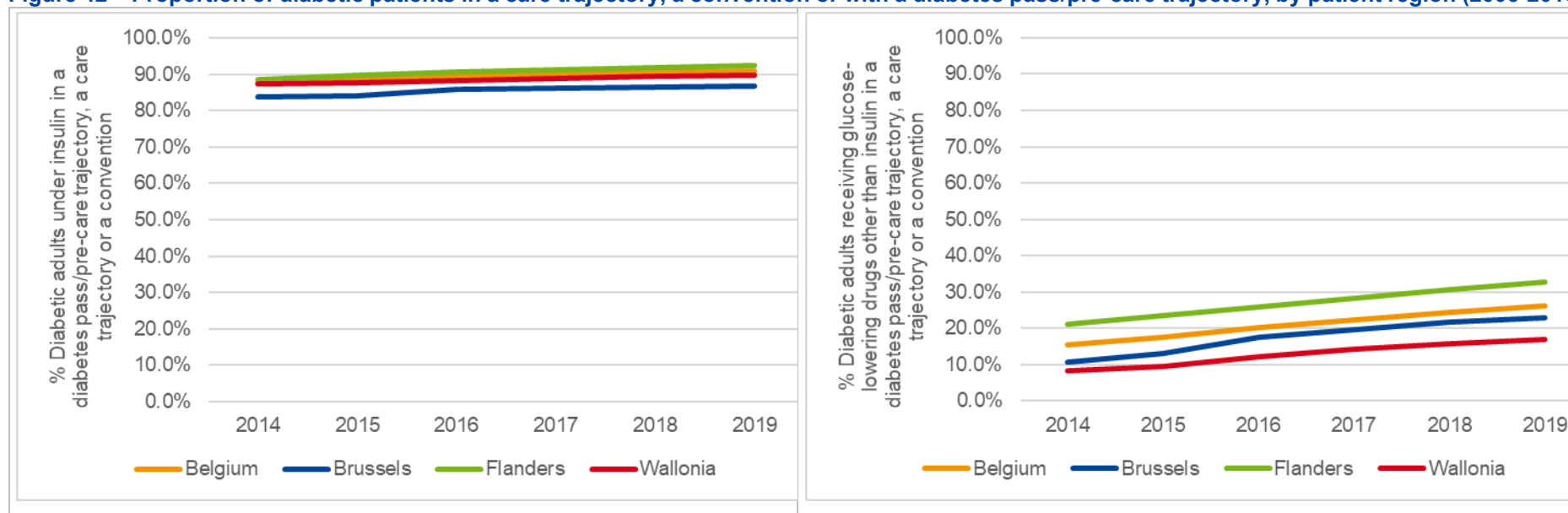
Source: IMA data. KCE calculation.

Trend over time by region

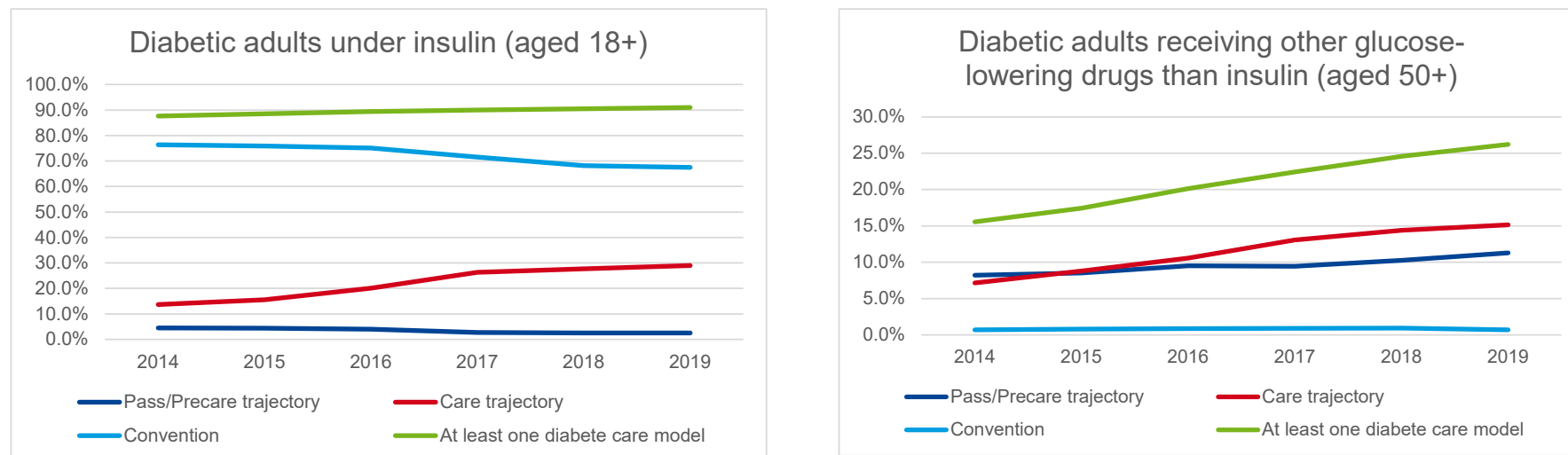
The proportion of **diabetic adults under insulin** with at least one registration in a diabetes care model was stable during the 2014-2019 period (see Figure 42). Conventions which exist since 1986 are the kind of registration more often used. Care trajectories started in September 2009,

increased progressively and reached 29% of patients under insulin in 2019 (see Figure 43).

The proportion of diabetic patients **receiving other glucose-lowering drugs than insulin** with at least one registration in a diabetes care model is low but slightly increased during the 2014-2019 period (Figure 42), especially concerning patients with a care trajectory (see Figure 43).

**Figure 42 – Proportion of diabetic patients in a care trajectory, a convention or with a diabetes pass/pre-care trajectory, by patient region (2006-2016)**

Source: IMA data. KCE calculation.

**Figure 43 – Evolution in the proportion of patients in a diabetes care model, per care model (2014-2019)**

Source: IMA data, KCE calculation



Key points

- The proportion of diabetic adults with at least one registration in a diabetes care trajectory, a diabetes convention or a diabetes pass/pre-care trajectory is relatively high among patient under insulin (90.98%). A large majority of patients under insulin registered in a diabetes care model have a convention (82.7%). In another way, a low proportion of patients receiving other glucose-lowering drugs than insulin has at least one registration in a diabetes care model (26.2%), a little more than half having a care trajectory and almost another half a pass/pre-care trajectory.
- The proportion of diabetic patients with at least one registration in a diabetes care model decrease with age both for patients under insulin and adults receiving other glucose-lowering drugs than insulin but remain superior to 80% for patients under insulin up to 94 years old (and then decrease to 58.7% for the 95+)
- Among the 65 years old and plus, the proportion of diabetic patients with at least one registration in a diabetes care model is lower in institutions (e.g. in nursing homes) compared to home care and no long term care, both for patients under insulin and receiving other glucose-lowering drugs than insulin.
- Patients under insulin with lower socio-economic level (measured by entitlement to increased reimbursement) have slightly less often a registration. Conversely, Patients receiving other glucose-lowering drugs than insulin with lower socio-economic level have slightly more often a registration.
- The proportion of patients with at least one registration in a diabetes care model is similar between regions for patients under insulin and is higher in Flanders for patients receiving other glucose-lowering drugs than insulin (32.9%) compared with the two other regions (16.9% for Wallonia and 23.0% for Brussels).
- A positive trends over time can be noticed for patients receiving other glucose-lowering drugs than insulin. The proportion of patients under insulin with at least one registration in a diabetes care model is quite stable since 2014 but care trajectories increased (both for patients under insulin and patients under other glucose-lowering drugs than insulin).



16. REFERENCE PHARMACIST (PROPORTION OF PATIENTS) (QC-7)

16.1. Documentation sheet

Description	Proportion of patients with a reference pharmacist
Calculation	Numerator: Number of patients with billing code 758192 or 758214 Denominator: Number of patients
Rationale	Since 01/10/2017, a “reference pharmacist” service was introduced for patients with a chronic disease (FR/NL)¹; it consists of: - Register pharmaceutical delivered in the pharmaceutical (electronic) file - Deliver a medication scheme for the patient - Make sure other care practitioners have access to the patients’ medication scheme² This indicator measures the uptake of the service among chronic patients and non-chronic patients.
Data source	IMA – AIM databases
Technical definitions	• Individuals with a billing code 758192 (start) or 758214 (annual fee) benefit from a reference pharmacist for the current calendar year • Individuals entitled to the status chronic illness: entitlement is observed through IMA – AIM <i>status chronic illness</i> variables pp3015 (financial criterion), pp3016 (lump sum for chronic disease) or pp3017 (rare disease). If the value for one of these 3 variables is equal to 1 (start) or 2 (extension), the individual has an entitlement.
Limitations	Short time series since the service has been introduced in October 2017.
International comparability	None
Dimension	Patient centredness, continuity of care
Related indicators	performance
Keywords	Reference pharmacist, medication scheme, pharmaceutical care



16.2. Results

The reference pharmacist service is reimbursed by RIZIV – INAMI for the following patients:

- Going to a public pharmacy, excluding patients in homes for the elderly (MRPA – ROB) or nursing homes (MRS – RVT)
- Who have been prescribed at least 5 different active substances in a year, with 160 DDDs or more within the last 12 months for at least one of them.

Among these patients, 4 subgroups are given priority:

- Individuals entitled to the status chronic illness with a global medical record (GMR)
- Patients enrolled in a diabetes pre-pathway and receiving education from the reference pharmacist or a pharmacist working in the same public pharmacy as the reference pharmacist
- Patient with polypharmacy (taking at least 5 chronic medications within a year)
- Patients who require or express a specific need for follow-up pharmaceutical care based on particular pathologies or physiological conditions, (potential) iatrogenic risks, (suspected) non-adherence to medication, or a need for specific support for social reasons.

The proportion of individuals entitled to the status chronic illness (“Chronic patients”) that has a reference pharmacist is low, but increasing (Table 29):

from 15% in 2017 to 28.5% in 2019. In the general population (without status chronic illness), this proportion is lower (3.7% in 2017 and 7.3% in 2019), as expected.

Table 29 – Proportion of individuals with a reference pharmacist per year

Year	Chronic patients		Non-chronic patients		Total	
2017	184542	15.01	236963	2.34	421505	3.71
2018	283841	22.71	360185	3.54	644026	5.64
2019	374232	28.52	466673	4.59	840905	7.32

Source: IMA – AIM

Similar results have been obtained in a study published by a sickness fund³ based on its members (19.4% of the Belgian insured population): 29.8% of the patients targeted by the service (at least one medication with 160 DDD and 4 other active substances within 12 months) had a reference pharmacist in 2020.

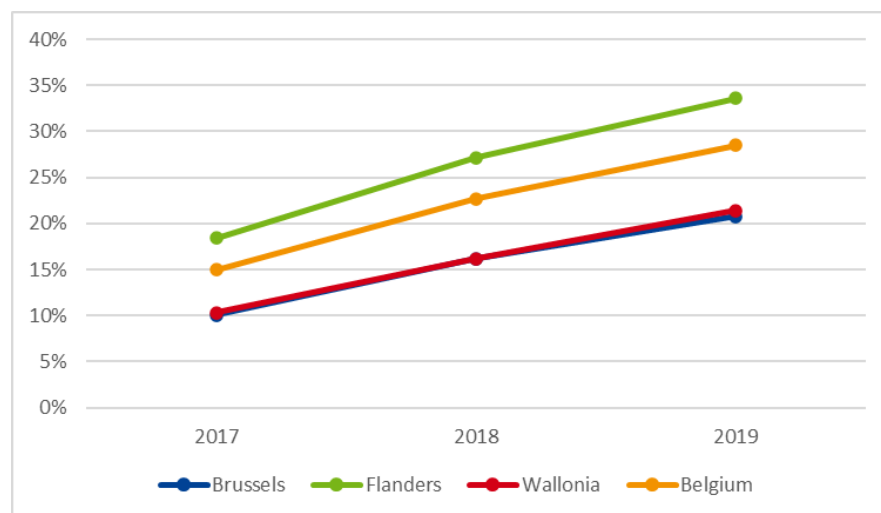
The mean age at initiation is 68 years old (Standard Deviation (SD)=14) and the median 70 years old. Patients in Brussels are younger (mean=66; SD=15; median=66) than in Wallonia (mean=67; SD=14; median=68) and Flanders (mean=69; SD=14; median=70). Individuals entitled to the status chronic illness are older at the time of initiation (mean=70; SD=14; median=71) than other individuals (mean=67; SD=14; median=68). There are more women (57%) than men at the initiation (Table 30).

**Table 30 – Reference pharmacist: gender at initiation**

Gender	Entitled to the chronic illness status?	2017		2018		2019	
men	yes	79 158	42.89%	121 291	42.73%	159 617	42.65%
	no	100 504	42.85%	152 800	43.04%	196 237	42.93%
women	yes	105 384	57.11%	162 550	57.27%	214 615	57.35%
	no	134 047	57.15%	202 225	56.96%	260 839	57.07%
unknown		2 412	0.57%	5 160	0.80%	9 597	1.14%
total		421 505	100.00%	644 026	100.00%	840 905	100.00%

Source: IMA – AIM

When looking at the progression per region (from 2017 to 2019), there is a rise in the proportion of persons with the chronic illness status, Flanders has a higher rate than Brussels and Wallonia (Figure 44).

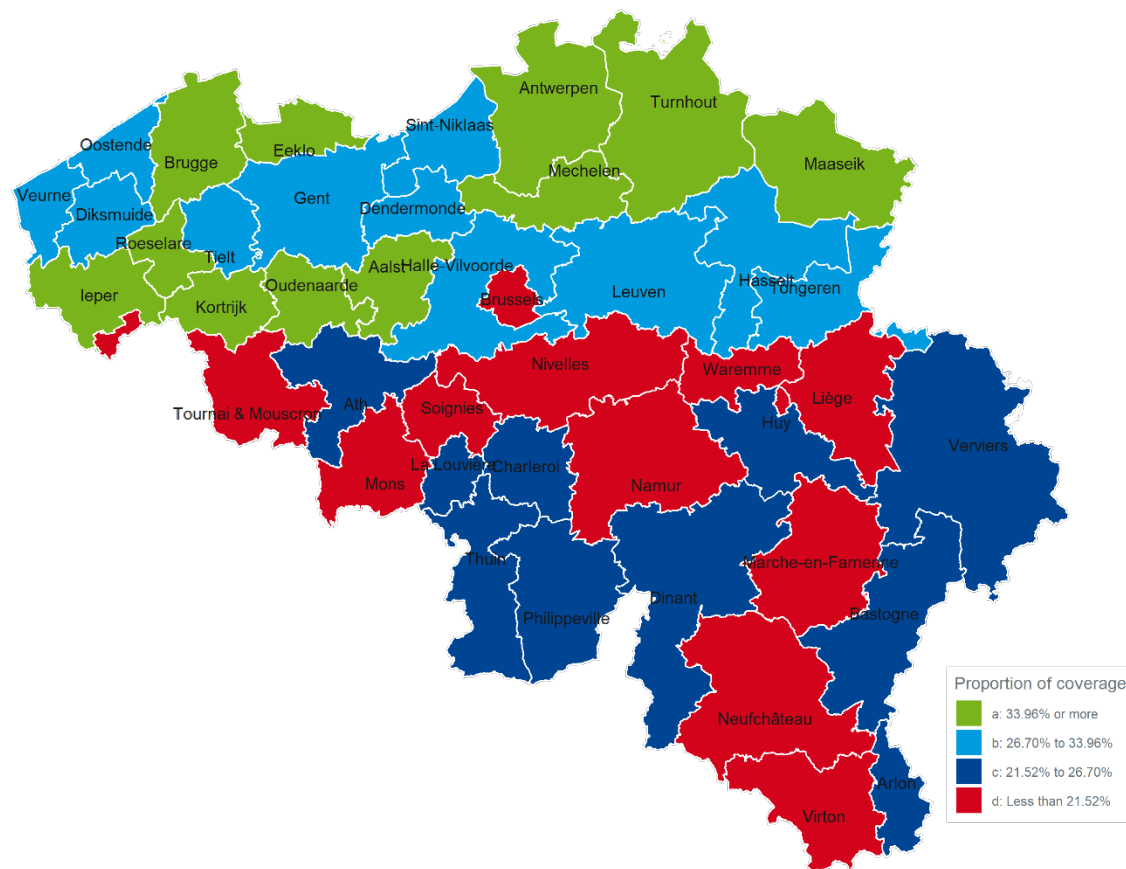
Figure 44 – Proportion of persons with the chronic illness status with a reference pharmacist by region (2017-2019)

Source: IMA – AIM

When looking at the district level in 2019, the situation is not different: there is a higher proportion of persons with the chronic illness status who have a reference pharmacist in the Flemish districts than in the Walloon districts or in Brussels (Figure 45).



Figure 45 – Proportion of persons with the chronic illness status with a reference pharmacist by district (2019)



Source: IMA – AIM



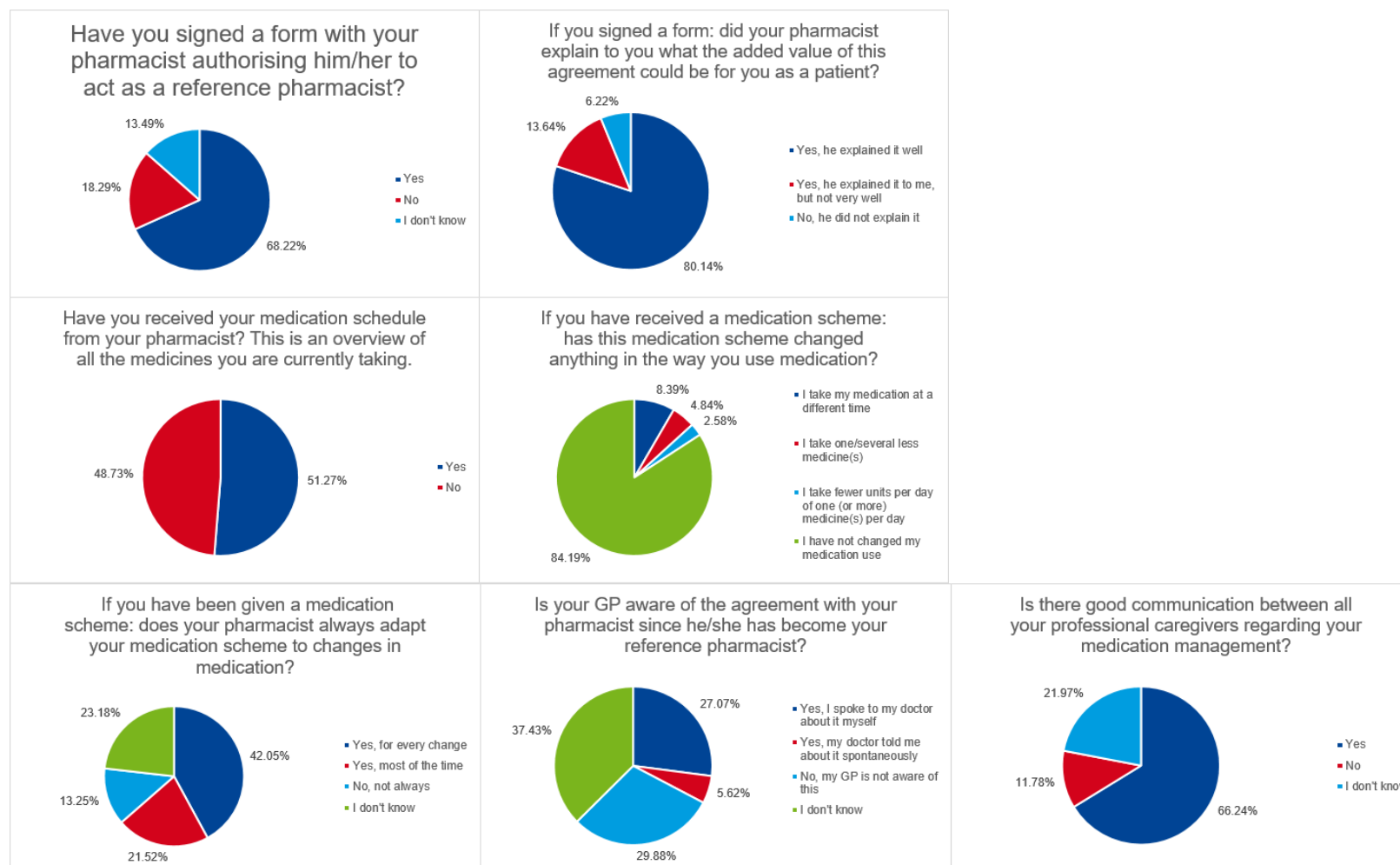
The proportion of persons with a reference pharmacist who are entitled to the preferential reimbursement (*intervention majorée / verhoogde tegemoetkoming*) is 28.28% for the 2018-2019⁴. The uptake might be improved by letting the persons entitled to this service know (e.g. by mail). This is currently in operation in a pilot project for integrated care in West-Flanders (the letter is sent by the medical advisor from the sickness funds)^s.

The observatory of chronic illness has conducted a survey where 2400 patients with a reference pharmacist were sent a questionnaire in February 2020.⁵ Results (n=645) show that:

- 68% of the surveyed persons had signed a form with their pharmacist authorising him/her to act as a reference pharmacist, 18% had not, and 13% could not remember
- Of those having signed the form, 80% thought that the benefit had been clearly explained, 14% not so clearly, and 6% have not received an explanation
- 51% have received their medication scheme, 49% have not
- For those having received the medication scheme, 84% thought that it has not change their consumption of medication, 8% that they change their timing habits, 5% that they consumed less medication (at least one less), 3% that their consumption (in units) has decreased
- For those having a medication scheme, 42% thought their reference pharmacist always adapted their medication scheme, 22% that he/she adapted it most of the time, 13% that he/she adapted not always, and 23% did not know
- 27% of surveyed persons have told their GP, 6% had their GP tell them, 30% thought that their GP was not aware of them having a reference pharmacist, and 37% did not know
- 66% of surveyed persons think that there is good communication between all healthcare professionals concerning their medication management, 12% thought the opposite, and 22% did not know

^s

<https://www.integreo.be/fr/pres-de-chez-vous/de-koepel-region-cotiere>

Figure 46 – Survey on reference pharmacist (2020)


Source: Observatory of chronic illness (RIZIV – INAMI)



Key points

- Since October 2017, polymedicated patients can ask for a reference pharmacist, who will make sure that all medication is registered in the (electronic) pharmaceutical file, that the patient receives a pharmaceutical scheme and that other healthcare practitioners have access to the patient's medication scheme
- uptake has been growing, with 29% of persons with a chronic illness status having one reference pharmacist at the end of 2019 (57% of them women)
- A 2020 survey among a sample of patients with a reference pharmacist shows that 51% of the surveyed persons received a medication scheme, 80% received a good explanation when applying, 84% have not changed the way they take their medication after receiving their medication scheme, 33% know that their GP is aware of them having a reference pharmacist, 66% think that there is good communication between all their healthcare practitioners concerning their medication management
- Uptake could be improved by sending a letter to the eligible patients.

References

1. [Convention entre les pharmaciens et les organismes assureurs de l'INAMI : Annexe IX : Description de la fonction « Pharmacien de référence » Avenant 37 : Pharmacien de référence](#)
2. Wuyts J. et al., Discharge report for the community pharmacist: Development and validation of a prototype, Research in Social and Administrative Pharmacy, Vol. 16, Issue2, Feb 2020, pages 168-177 <https://doi.org/10.1016/j.sapharm.2019.04.049>
3. MLOZ, [Le recours au remboursement de la prestation de pharmacien de référence chez les membres des Mutualités Libres en 2020](#), 2021
4. RIZIV – INAMI, [Variations de pratiques médicales – Fonction pharmacien.ne de référence](#)
5. RIZIV – INAMI, [Rapport de l'Observatoire des maladies chroniques relatif au pharmacien de référence](#), 2021



17. HOSPITAL ADMISSIONS FOR ASTHMA (QE-1), HOSPITAL ADMISSIONS FOR UNCONTROLLED DIABETES OR COMPLICATION OF DIABETES (QE-2), AND HOSPITAL ADMISSIONS FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE (QE-10)

17.1. Documentation sheet

Description	A. Number of hospital admissions for asthma in people aged 15 years and over, per 100 000 population B. Number of hospital admissions for uncontrolled (or complication of) diabetes in people aged 15 years and over, per 100 000 population C. Number of hospital admissions for chronic obstructive pulmonary disease (COPD) in people aged 15 years and over, per 100 000 population For the international comparison, rates are age-sex standardised to the 2010 OECD population aged 15 and over.
Calculation	See technical definition below. The indicator for diabetes admission is based on the sum of three indicators: admissions for short-term complications, for long-term complications and for uncontrolled diabetes without complications.
Rationale	Asthma, diabetes and COPD are three widely prevalent long term conditions. For asthma and diabetes, the evidence for effective treatment is well established and much of it can be delivered at the primary care level. A high performing primary care system can to a significant extent, therefore, avoid acute deterioration in people living with asthma and diabetes and prevent their admission to hospital.¹ High hospital admission rates for these two conditions can thus serve as a proxy for pointing to poor effectiveness of primary care, as well as poor coordination or continuity of care. Hospital admissions for COPD is also usually used as an indicator to measure the performance of primary care.¹ For COPD nevertheless, patients are extremely fragile and the pathology is very serious. A large number of hospitalisations is therefore less a reflection of poor primary care. For this indicator, the evolution is therefore more meaningful than the absolute numbers.
Primary data source	RHM – MZG (hospital administrative discharge data), FOD – SPF Public Health
Source of results	FOD – SPF Public Health and OECD health data for international comparison. These indicators belong to the set of indicators on quality of care that are published in Health at a Glance by OECD.² The OECD set of “avoidable hospital admission” also contains indicators of admissions for hypertension and congestive heart failure, but these have not been retained in this report to keep the number of indicators manageable.
Technical definitions	From OECD website: Definitions for Health Care Quality and Outcomes (HCQO) 2020-21 Indicators.³ All ICD-9 CM and ICD-10 CM codes can be found on the OECD Quality indicator website. Indicator A: Hospital admission for asthma Coverage: Population aged 15 and older. All acute care hospitals (public and private) that provide inpatient care. Numerator: All non-maternal/non-neonatal hospital admissions with principal diagnosis code of asthma in a specified year (See asthma diagnosis codes in OECD 2021³, p5)



Denominator: Population count 15+ (mean January t - January t+1)

Exclude cases: Non-residents and cases died in hospital; transferred from another institution; with MDC 14 (pregnancy, childbirth and puerperium) or with a specified pregnancy, childbirth and puerperium code in any field; with cystic fibrosis and anomalies of the respiratory system diagnosis code in any field (see diagnosis codes in OECD 2021³, p5); or that are same day/day only admissions. It should be noted that previously (2009-2012), cases with MDC 15 (newborn and other neonates) were also excluded.

Indicator B: Admission of uncontrolled diabetes or complication of diabetes

Coverage: Population aged 15 and older. All acute care hospitals (public and private) that provide inpatient care.

Numerator: All non-maternal/non-neonatal hospital admission with principal diagnosis code (see diagnosis codes in OECD 2021³, p10-11) of

- Uncontrolled diabetes
- Diabetes Short-term complication (i.e. ketoacidosis, hyperosmolarity)
- Long term complication (i.e. renal, eye; neurological, circulatory, or complication not otherwise specified).

Denominator: Population count 15+ (mean January t - January t+1).

Exclude cases: Non-residents and cases died in hospital; transferred from another institution; with MDC 14 (pregnancy, childbirth and puerperium) or with a specified pregnancy, childbirth and puerperium code in any field; or that are same day/day only admissions. It should be noted that previously (2009-2012), cases with MDC 15 (newborn and other neonates) were also excluded.

Indicator C: Hospital admission for chronic obstructive pulmonary disease (COPD)

Coverage: Population aged 15 and older. All acute care hospitals (public and private) that provide inpatient care.

Numerator: All non-maternal/non-neonatal hospital admissions with principal diagnosis code of COPD in a specified year (See COPD diagnosis codes in OECD 2021³, p7)

Denominator: Population count 15+ (mean January t - January t+1).

Exclude cases: Non-residents and cases died in hospital; transferred from another institution; with MDC 14 (pregnancy, childbirth and puerperium) or with a specified pregnancy, childbirth and puerperium code in any field; or that are same day/day only admissions. It should be noted that previously (2009-2012), cases with MDC 15 (newborn and other neonates) were also excluded.

International comparability

These indicators do not take into account underlying differences in the prevalence of the different conditions. For example, with regard to diabetes, it is not always clear whether lower admission rates are due to a lower prevalence of diabetes in the population or a better management of people with diabetes. Differences in coding practices or in data coverage of the hospital sector across countries may also affect the comparability of data. However, there are several ongoing OECD initiatives that focus on coding practices, dataset structure and data specification, with the aim of making the indicators more useful for international comparison.⁴

It is also important to note that Belgium changed its coding system to ICD-10 in 2015 but not necessarily other countries. Some may not have changed their system yet while others may have changed long before. Because when moving from ICD-9 to ICD-10 coding, there is a shift from asthma to COPD for some mixed conditions, comparison must be used with cautions.

Review

Reviewed by Pr Renaud Louis, University of Liege, Head of Pneumology Department (asthma and COPD) and by Astrid Lavens, Sciensano, Scientist in Health services research (diabetes)

Dimensions

Effectiveness + Continuity (Management)



17.2. Results

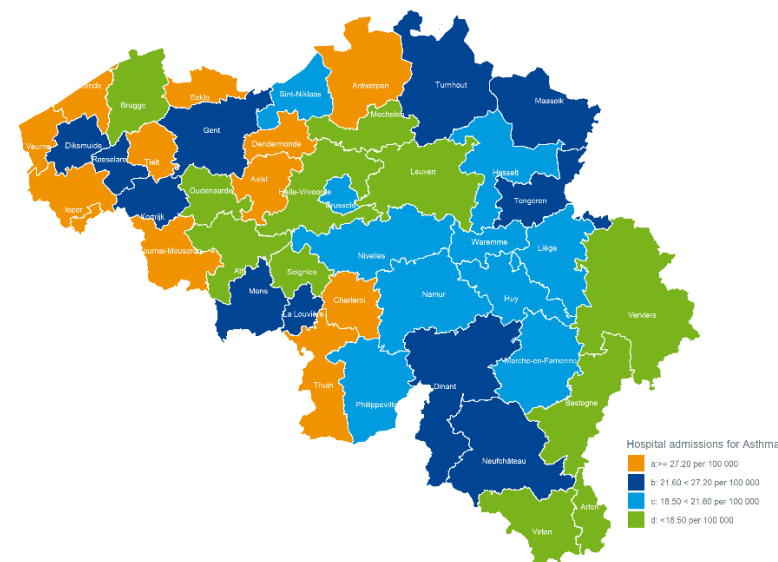
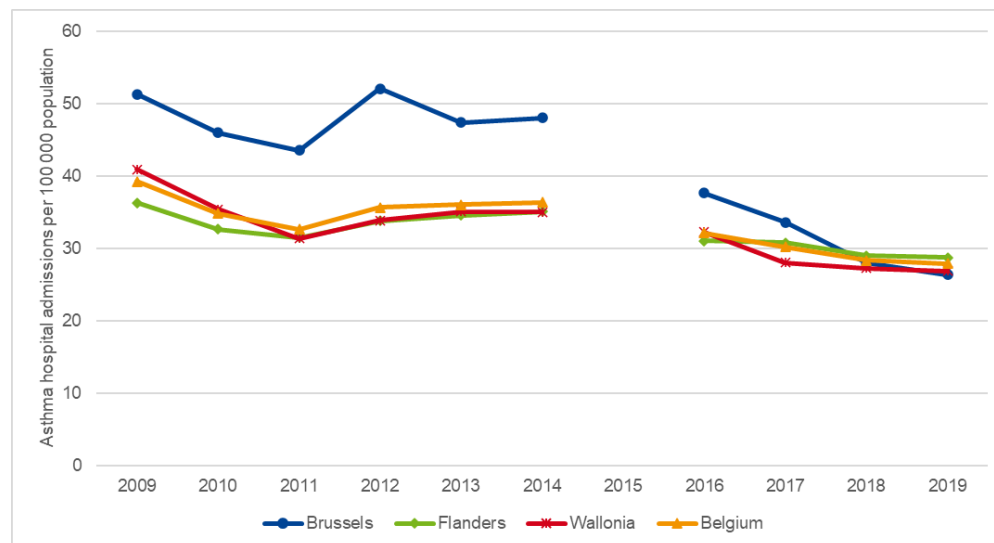
17.2.1. Hospital admission for asthma (for people aged 15 years old and over)

Data on asthma admissions in Belgium on the 2009-2014 period showed a slight decrease up to 2011, followed by a stagnation (Figure 47): with 39.2, 32.6, and 36.3 admissions per 100 000 population aged 15 years old and over in 2009, 2011 and 2014 respectively. During this period, rates were higher in Brussels than in other regions. A break in data series can be observed in 2016, due to the passage to the ICD 10 and a drop compared to 2014 can be observed, in part due to the fact that when moving from ICD-9 to ICD-10 coding, there is a shift from asthma admission to COPD admission for some mixed conditions. Comparison between the two periods must therefore be used with caution. During the 2016-2019 period, a decline in hospital admission for asthma can be observed, especially in Brussels and in 2019, rates were similar between regions (26.3 in Brussels, 28.7 in Flanders, 26.8 in Wallonia, and 27.9 for Belgium, see Figure 47).

The analysis by district shows that Virton (9.3) has the lowest hospital admission rate for asthma per 100 000 population while Veurne has the highest (53.5, see Figure 5).



Figure 47 – Hospital admissions for asthma per 100 000 population aged 15 years and older, per region (2009-2019) and per district (2019)



Source: FOD – SPF Public Health, hospital administrative discharge data

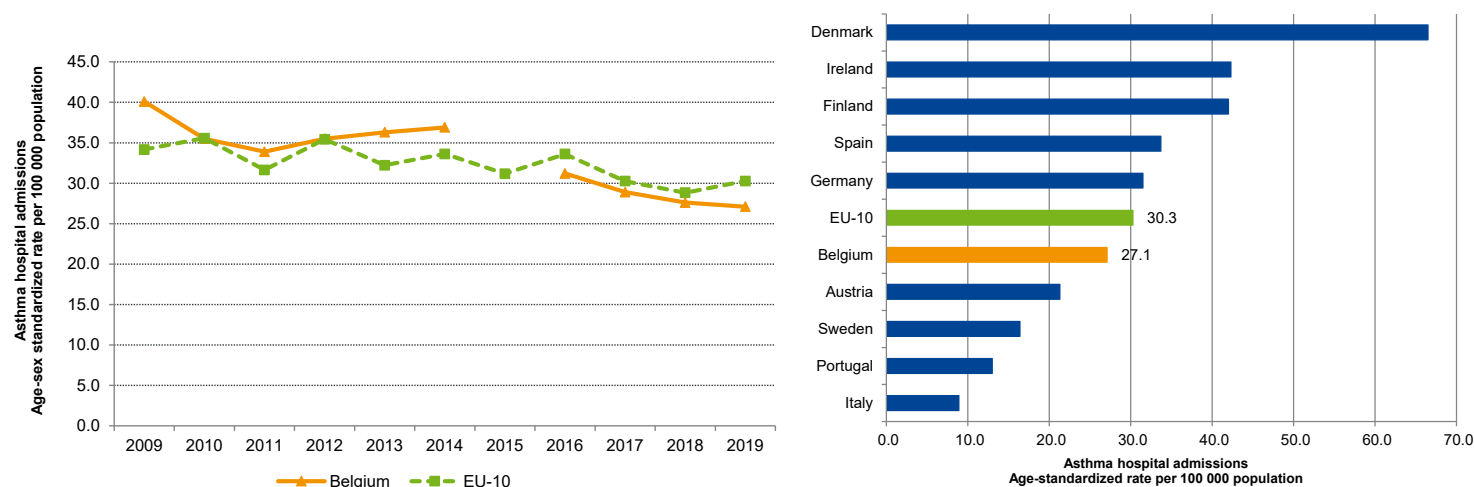
When comparing with EU-15 countries, we see that rates have declined over time and that Belgium was above the European average on the 2009-2014 period and below the European average on the 2016-2019 period, i.e. after the break in data series due to the passage to the ICD-10. Because the passage to the ICD-10 (implying a shift from asthma to COPD for some

mixed conditions) is not performed at the same time period in each European country, such comparison must be used with caution.

Figure 48 also showed variation across European countries in 2019.



Figure 48 – Age-sex standardized hospital admissions for asthma (for population aged 15 years and older): international comparison (2009-2019)



Source: OECD health data 2021

17.2.2. Hospital admission for uncontrolled diabetes, or complications of diabetes for people aged 15 years old and over)

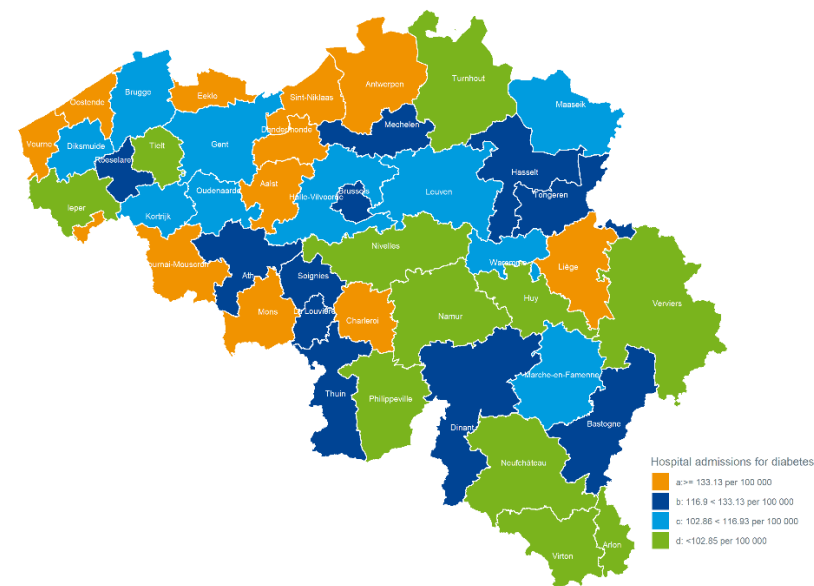
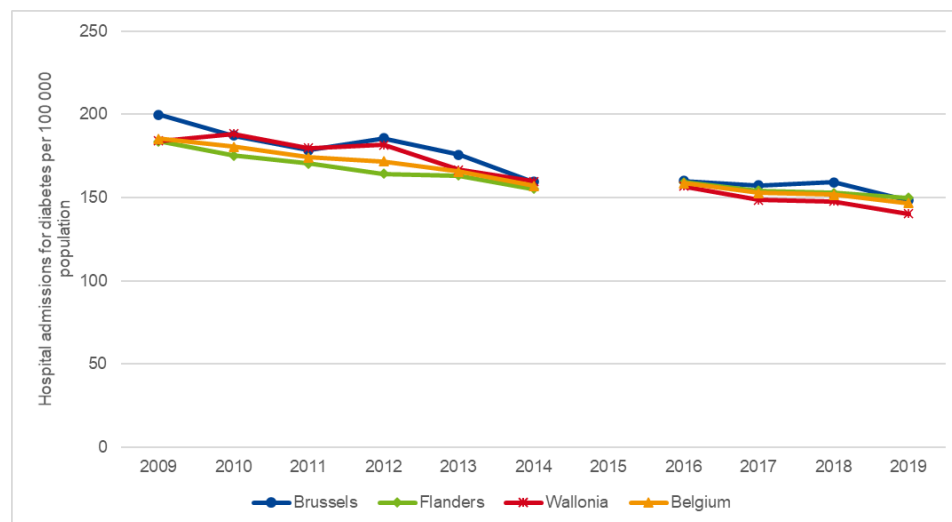
Data on diabetes admission (for uncontrolled diabetes or for complication of diabetes) in Belgium exhibit a slow decrease these latest 10 years, from 185.4 to 146.7 per 100 000 population in 2009 and 2019 respectively (Figure 49), which is also observed in other European countries (Figure 50). The introduction of care trajectories for patients with type 2 diabetes in 2009 could in part explain such a decrease.

Rates are very similar in the 3 regions for the latest available year (Figure 49). An analysis by district shows that Neufchâteau (58.2) has the lowest hospital admission rates for diabetes per 100 000 population while Veurne has the highest (218.8, see Figure 49).

At European level the rates declined more rapidly than the rates for Belgium (Figure 50) and the EU-15 average is below Belgium rates.



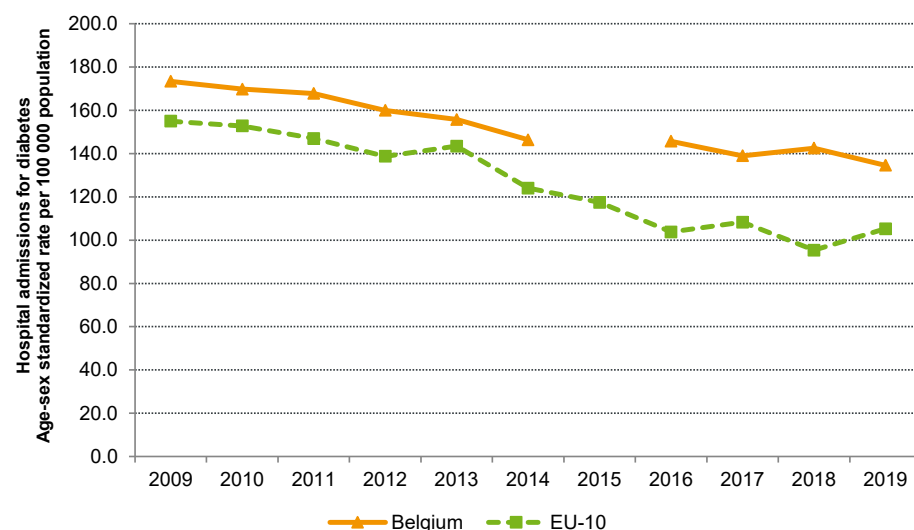
Figure 49 – Hospital admissions for (complications of) diabetes per 100 000 population aged 15 years and older, per region (2009-2019) and per district (2019)



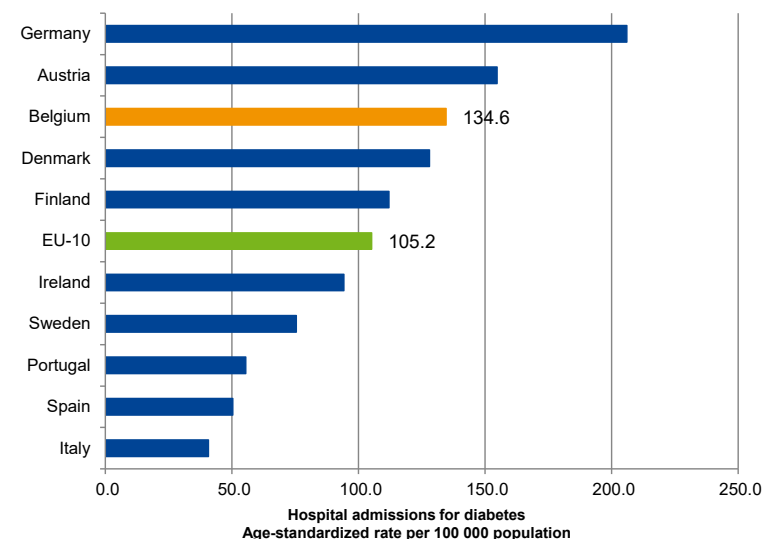
Source: FOD – SPF Public Health, hospital administrative discharge data



Figure 50 – Age-sex standardized hospital admissions for diabetes (for population aged 15 years and older): international comparison (2000-2014)



Source: OECD health data 2021



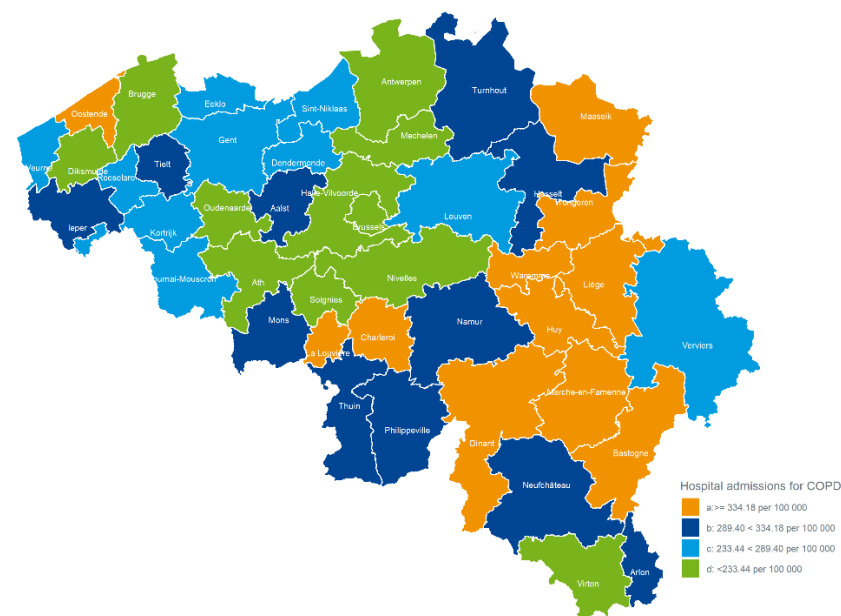
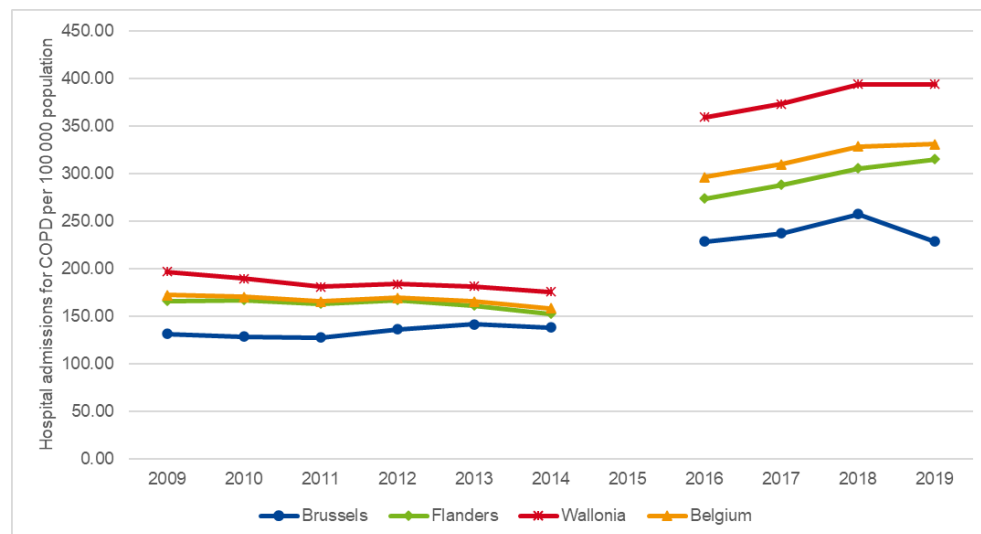
17.2.3. Hospital admission for COPD for people aged 15 years old and over)

Data on COPD admissions are quite stable on the 2009-2014 period: with 172.2 and 158.3 admissions per 100 000 population aged 15 years old and over in Belgium in 2009 and 2014 respectively (see Figure 51). During this period, rates were lower in Brussels than in other regions. A break in data series can be observed in 2016, due to the passage to the ICD 10 and an increase compared to 2014 can be observed, in part due to the fact that when moving from ICD-9 to ICD-10 coding, there is a shift from asthma

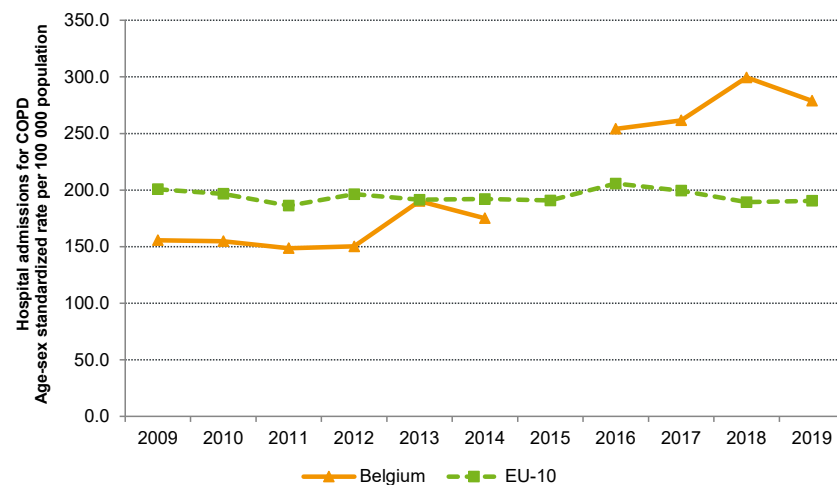
admission to COPD admission for some mixed conditions. Comparison between the two periods must therefore be used with caution. During the 2016-2019 period, an increase in hospital admissions for COPD can be observed, except in Brussels and in 2019, rates were lower in Brussels than in other regions (228.3 in Brussels, 314.7 in Flanders and 393.8 in Wallonia, see Figure 51). Based on an expert opinion, the lower rate in Brussels can in part be explained by the fact that the population is usually younger. An analysis by district shows that Hall-Vilvorde (177.2) has the lowest hospital admission rates for COPD per 100 000 population while Marche-en-Famenne has the highest (475.1, see Figure 51).



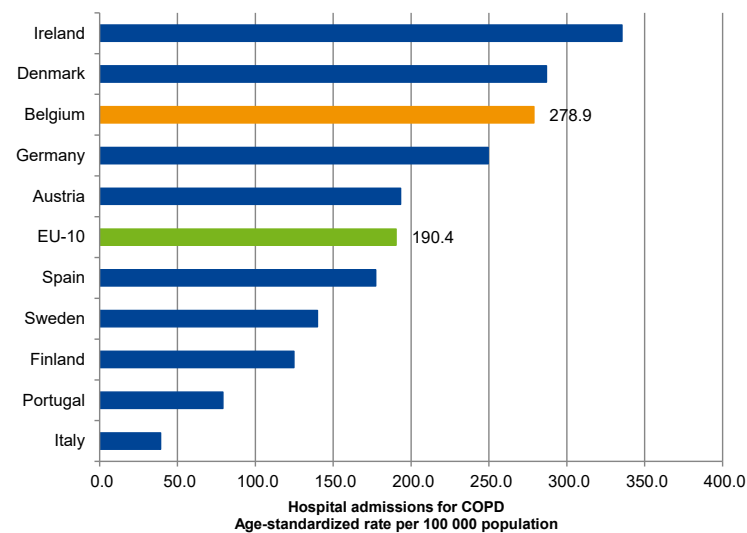
Figure 51 – Hospital admissions for (complications of) COPD per 100 000 population aged 15 years and older, per region (2009-2019) and per district (2019)



Compared to other European countries, Belgium was below the European average during the 2009-2014 period and above the European average during the 2016-2019 period, i.e. after the break in data series due to the passage to the ICD-10. Because the passage to the ICD-10 (implying a shift from asthma to COPD for some mixed conditions) is not performed at the same time period in each European country, such comparison must be used with caution. Figure 52 also showed that the European average (based on 10 of the EU-15 countries) is quite stable.

**Figure 52 – Age-sex standardized hospital admissions for COPD (for population aged 15 years and older): international comparison (2009-2019)**

Source: OECD health data 2021





Key points

- Hospital admission rates for asthma, diabetes, and COPD are often used as a measure of the extent to which people can access primary care and preventive care, and the quality of this care. For COPD nevertheless, these patients are extremely fragile and the pathology is very serious. A large number of hospitalisations is therefore less a reflection of poor primary care and for this indicator, the evolution is more meaningful than the absolute number.
- For these indicators on avoidable hospital admissions, trends over time report a reduction in admission rates over recent years for asthma and diabetes, which may represent an improvement in the quality of primary care. These decreasing trends are also observed in other European countries. This is nevertheless not the case for COPD, which shows an increasing trend over recent years (except in Brussels).
- Belgium is situated above the EU-15 average for diabetes and COPD, but this is not very informative, as differences between countries can be due to many other factors than quality of care. Trends over time are more informative in this case. Time differences in the passage to the ICD-10 between countries also decrease the validity of the international comparison, especially because such a passage induces a shift from asthma to COPD admissions for some mixed condition.
- While care trajectories have been developed to improve care for patients with diabetes, this is not the case for patients with asthma and COPD. Nevertheless, rehabilitation conventions for the care of these patients in specialized centres have been concluded, as for patients with diabetes.

References

1. OECD. Health at a Glance: Europe 2014. OECD Publishing; 2014.
2. OECD. Health at a Glance 2017: OECD Indicators. Paris: 2017. Available from: http://dx.doi.org/10.1787/health_glance-2017-en
3. OECD. Health Care Quality and Outcomes (HCQO) 2020-21 Indicator Definitions. Paris: Organisation for Economic Co-operation and Development; 2021. Available from: <https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf>
4. Kossarova L, Blunt I, Bardsley M. Quality Watch: Focus on international comparisons of healthcare quality, What can the UK learn ? . The Health Foundation and the Nuffield Trust; 2015.



18. SUCCESSFUL TREATMENT OF PULMONARY TUBERCULOSIS CASES (QE-11)

18.1. Documentation sheet

Description	Percentage of people with laboratory-confirmed Tuberculosis (TB) successfully treated among TB cases notified during past year
Calculation	Numerator: number of people successfully treated from laboratory confirmed pulmonary tuberculosis within the Belgian tuberculosis cohort of the previous year. Denominator: number of people with laboratory confirmed pulmonary tuberculosis notified the previous year, included in the Belgian tuberculosis cohort and for which information about their follow up or treatment outcome at 12 months was available. Result is provided as a percentage.
Rationale	Since the 1970s, Belgium has had compulsory reporting and registration of tuberculosis cases. Since 1995, our country has participated in the European surveillance network. This system allows the comparison of the epidemiology of European countries and helps to define coordinated prevention measures. According to the recommendation of the World Health Organisation (WHO)¹, Belgium has implemented a system to collect data on the therapeutic results in a standardised manner since 2002.² In the treatment of tuberculosis, compliance is essential to cure. However, keeping the patient's adherence to the TB treatment is challenging. Indeed, it is a long treatment of minimum 6 months, and, in addition, the treatment consists on a polytherapy with many potential side effects.³ The calculation of the indicator on successful treatment of pulmonary tuberculosis cases allows to assess the effectiveness and the compliance of the patients to their treatment. This indicator reflects notably the capacity of the health system to ensure the adhesion to a long and difficult treatment, especially as it affects, as described in the tuberculosis section of the health status report, a public that is often in a precarious situation.²
Primary data source	The Belgian tuberculosis register: data from 2014, 2015, 2016, 2017 and 2018 are used. All results are published in reports available on the websites of the 'Fonds des affections respiratoires - FARES ASBL'⁴ and the 'Vlaamse vereniging voor respiratoire gezondheidzorg en tuberculosebestrijding VZW – VRGT'.⁵ The Belgian tuberculosis register is created by merging databases from Flanders (Agenschap Zorg en Gezondheid), Brussels (Inspection d'hygiène de la Commission Communautaire Commune) and Wallonia (Cellule de surveillance des maladies infectieuses en Wallonie). In all of the three regions, TB registration is mandatory. So the Belgian tuberculosis register attempts to accurately represent the situation in Belgium. The data is processed in compliance with the General Data Protection Regulation. Encoded pseudo-anonymously by regional teams, they are then centralised once a year to be validated and processed by the data manager.² Treatment outcomes data are collected by FARES, VRGT and Agenschap Zorg en Gezondheid from the patient's physician in charge of the clinical follow-up. In 2018 (last cohort for which there is available data concerning treatment outcomes), 981 new notifications of TB cases were included in the register, from which 526 were eligible to be included in the cohort of lung tuberculosis treatment follow-up (see inclusion criteria in technical definition just below).



Technical definitions	The study population is part of the Belgian cohort of the tuberculosis register. It includes only people with bacteriological confirmation of pulmonary tuberculosis at the diagnostic phase (n=545) for whom FARES/VRGT/Agentschap Zorg en Gezondheid's teams got follow-up information on treatment outcomes at one year (n=526). Although the Belgian register includes TB incident cases whatever the localisation (with 71% being pulmonary TB), the results of the follow up study published in the Belgian report only includes the pulmonary cases. However, the European report includes all TB cases (for Belgium also). The term 'successfully treated' covers two different treatment outcomes grouped together: patients with bacteriological evidence of negativity and patients who have completed their treatment but with no bacteriological result. Successful treatment rate is an indicator that evaluates the management of the TB cases in a public health perspective. TB successful treatment rate indicator is a usual indicator through countries and regions.
Limitations	All confirmed pulmonary TB cases (new and previously treated cases) are evaluated together in Belgium because the information collected about previous TB treatment is not reliable and does not allow to distinguish relapses, failure and return after defaulted (clinical history usually not available) There is no treatment follow-up data available for 8 patients of the cohort 2018. Many European countries reports only few data on treatment follow-up.
International comparability	Data comes from the database of the European Centre for Disease Prevention and Control (ECDC) and the database of the European Region of the WHO. The analysis of those databases is reported in the same document: "Tuberculosis surveillance and monitoring in Europe". The last report was published in 2021 and analyses the data of 2019 which means the treatment outcomes of the cohorts of 2018.⁶ Since 2008, the ECDC and the WHO Regional Office for Europe have coordinated the collection and analysis of TB surveillance data in Europe. The standards and definitions have been agreed by experts. Reporting completeness varied among countries due to differences in legislation, surveillance systems and TB case identification. Everyone should be cautious when making comparisons across countries as the rate of data reporting by countries vary a lot. So only data from a short number of EU-countries (n=7) can be taken into account as they report treatment follow-up data for at least 80% of their notification cohort. However a global mean for 29 European countries is available based on the analysis of all the reported treatment follow-up cases whatever the country's origin of the data (63.7%).⁶ A difference appears between the data reported in Belgium and at the European level. Indeed, in Belgium, the success of the management only concerns confirmed pulmonary tuberculosis cases, whereas the data reported in the European report does not specify the body's location of tuberculosis. However, in the EU data, Belgian data concern all cases. This difference does not hamper the comparability.
Performance dimension	Quality of care : effectiveness
Related indicators	/



18.2. Results

In Belgium in 2019, 81.2% of the people with proven pulmonary tuberculosis (TB) were successfully treated (n=427). This proportion of favourable treatment outcomes corresponds to an increase of 3.5 points of percentage from 2017 (77.7%) but to a decrease of 3 points of percentage from 2014 (84.2%) (see Figure 53 and Table 31). The target set by WHO is 85% of success rate.²

The term 'successfully treated' covers two different treatment outcomes grouped together: patients with bacteriological evidence of negativity; they are a minority (n=82); and patients who have completed their treatment but without bacteriological evidence of negativity; they are a majority (n=345). So the group of "successfully treated" mainly includes people without bacteriological results. Indeed, the bacteriological evidence of TB negativity in the lung is obtained only in 15.6% of the patients in the Belgian follow-up cohorts (see Table 32).

Between regions, very small differences exist in 2019 and those differences vary over time (see Figure 53). In 2019, Wallonia (84.2%) performs a little bit better than Flanders (80.8%) and Brussels (79.3%) (see Table 31). But from 2014 to 2015, Wallonia performed worse than Brussels and Flanders. Since 2016, the success rate in Brussels is slightly lower than in the other regions. One explanation could be that big cities host often more people at risk of unsuccessful treatment outcome (homeless people, asylum seekers, ...).²

Other items included in 'unsuccessful treatment outcomes' are death, treatment failure and treatment discontinuation, also known as loss to follow-

up. Failure means that patient take the treatment correctly but does not respond. This outcome almost never happens in Belgium because treatment is always adjusted to the resistance profile. Death is usually the result of a very late diagnosis and/or co-morbidities. Loss to follow-up leads to unsuccessful treatment outcome of precarious population. Loss of follow-up is also the most valuable indicator for programmatic evaluation (which is the purpose of the TB register).

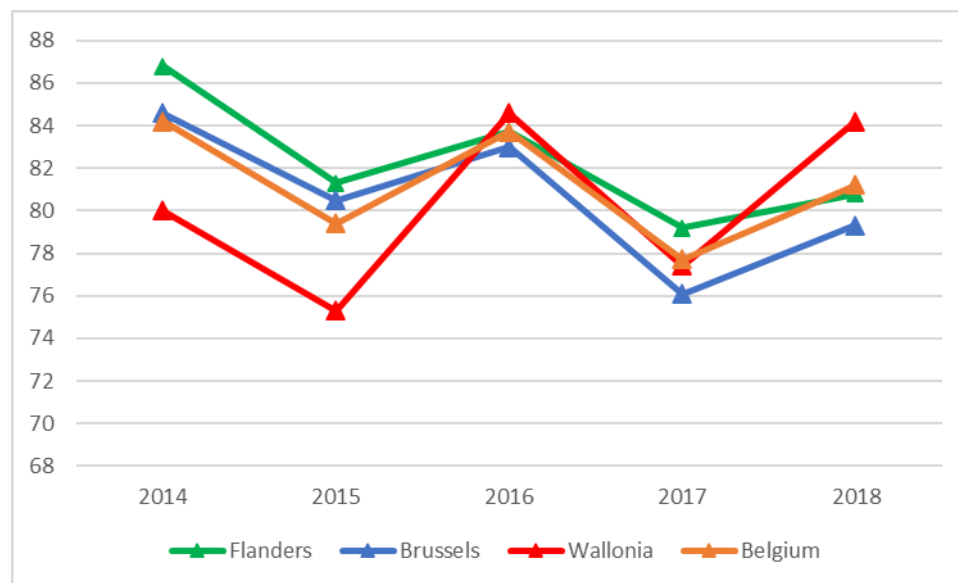
18.3. International comparison

According to the ECDC/WHO Europe report⁶, the treatment success rate among 173 058 new and relapse TB cases having started treatment with first-line drugs in 2018 was 76.5% in EU WHO Region (53 countries). The treatment success rate shows results comparable with the previous year. Only 14 countries and areas achieved an 85% treatment success rate in this treatment cohort. Another 13 were close to the target, with success rates of 80–85%. Seven had treatment success rates below 60%. However the annex 4 of the ECDC report⁶ shows that most of the countries do not report complete data. In several countries, a very high proportion of cases are not evaluated (see Table 33). The Figure 54 shows the success rate of tuberculosis treatment of 7 EU-countries which report treatment outcome data for at least 80% of their cohort.

Compared to the rate available for EU-7 countries, Belgium shows a good success rate in TB treatment (81.7%), ranked at the second place, just after the Netherlands (85.7%) (see Figure 54). Belgium is categorised in the countries close to the target set by WHO.



Figure 53 – Successful treatment rate (% of people successfully treated), by year and by region



Data source: FARES and VRGT; Figure: KCE

Table 31 – Successful treatment rate in bacteriologically proven pulmonary tuberculosis at one year, per region and year

	2014	2015	2016	2017	2018
Belgium	84.2%	79.4%	83.7%	77.7%	81.2%
Flanders	86.8%	81.3%	83.7%	79.2%	80.8%
Wallonia	80%	75.3%	84.6%	77.4%	84.2%
Brussels	84.6%	80.5%	83%	76.1%	79.3%

Data source: FARES and VRGT; Table: KCE



Table 32 – Treatment outcomes (indicator-related and other issues) at one year in bacteriologically proven pulmonary tuberculosis, per region – cohort of 2018, followed in 2019

Treatment outcomes	Belgium	Flanders	Wallonia	Brussels
Treatment fully completed	81.2% (n=427)	80.8% (n=168)	84.2% (n=117)	79.3% (n=142)
Successful treatment without bacteriological evidence of negativity	65.6% (n=345)	76.9% (n=160)	59.0% (n=82)	57.5% (n=103)
Successful treatment with bacteriological evidence of negativity	15.6% (n=82)	3.8% (n=8)	25.2% (n=35)	21.8% (n=39)
Treatment failure	0.2% (n=1)	0.5% (n=1)	0% (n=0)	0% (n=0)
Death	8.2% (n=43)	11.1% (n=23)	8.6% (n=12)	4.5% (n=8)
Discontinuation of treatment	10.5% (n=55)	7.7% (n=16)	7.2% (n=10)	16.2% (n=29)

Data source: FARES and VRGT; Table: KCE



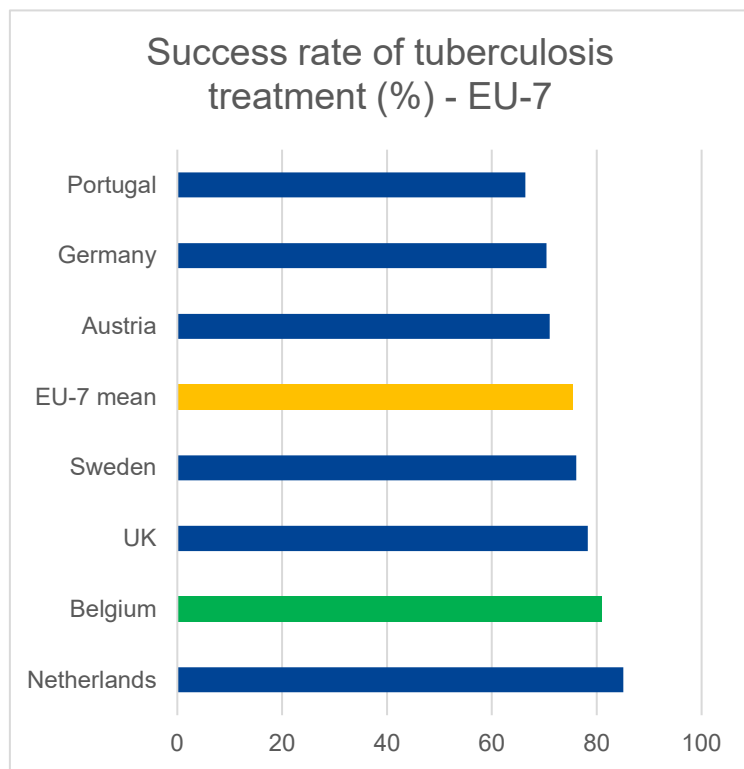
Table 33 – Successful treatment rate of incident TB cases (new cases and relapse of TB), for a sample of EU countries –reported in 2019

	Successful treatment rate at one year (%)	Completeness rate (%)
Austria	73.4	92.3
Belgium	81.7	97.2
Denmark	15.8	16.2
Finland	20.5	20.9
France	Not Available	13.3
Germany	71.4	86.6
Greece	Not Available	1.6
Ireland	38.7	47.1
Italy	NA	0
Luxembourg	NA	0
Netherlands	85.7	97.1
Portugal	67.1	100
Spain	44.9	55
Sweden	78	86.5
UK	79.5	95.8
EU-7 mean of the 7 countries for which completeness rate is above 80%	75.46	At least 80%

Data source: ECDC and WHO-Europe; Table: KCE



Figure 54 – Success of TB treatment in EU-7 countries - cohorts of 2018, data reported in 2019 (%)



Data source: ECDC and WHO-Europe; Figure: KCE



Key points

- The successful treatment rate of tuberculosis is an indicator for which WHO European Region have set the target of 85%.
- The successful treatment rate of tuberculosis is an indicator composed by two subcomponents which are summed before being reported to the analysed population: people having completed their treatment with a bacteriological proof of negativity, and people who completed their treatment but without bacteriological proof of negativity.
- The last report of the Belgian TB register (2019) shows that 81.2% of the people with proven pulmonary tuberculosis in 2018 were successfully treated at one year. This proportion of favourable treatment outcomes corresponds to an increase of 3.5 points of percentage from 2017 (77.7%) but to a decrease of 3 points of percentage from 2014 (84.2%). Actually, this rate is quite stable since several years and through the different regions.
- Compared to 7 European countries for which outcome data are reported for at least 80% of the people included in each cohort, Belgium shows a good successful treatment rate of (any site) tuberculosis (81.7%) just after the Netherlands (85.1%) according to the last available data (cohorts 2018).
- The systematic reporting of TB and follow-up of treatment outcomes, operative in Belgium since 2002, represents an important advantage to Belgian Authorities to reach the target set by WHO European Region.
- According to the FARES and VRGT, the systematic use of polytherapy, over a long period and the adherence to treatment till completion, are of the utmost importance to improve the successful treatment rate of TB in Belgium. It is necessary for the health care system to be able to support patients to complete

this long and difficult treatment. FARES and VRGT have implemented many projects to support this objective over the last few years.

References

1. World Health Organization. An Expanded Framework for Effective Tuberculosis Control. Geneva: WHO; 2002. WHO/CDS/TB/2002.297 Available from: <https://apps.who.int/iris/handle/10665/67232?locale-attribute=en&>
2. FARES - Fonds des affections respiratoires asbl. Registre Belge de la Tuberculose 2019. Bruxelles: FARES asbl; 2021 Mars 2021. Available from: https://www.fares.be/tuberculose/journee-mondiale-de-la-tuberculose/fares-registretbc2019_vd_version-web.pdf
3. Koo HK, Min J, Kim HW, Lee J, Kim JS, Park JS, et al. Prediction of treatment failure and compliance in patients with tuberculosis. BMC Infect Dis. 2020;20(1):622.
4. FARES - Fonds des affections respiratoires asbl. Rapports épidémiologiques [Web page]. Bruxelles: FARES asbl; 2021 [cited 21-10-2021]. Available from: <https://www.fares.be/tuberculose/publications/rapports-epidemiologiques>
5. Vlaamse vereniging voor respiratoire gezondheidszorg en tuberculosebestrijding VZW – VRGT. Informatiebank [Web page]. Leuven: VRGT vzw; 2021 [cited 21-10-2021]. Available from: <https://tuberculose.vrgt.be/informatiebank?term=&cid%5B23%5D=23>
6. European Centre for Disease Prevention and Control - ECDC. Tuberculosis surveillance and monitoring in Europe 2021 : 2019 data. Copenhagen: WHO Regional Office for Europe; 2021. Available from: <https://www.ecdc.europa.eu/sites/default/files/documents/tuberculosis-surveillance-monitoring-Europe-2021.pdf>



19. PATIENTS EXPERIENCES WITH AMBULATORY HEALTHCARE SERVICE (QP-1, QP-3, QP-4)

19.1. Documentation sheet

Description	Patients experiences with ambulatory care: QP-1: Physician spending enough time with patients during the consultation (% of respondents, contact with doctor (GP or SP)) QP-3: Physician giving opportunity to ask questions or raise concerns (% of respondents, contact with doctor) QP-4: Physician involving patients in decisions about care and/or treatments (% of respondents, contact with doctor)
Calculation	Numerator: number of respondents (≥ 15 years old) who answered to the HIS (2013 or 2018) and who reported they had a good relational experience during the last contact with either a general practitioner (GP) or a specialist (SP) in ambulatory care (GP or specialist depending on which ambulatory health care provider was contacted last). Denominator: number of respondents (≥ 15 years old) who answered to the HIS and who had a contact with either a GP or a specialist in the 12 months preceding the date of the interview.
Rationale	Patient-centered care is supported by good provider-patient communication so that patient's needs and preferences can be addressed and that patients understand and participate in their own care.¹ Unfortunately, a good communication is not easy and requires several competencies (listening, explaining, courtesy...). The measurement of these skills is a challenge and several institutes tackle this issue in their surveys. In 2011, the OECD has edited a questionnaire on patient experiences with some questions related to the quality of the consultation.² On the request of the Federal Public Service Public Health, the Belgian Scientific Institute of Public Health (Sciensano) includes since the Health interview survey 2013 the OECD instrument dedicated to the patient experiences with ambulatory care.
Data source	HIS 2013, HIS 2018 and HISLink data. In the HISLink project, Sciensano performed a linkage between Health Interview Survey (HIS) 2013/2018 and IMA – AIM data (2013-14/2018), partly to verify the HIS reporting on the use of care but also to overcome the shortcomings of the health insurance data (e.g. information on non-reimbursed health care use is lacking, no link between health care use and health needs, information on socio-demographic background characteristics is scarce). Data extracted from the HIS are covering the following topics: socio-demographic characteristics, health status, lifestyle and health care use.
Technical definitions	Question based on the OECD module²: Now, refer to the last time you had a consultation either with a GP; either with a specialist: QP1. Did this doctor spend enough time with you? QP2. Did this doctor explain things in a way that was easy to understand? (indicator not retained in the final list of indicators in this report, see Devos et al. 2019³ for results) QP3. Did this doctor give you an opportunity to ask questions or raise concerns about recommended treatment? QP4. Did this doctor involve you as much as you wanted to be in decisions about your care and treatment? Chronic definitions:



	1) HIS: The number of persons reporting to suffer from a chronic disease by answering “yes” to the following question in the HIS; the denominator is the number of respondents of the following question in the HIS (MA_SH02): “Do you suffer from a chronic disease or affection?”. 2) IMA – AIM: Individuals entitled to the status chronic illness. Entitlement is observed through data from the InterMutualistic Agency (IMA – AIM), variables pp3015, pp3016 or pp3017 (see ⁴ for definition of the variables). If the value for one of these 3 variables is equal to 1 or 2, the individual has an entitlement and is assumed to suffer from a chronic condition.
Limitations	It remains subjective assessment Even if respondents without contact with a physician during the last 12 months were excluded, the delay between consultation and survey can be long; Focus on ambulatory care only; home visits by GPs excluded. Less than 15 years are excluded.
International comparability	Yes, data based on an OECD module, questions are comparable in all countries but with caution because the way in which the information in different countries is collected (special survey vs overall health survey, sampling scheme, survey organisation, etc.) may have an impact on the outcome of the result.
Dimensions	Patient centredness (Providers skill of communication/Explaining ability); Ambulatory care

19.2. Results

QP1. Did the doctor spend enough time with you?

According to the Belgian HIS 2018, 97.5% (95% Confidence Interval (CI): 97.0-97.9) of patients mentioned their doctor (GP or specialist) spent enough time with them during the consultation; this percentage equals that of 2013. A lower satisfaction is reported by young adults (25-44 years: ~96%) than by the very young (15-24 years: 98.3%) and the oldest (≥45 years: ≥97%) (see Table 34).

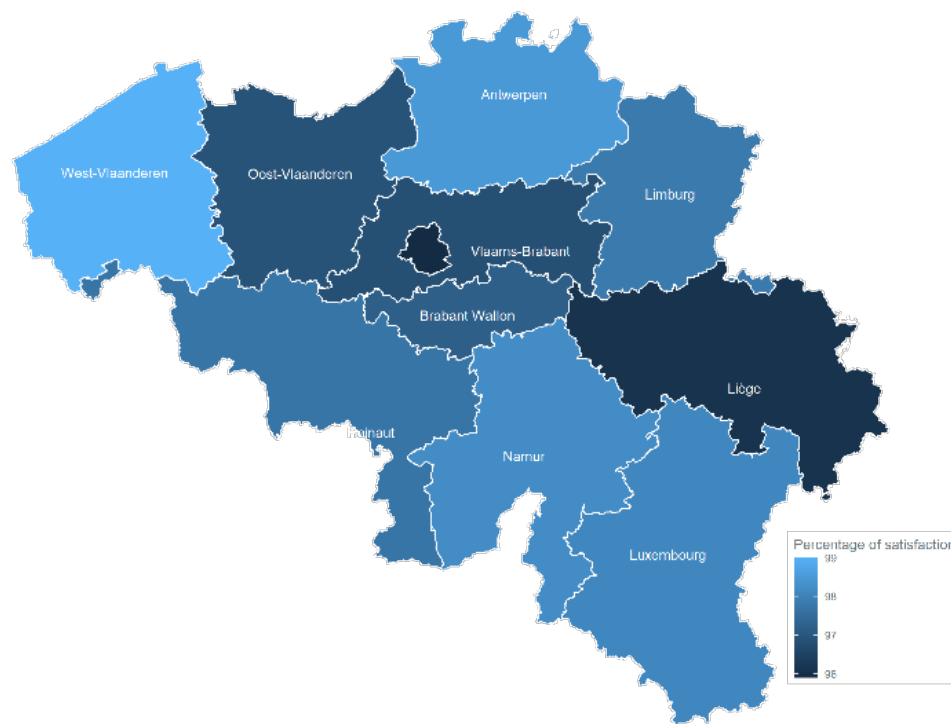
By province in 2018, the stratification with time spent by the doctor is the highest in West-Vlaanderen (99.0%) and Antwerpen (98.5%) and the lowest in Liège (96.1%) and Brussels (95.9%) (see Figure 55) .

Table 34 – Percentage of satisfaction with time spent by the doctor, by age-group, by year

Age group	2013		2018	
	%*	95% CI	%*	95% CI
15-24	98.1	96.8;99.4	98.3	96.7;99.9
25-34	97.0	95.7;98.3	96.1	94.6;97.6
35-44	97.8	96.3;99.3	96.5	95.2;97.8
45-54	96.9	95.4;98.5	98.0	97.2;98.8
55-64	97.3	97.2;99.2	98.1	97.2;99.0
65-74	98.2	96.0;99.0	98.1	97.2;99.0
75+	97.5	96.0;99.0	97.0	95.4;98.5
Total	97.5	96.9;98.0	97.5	97.0;97.9

Data: Sciensano, *weighted percentage

Figure 55 – Percentage* of satisfaction with time spent by the doctor, by province, 2018



Data: Sciensano, *weighted percentage, Figure: KCE

**Analysis by chronic status (entitled to chronic illness status or self-reported chronic disease)**

The satisfaction trend differs according to the chronic status. Indeed, among patients without chronic disease (self-reported or no entitlement), satisfaction with the time spent by the doctor deteriorated between 2013 and 2018 (especially among self-reported patients without chronic disease - HIS). Whereas among chronic patients (self-reported, entitled or both), satisfaction increased between 2013 and 2018, this is particularly the case among patients with both chronic disease statuses (+4.4 points of percentage between 2013 and 2018) (see Figure 56 and Table 35). As a result, in 2018, the satisfaction was similar between chronic and non-chronic patients (both based on the entitlement to the chronic illness status or based on self-reported chronic disease).

The analysis by region shows that the satisfaction with time spent by the doctor among patients entitled to the status chronic illness increased in Flanders and Brussels and decreased in Wallonia (2013 versus 2018). In 2018, the satisfaction is the highest in Flanders (98.3%) and similarly lower in Brussels and Wallonia (96.7%) (see Figure 57 and Table 35). Among the population not entitled to the chronic illness status, the satisfaction

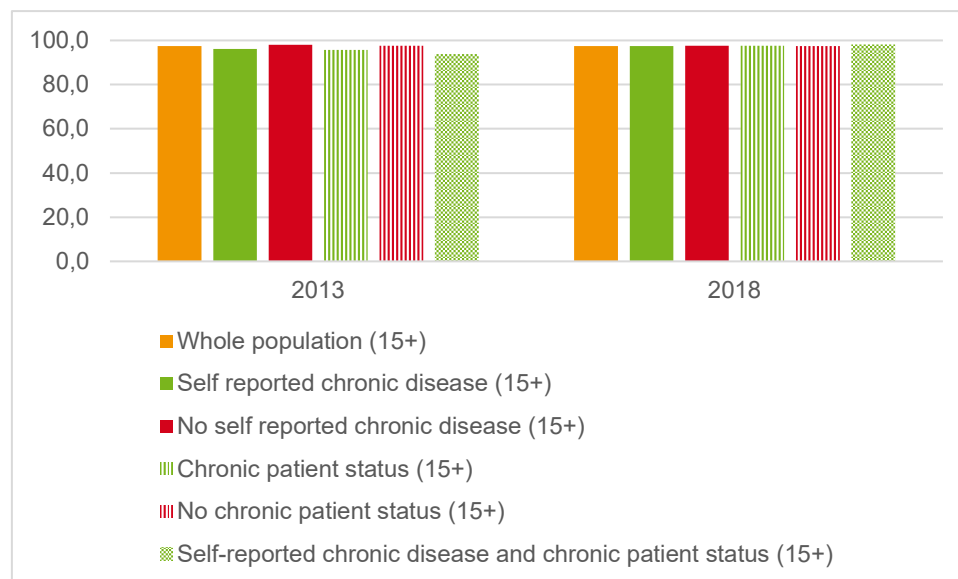
decreased in Flanders and Wallonia and increased in Brussels (2013 versus 2018). In 2018 in Flanders and Brussels, the satisfaction with time spent by the consulted physician is higher in patients entitled to the chronic illness status than in the patients not entitled to chronic status. In Wallonia, the percentage of satisfaction is higher in patients not entitled to the chronic status (see Figure 57 and Table 35).

For the self-reported chronic patients (HIS), the satisfaction increased in every region between 2013 and 2018 and decreased in every region for the non-chronic patients (see Figure 58 and Table 35). In Brussels and Flanders, the patients with self-reported chronic disease are more frequently satisfied than the patients without chronic disease.

Overall, the patients with both chronic status (HIS and RIZIV – INAMI) are even more satisfied (2018: 98.2%) than the patients with only one chronic status (2018: HIS: 97.4% or RIZIV – INAMI: 97.6%). The same observation is made in Flanders and Wallonia. Whereas in Brussels, the percentage of patients satisfied with time spent by the doctor is the highest in the persons entitled to the chronic illness status, but the differences are low (see Table 35).



Figure 56 – Proportion of satisfied patients (15 years old and plus) about the time spent by their physician during consultation, by chronic status, by year



Data: Sciensano (HISLink); Figure: KCE

Table 35 – Proportion of satisfied patients (15 years old and plus) about the time spent by their physician during consultation, by region and chronic status (2013, 2018)

	Belgium			
	2013		2018	
	%	95% CI	%	95% CI
All population	97.5	96.9;98.0	97.5	97.0;97.9
Self-reported chronic disease	96.2	94.8;97.5	97.4	96.7;98.2
No self-reported chronic disease	98.1	97.5;98.7	97.6	97.0;98.1
Chronic illness status	95.7	93.1;98.3	97.6	96.4;98.8
No chronic illness status	97.6	97.1;98.2	97.4	96.9;97.9
Self-reported chronic disease and chronic illness status	93.8	90.0;97.7	98.2	91.1;99.3

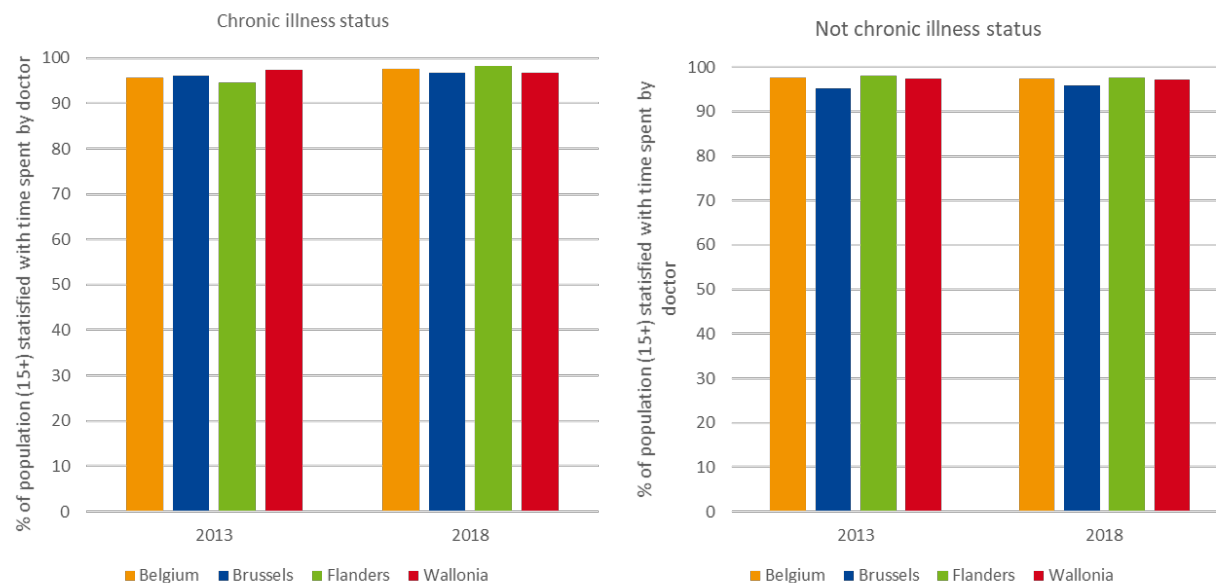


	Brussels			
	2013		2018	
	%	95% CI	%	95% CI
All population	96.0	94.7;97.2	95.9	94.9;97.0
Self-reported chronic disease	95.8	93.7;98.0	96.5	94.9;98.1
No self-reported chronic disease	95.7	93.8;97.6	95.4	93.9;96.9
Chronic illness status	96.1	92.7;99.4	96.7	94.5;98.9
No chronic illness status	95.3	93.8;96.9	95.9	94.7;97.1
Self-reported chronic disease and chronic illness status	97.5	93.8;100.0	95.6	92.2;99.0
	Flanders			
	2013		2018	
	%	95%CI	%	95%CI
All population	97.9	97.1;98.6	97.8	97.2;98.5
Self-reported chronic disease	96.5	94.6;98.4	98.0	97.0;98.9
No self-reported chronic disease	98.6	97.9;99.3	98.0	97.2;98.7
Chronic illness status	94.6	90.4;98.9	98.3	96.8;99.9
No chronic illness status	98.1	97.4;98.8	97.7	97.1;98.4
Self-reported chronic disease and chronic illness status	92.6	86.9;98.4	98.6	97.0;100
	Wallonia			
	2013		2018	
	%	95% CI	%	95% CI
All population	97.2	96.2;98.1	97.2	96.4;98.0
Self-reported chronic disease	95.6	93.4;97.9	96.9	95.4;98.3
No self-reported chronic disease	97.5	96.4;98.7	97.4	96.4;98.5
Chronic illness status	97.4	95.0;99.7	96.7	94.3;99.1
No chronic illness status	97.3	96.2;98.4	97.2	96.4;98.1
Self-reported chronic disease and chronic illness status	95.4	91.3;99.5	98.3	96.9;99.8

Source: Health Interview Survey, Belgium, 2013;2018.⁵



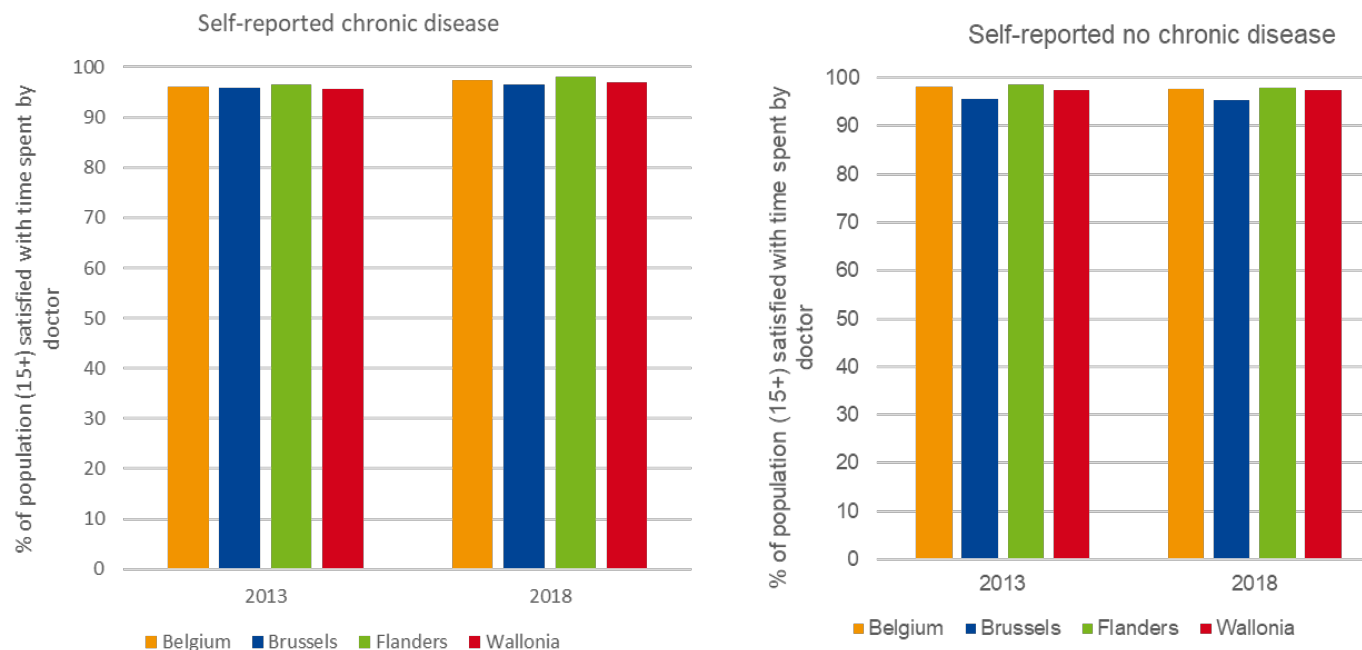
Figure 57 – Proportion of satisfied patients (15 years old and plus) about the time spent by their physician during consultation, by region and RIZIV – INAMI chronic illness status (2013, 2018)



Data: Sciensano (HISLink), Figure : KCE



Figure 58 – Proportion of satisfied patients (15 years old and plus) about the time spent by their physician during consultation, by region and HIS chronic status (2013, 2018)



Data: Sciensano (HISLink), Figure : KCE

International comparison

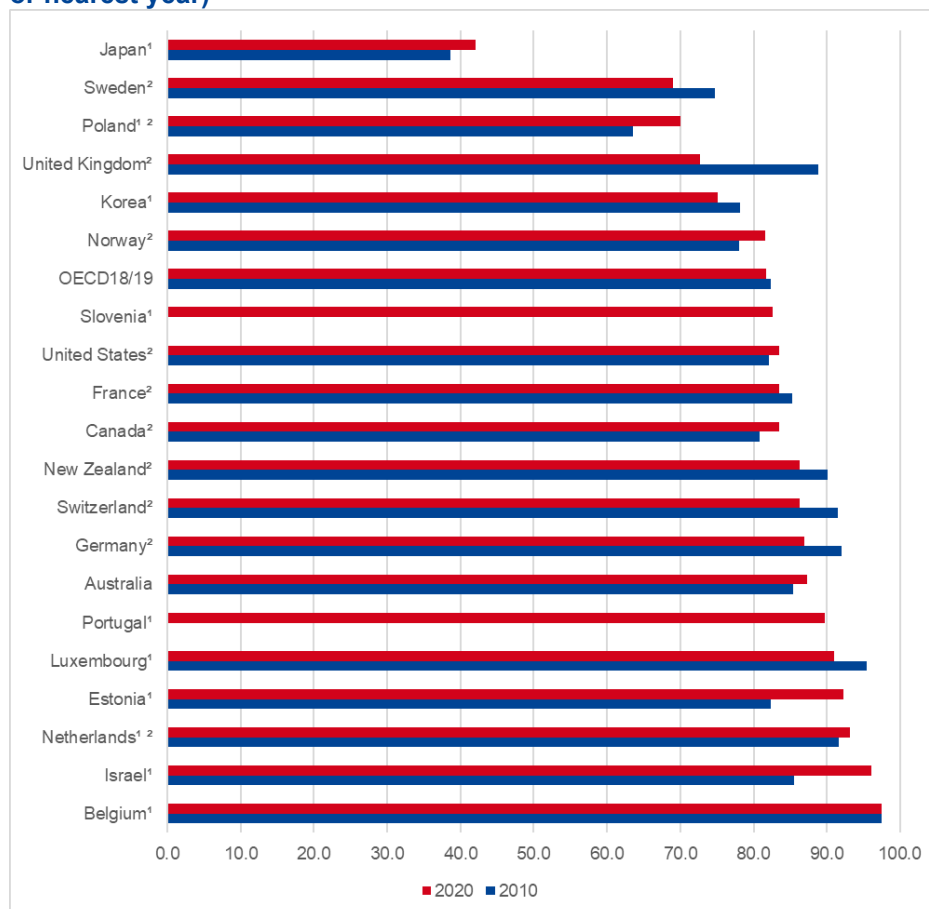
The questionnaire used in the Belgian health interview survey is also used by other countries. This allows some comparisons such as performed by the OECD in the report 'Health at a Glance' published in 2021.⁶ Twenty countries are compared. Data concern all physicians without distinction between general practitioners and specialists and comparisons are

approximate as the years of data collection are not the same in all countries (years were as close to 2020 as possible). Compared with 20 countries, Belgium ranks first for patient satisfaction related to the time spent by their physician during consultation.

No specific analysis is nevertheless performed for chronic patients (compared to non-chronic patients) internationally.



Figure 59 – Proportion of satisfied patients concerning the time spent by their physician during consultation: international comparison (2013-2020 or nearest year)



Sources: *Health at a Glance, OCDE, 2021* ⁶– *Health Survey, Belgium, 2018*.

1. Data from national sources. 2. Data refer to patient experiences with regular doctor or regular practice.

**QP3 - Did the doctor give you an opportunity to ask questions or raise concerns about recommended treatment?**

In Belgium, 97.5% of patients agreed they had the opportunity to ask questions to the doctor or to express their concerns about the treatment, where appropriate. This high rate is found at all ages but a little lower in the 75+ (96.0%). The rate of satisfaction is stable since 2013 (see Table 36).

Table 36 – Percentage of the patient population aged 15 years and over who report that the doctor gave the opportunity to ask questions or raise concerns about recommended treatment

Age group	2013		2018	
	%*	95% CI	%*	95% CI
15-24	98.3	97.0;99.6	97.7	95.7;99.7
25-34	97.3	96.0;98.6	97.6	96.4;98.8
35-44	98.4	97.6;99.2	96.8	95.6;98.0
45-54	97.0	95.7;98.3	97.9	97.0;98.7
55-64	98.2	97.4;99.1	97.7	96.4;99.1
65-74	97.6	96.4;98.8	98.4	97.6;99.3
75+	96.3	94.4;98.3	96.0	94.3;97.6
Total	97.6	97.2;98.1	97.5	97.0;98.0

Data: Sciensano, *weighted percentage

By chronic status (entitled and self-reported)

Among patients with self-reported chronic disease, satisfaction with the opportunity to ask questions slightly increased between 2013 and 2018 (+ 1 point of percentage) and slightly deteriorated among patients entitled to chronic illness status and non-chronic patients. But in general, satisfaction with the opportunity to ask questions or raise concerns about treatment does not vary much between 2013 and 2018 and by chronic status (see Figure 60; Table 37).

In 2018 among the patients entitled to the status chronic illness, the satisfaction is the highest in Flanders (98.3 %), followed by Brussels (96.7%) and Wallonia (96.6%) and stayed stable between 2013 and 2018 (see Table 37). Among the population not entitled to the chronic illness status, the satisfaction slightly decreased in Flanders and Brussels and increased in Wallonia (2013 vs 2018). In 2018 in Flanders and Brussels, the satisfaction in patients entitled to the chronic illness status is higher than in the patients not entitled to chronic status. In Wallonia, the percentage of satisfaction is higher in patients not entitled to the chronic status (see Table 37).

For the self-reported chronic patients (HIS), the satisfaction increased in Flanders and Wallonia and decreased in Brussels (2013 vs 2018) and decreased in Flanders and increased in Brussels and Wallonia for the non-chronic patients. However, the differences in satisfaction between years are small (see Table 37).

Overall, the patients with both chronic status (HIS and RIZIV – INAMI) are even more satisfied (2018: 97.3%) than the patients with only one chronic status (2018: HIS: 97.1% or RIZIV – INAMI: 96.6%). The same observation is made in Wallonia. Whereas in Brussels and Flanders, the percentage of patients satisfied is the highest for persons entitled to the RIZIV – INAMI chronic illness status (see Table 37).



Figure 60 – Percentage of the patient population aged 15 years and over who report that the doctor gave the opportunity to ask questions or raise concerns about recommended treatment, by chronic status and year

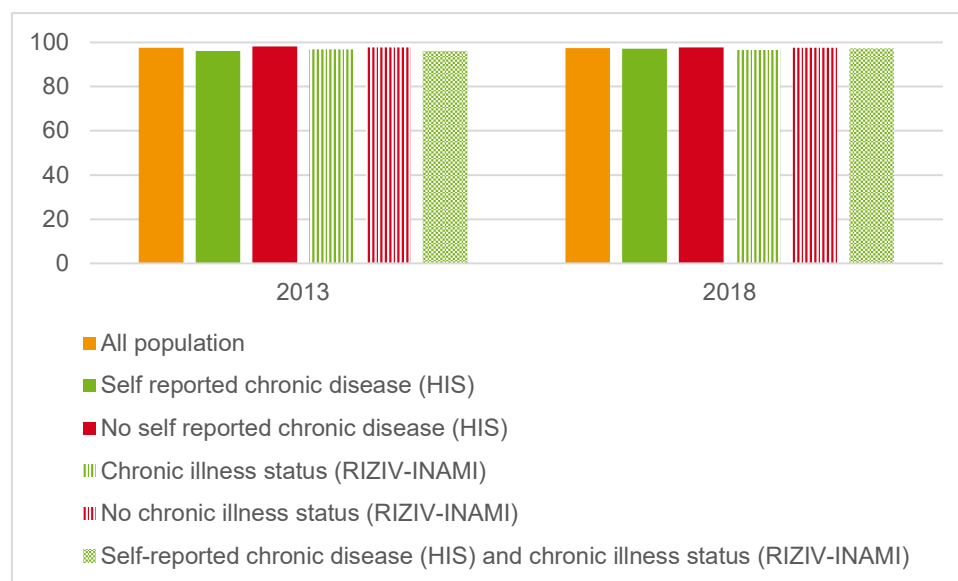


Table 37 – Percentage of the patient population aged 15 years and over who report that the doctor gave the opportunity to ask questions or raise concerns about recommended treatment

	Belgium			
	2013		2018	
	%	95% CI	%	95% CI
All population	97.6	97.2;98.1	97.5	97.0;98.0
Self-reported chronic disease	96.1	94.9;97.3	97.1	96.1;98.0
No self-reported chronic disease	98.2	97.7;98.8	97.7	97.1;98.3
Chronic illness status	96.9	95.4;98.4	96.6	95.1;98.1
No chronic illness status	97.8	97.3;98.2	97.6	97.1;98.1
Self-reported chronic disease and chronic illness status	96.2	94.1;98.3	97.3	95.7;99.0
	Brussels			
	2013		2018	



	%	95% CI	%	95% CI
All population	95.7	94.3;97.1	95.9	94.9;97.0
Self-reported chronic disease	95.2	93.0;97.5	94.3	92.1;96.5
No self-reported chronic disease	95.7	93.4;98.1	96.2	94.8;97.6
Chronic illness status	96.6	93.5;99.7	96.7	94.4;98.9
No chronic illness status	95.2	93.6;96.9	96.0	94.8;97.2
Self-reported chronic disease and chronic illness status	98.1	95.3;100.0	94.4	90.6;98.3
Flanders				
	2013		2018	
	%	95%CI	%	95%CI
All population	98.2	97.5;98.8	98.0	97.4;98.7
Self-reported chronic disease	96.3	94.7;98.0	97.8	96.5;99.1
No self-reported chronic disease	98.8	98.1;99.4	98.0	97.2;98.8
Chronic illness status	96.2	93.8;98.6	98.3	96.7;99.9
No chronic illness status	98.5	97.9;99.0	98.1	97.3;98.8
Self-reported chronic disease and chronic illness status	95.4	92.3;98.5	97.5	95.5;99.4
Wallonia				
	2013		2018	
	%	95% CI	%	95% CI
All population	97.2	96.3;98.0	97.0	96.1;97.9
Self-reported chronic disease	95.9	94.0;97.8	96.6	94.9;98.3
No self-reported chronic disease	97.7	96.6;98.7	97.5	96.5;98.5
Chronic illness status	98.0	96.3;99.7	96.6	94.1;99.1
No chronic illness status	97.1	96.1;98.0	97.2	96.3;98.1
Self-reported chronic disease and chronic illness status	97.5	95.2;99.8	97.8	94.4;100.0

International comparison

Since 2013, no update of the international comparison has been performed by OECD. In 2013, compared with 13 countries, Belgium ranked first for the patient's perception of their opportunity to ask questions to their physician or to express their concerns about treatment (for additional results see ³). No specific analysis is nevertheless performed for chronic patients (compared to no chronic patients) internationally.

Q18. Did this doctor involve you as much as you wanted to be in decisions about your care and treatment?

In Belgium, 95.4% of patients agreed they were sufficiently involved in decisions about their care or treatment, where appropriate. This percentage is slightly higher than in 2013 (95.2%). This high rate is found at all ages (see Table 38), and for both sexes.



Table 38 – Percentage of the patient population aged 15 years and over who report that they were sufficiently involved in decisions of the doctor about care and treatment, by year

Age group	2013		2018	
	%*	95% CI	%*	95% CI
15-24	94.9	92.3;97.4	94.9	92.0;97.7
25-34	94.6	92.7;96.6	94.9	93.2;96.7
35-44	95.6	93.9;97.3	94.2	92.3;96.0
45-54	94.9	93.1;96.6	95.4	93.8;97.0
55-64	95.2	93.3;97.0	96.6	95.4;97.8
65-74	95.9	93.4;97.7	97.4	96.3;98.5
75+	95.5	93.4;97.7	94.2	92.0;96.5
Total	95.2	94.4;95.9	95.4	94.8;96.1

By chronic status (entitled and self-reported)

The patient satisfaction with the involvement in decisions of the doctor slightly increased between 2013 and 2018 regardless of the chronic illness status (see Table 39). Overall the satisfaction in patients with chronic illness status (95.8%) is higher than the patients who are not entitled to the chronic illness status (95.4%).

In 2018 among the patients entitled to the status chronic illness, the satisfaction is the highest in Flanders (96.9 %), followed by Wallonia (94.6%) and Brussels (93.5%) (see Table 39).

For the self-reported chronic patients (HIS), the satisfaction is the highest in Flanders (95.1%), followed by Wallonia (93.6%) and Brussels (91.8%). In contrast to the results of the satisfaction among patients entitled to the chronic illness status, the self-reported chronic patients are less satisfied than the patients who do not self-report chronic disease (see Table 39).

Table 39 – Percentage of the patient population aged 15 years and over who report that they were sufficiently involved in decisions of the doctor about care and treatment, by year and chronic status

	Belgium			
	2013		2018	
	%	95% CI	%	95% CI
All population	95.2	94.4;95.9	95.4	94.8;96.1
Self-reported chronic disease	93.2	91.6;94.9	94.3	92.9;95.6
No self-reported chronic disease	95.7	94.7;96.7	96.1	95.3;96.9
Chronic illness status	94.7	92.8;96.6	95.8	94.2;97.4
No chronic illness status	95.3	94.5;96.2	95.4	94.6;96.1
Self-reported chronic disease and chronic illness status	94.1	91.6;96.7	96.2	94.3;98.1
	Brussels			
	2013		2018	
	%	95% CI	%	95% CI
All population	94.3	92.8;98.8	93.8	92.6;95.1
Self-reported chronic disease	93.4	90.5;96.2	91.8	89.3;94.2
No self-reported chronic disease	94.3	91.9;96.7	94.1	92.4;95.7
Chronic illness status	94.4	90.3;98.5	93.5	90.5;96.5

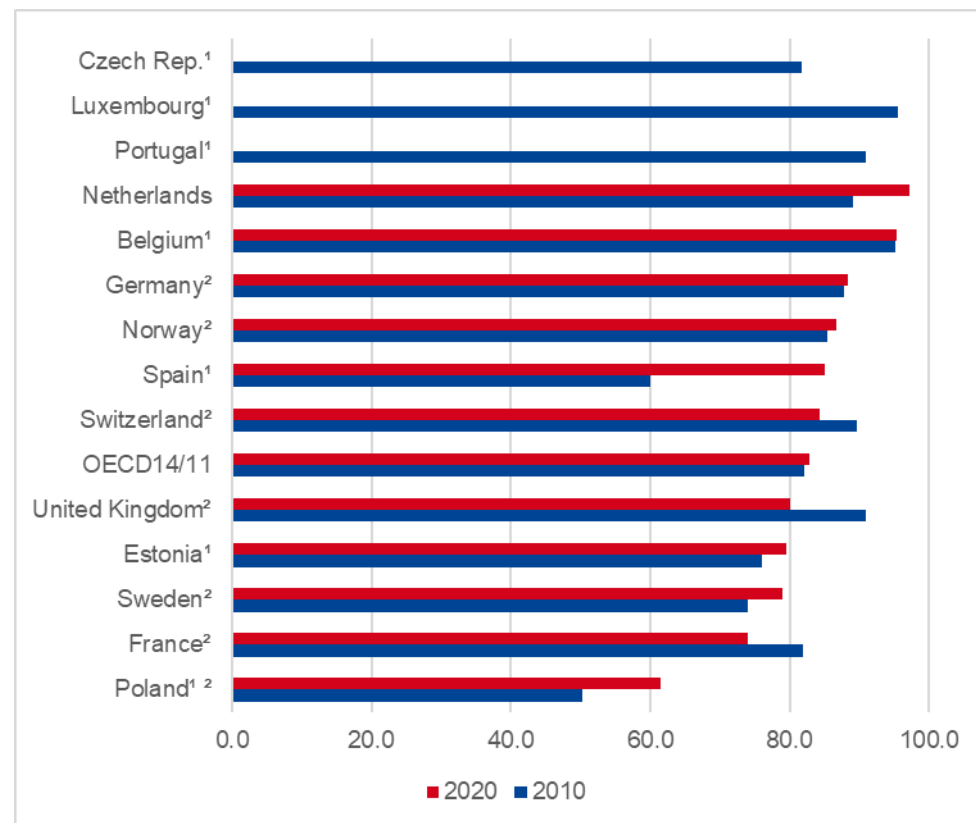


No chronic illness status	94.2	92.5;95.9	94.1	92.8;95.5
Self-reported chronic disease and chronic illness status	96.0	91.8;100.0	91.4	86.9;95.9
	Flanders			
	2013		2018	
	%	95%CI	%	95%CI
All population	95.4	94.3;96.4	96.0	95.2;96.9
Self-reported chronic disease	93.1	90.8;95.5	95.1	93.3;96.8
No self-reported chronic disease	95.8	94.5;97.1	96.6	95.6;97.5
Chronic illness status	94.3	91.4;97.1	96.9	95.1;98.7
No chronic illness status	95.6	94.4;96.7	95.8	94.9;96.8
Self-reported chronic disease and chronic illness status	93.2	89.6;96.9	97.3	95.3;99.3
	Wallonia			
	2013		2018	
	%	95% CI	%	95% CI
All population	95.1	93.9;96.3	94.8	93.5;96.1
Self-reported chronic disease	93.4	90.8;96.0	93.6	91.0;96.1
No self-reported chronic disease	95.6	94.0;97.3	95.8	94.1;97.4
Chronic illness status	95.5	92.9;98.3	94.6	91.0;98.1
No chronic illness status	95.1	93.8;96.5	94.8	93.3;96.3
Self-reported chronic disease and chronic illness status	95.6	92.0;99.2	95.6	91.5;99.8

International comparison

Compared with 11 countries in 2020. Belgium ranks second for the patients perception of their involvement in the decision about their care or treatment. No specific analysis is nevertheless performed for chronic patients (compared to non-chronic patients) internationally.

Figure 61 – Proportion of patients considering that they were sufficiently involved in decisions about their care or treatment: international comparison 2010-2020 (or nearest)



Sources: *Health at a Glance, OCDE, 2021* ⁶– *Health Survey, Belgium, 2018*.

1. Data from national sources. 2. Data refer to patient experiences with regular doctor or regular practice.



Key points

- Three items were considered to estimate the patient experiences with doctors: the time spent by the physician, the opportunity to ask questions and the patient involvement in the decision.
- The patient satisfaction is high regarding the three items regardless of the age group, region and chronic status. Overall, the satisfaction is lower for the involvement in the decisions of the doctor than for the two other items (time spent and opportunity to ask questions).
- Comparison with other countries showed that Belgium ranks first for patient satisfaction related to the time spent by their physician during the consultation and second in the patients perception of their involvement in the decision about their care or treatment.

The analysis by chronic status highlighted that:

1. Patients with both status (HIS and RIZIV – INAMI) are even more satisfied than the patients one chronic status (HIS or RIZIV – INAMI).
2. Overall the satisfaction with the opportunity to ask questions or raise concerns about treatment does not vary much by chronic status. The satisfaction is very high, regardless of chronic status, region or year.
3. In Flanders, the patients entitled to the chronic illness status are more frequently satisfied with the involvement in decisions of the doctor about treatment and care than the patients not entitled to the chronic illness status. When it comes to self-reported chronic disease status, it is the patients without chronic disease who are more frequently satisfied than the patients with chronic diseases, regardless of the region.

References

1. AHRQ. Patient Safety Indicators Resources. Agency for Healthcare Research and Quality; 2011. 2012, 21 Feb Available from: http://www.qualityindicators.ahrq.gov/Modules/psi_resources.aspx
2. OECD. Health at a glance 2011. 2011. OECD Health Policy Studies
3. Devos C, Cordon A, Lefèvre M, Obyn C, Renard F, Bouckaert N, et al. Performance of the Belgian health system – Report 2019. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2019 04/2019. KCE Reports 313 Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_313C_Performance_Belgian_health_system_Report.pdf
4. IMA - AIM. Metadata [Web page]. Brussels, Belgium; 2022 [cited 12 January 2022]. Available from: <https://metadata.ima-aim.be/fr/app/bdds/Pp>
5. Van der Heyden J, Tafforeau J, Gisle I, Drieskens S, Demarest S, Charafeddine R. Enquête de santé 2013. Rapport 3: Utilisation des services de santé et des services sociaux. Résumé des principaux résultats. Brussels: Institut de santé publique; 2015.
6. OECD. Health at a glance 2021 - OECD indicators. Paris, France: OECD; 2021. 6 January 2022 Available from: <https://www.oecd.org/health/health-at-a-glance/>
7. OECD/EU. Health at a Glance: Europe 2018: State of Health in the EU Cycle. Paris: OECD; 2018.

