1.1. Polypharmacy among older persons (OLD-13; previously QS-6)

1.1.1. Documentation sheet

Description	Proportion of the insured population aged 65 years and older, using 5 or more drugs of >80 DDD per year.
Calculation	**Health Interview Survey**
	Numerator: number of people aged 65 years and older, using at least five different drugs in the past 24 hours
	Denominator: number of people aged 65 years and older
	Pharmanet
	Numerator: number of insured people aged 65 years and older, using 5 or more drugs of >80 DDD per year.
	Denominator: number of insured people aged 65 years and older
Rationale	Chronic diseases are highly prevalent among the older population and often require multiple medications for optimal management. There are however many consequences of polypharmacy. Aside from increased direct medical costs, patients are at higher risk for adverse drug reactions, drug interactions, non-adherence, diminished functional status, and various geriatric syndromes.[1]
	Although the use of multiple drugs is widely referred to as polypharmacy, no consensus exists on what number should define the term. In the literature, polypharmacy has often been defined as taking at least five medicines concurrently. Alternately, polypharmacy has also been defined as the consumption of more medicines than clinically indicated or the consumption of medicines that are not clinically indicated.[2] Information on inappropriate medicine use is however not considered here.
Primary data source	Belgian Health Interview Survey (BHIS), Sciensano (https://www.sciensano.be/fr/projets/enquete-de-sante)[3]
	Pharmanet
Source of results	Sciensano, Health Information
	RIZIV-INAMI
Technical, definitions, and limitations	In the Belgian HIS, polypharmacy is defined as taking at least five medicines in the past 24 hours. Respondents are asked during a face-to-face interview whether they have taken any medicines during the last 24 hours. The respondent then has to show the medicines that he/she has taken during the past 24 hours, if possible with the package. The interviewer records the brand names and national codes of all medicines. In the definition of polypharmacy, only the official medicines listed in the Annotated Medicines Registry published by the Belgian Centre for Pharmacotherapeutic Information (BCFI – CBIP) are considered. The BHIS relies on self-reported data and is therefore subject to recall bias.
	The analyses of the Pharmanet data are performed by the Cell Appropriate Care of the RIZIV-INAMI in the context of the evaluation of medical practice variations. RIZIV – INAMI evaluated the consumption of 5 or more drugs of >80 DDD per year among the insured population aged 65 years and older. This indicator is proposed here as a proxy for polypharmacy since it deviates from the commonly adopted definition of polypharmacy in two distinct ways: 1) it mainly focuses on drugs for chronic diseases (> 80 DDD), and 2) it evaluates the use of medicine on an annual basis, instead of daily. Moreover, Pharmanet includes only reimbursed medicines, which exclude some important drugs like certain anti-inflammatory drugs and benzodiazepines.

International comparability	Comparison of national data with other countries is difficult/impossible because of important differences in definitions of polypharmacy, study designs and years, data collection methods, definitions of medicine and of time period used to count the number of medicines.
Reviewers	Johan Van der Heyden, Health Information, Sciensano
	Delphine Beauport, RIZIV-INAMI
	Pascal Meeus, RIZIV-INAMI

1.1.2. Results

Since the results of the HIS 2023 are not yet available, we use data from the Belgian Health Interview Survey (HIS) 2018 and an alternative source for more recent data. RIZIV – INAMI (Pharmanet) evaluated the consumption of 5 or more drugs of >80 DDD per year among the insured population aged 65 years and older in 2022. Pharmanet includes only reimbursed drugs, which exclude some important drugs like certain anti-inflammatory drugs and benzodiazepines.

HIS—Health Interview Survey

In the HIS 2018, the mean age of the study population aged 65 and older (N=2383) was 75.5 years (range: 65-101). The majority were women (58.2%), aged 65-79 years (73.6%)[a]. The mean number of medicines used per person was 3.7 (range: 0-19). 15.6% did not take any medicines during the past 24 hours. 32.4% was in the polypharmacy group (mean number of medicines: 7.3), of which 7.9% was in the excessive polypharmacy group (≥9 drugs in the past 24 hours) (mean number of medicines: 10.8).

In the univariate analysis, we observed a gradient in the prevalence of polypharmacy (Table 2) in function of age (although there was no further increase after the age of 85 years) and a higher prevalence in the lower educational levels. Compared to 2013, we observed an increase in polypharmacy in 2018, but compared to the levels of 2004 and 2008 there is no difference. No differences in polypharmacy were observed by region and gender.

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[a]   All means and proportions are weighted to match the population distribution.

Table 2 – Proportion of the population aged 65 years and older reporting having taken 5 or more different medicines during the last 24 hours, 2018.

		N	Crude % (95%CI)	OR (crude)
Year of survey	2018	2383	34.2 (31.6-36.8)	1.29 (1.08-1.53)
	2013	2020	27.4 (24.6-30.2)	-
	2008	2778	32.6 (29.9-35.3)	1.28 (1.07-1.55)
	2004	3446	32.6 (30.3-34.9)	1.38 (1.15-1.66)
Gender	Male	795	35.4 (31.6-39.3)	—
	Female	1588	33.3 (30.0-36.6)	0.91 (0.73-1.13)
Age group	65-69	693	25.8 (21.3-30.3)	—
	70-74	596	28.7 (24.3-33.2)	1.16 (0.85-1.57)
	75-79	421	38.5 (32.5-44.6)	1.80 (1.27-2.56)
	80-84	337	46.3 (38.9-53.6)	2.47 (1.70-3.60)
	85+	336	41.1 (33.8-48.4)	2.01 (1.37-2.94)
Region	Flanders	980	34.4 (30.9-38.0)	—
	Brussels	503	33.7 (28.8-38.5)	0.97 (0.74-1.26)
	Wallonia	900	33.9 (29.6-38.3)	0.98 (0.76-1.26)
Education level	No degree / Primary	382	45.1 (38.3-51.9)	2.23 (1.58-3.15)
	Secondary inferior	507	38.2 (32.5-43.9)	1.68 (1.22-2.31)
	Secondary superior	621	32.2 (27.5-37.0)	1.29 (0.96-1.74)
	Superior education	818	26.9 (22.8-31.0)	—

Source: Health Interview Survey, Sciensano, Belgium[3]

Pharmanet

Table 1 summarizes the Pharmanet estimates for the period 2022. The percentage of the insured population aged 65 and over that used in the past year 5 or more different drugs of >80 DDD, was 42% in 2022. Overall, polypharmacy was higher in men, in age groups 80 to 94 years old, in the Walloon Region, and among people with preferential reimbursement entitlement ("verhoogde tegemoetkoming", "intervention majorée"). Differences between districts reached more than 30% between Antwerpen (36.4%) and La Louvière (49.5%) (Figure).

Polypharmacy concerned more than 50% of the insured population aged 80 to 94 years old in 2022, this is more than registered by the BHIS in 2018 (Figure 2). Figure 2 also shows that the coefficient of variations between districts is high for younger age groups making the case for an important potential for improvement for younger age groups. Polypharmacy is stable between 2019 and 2022 (Figure 3).

Table 1 – Percentage of the insured population aged 65+ using 5 or more drugs of >80 DDD per year, 2022

2022		Both sexes	Male	Female
TOTAL		**42%**	**43%**	**40%**
Age group	65-69	31%	33%	29%
	70-74	39%	42%	37%
	75-79	47%	49%	45%
	80-84	51%	52%	50%
	85-89	53%	53%	53%
	90+	42%	47%	48%
Region	Flanders	41%		
	Brussels	37%		
	Wallonia	45%		
Reimbursement entitlement	Preferential	51%		
	Non-preferential	39%		

Figure 1 – Difference from the national mean of the insured population aged 65+ using 5 or more drugs of >80 DDD per year, by district, 2022

Figure 2 – Standardized percentage of the insured population aged 65+ using 5 or more drugs of >80 DDD per year and coefficient de variations between districts, by age group, 2022
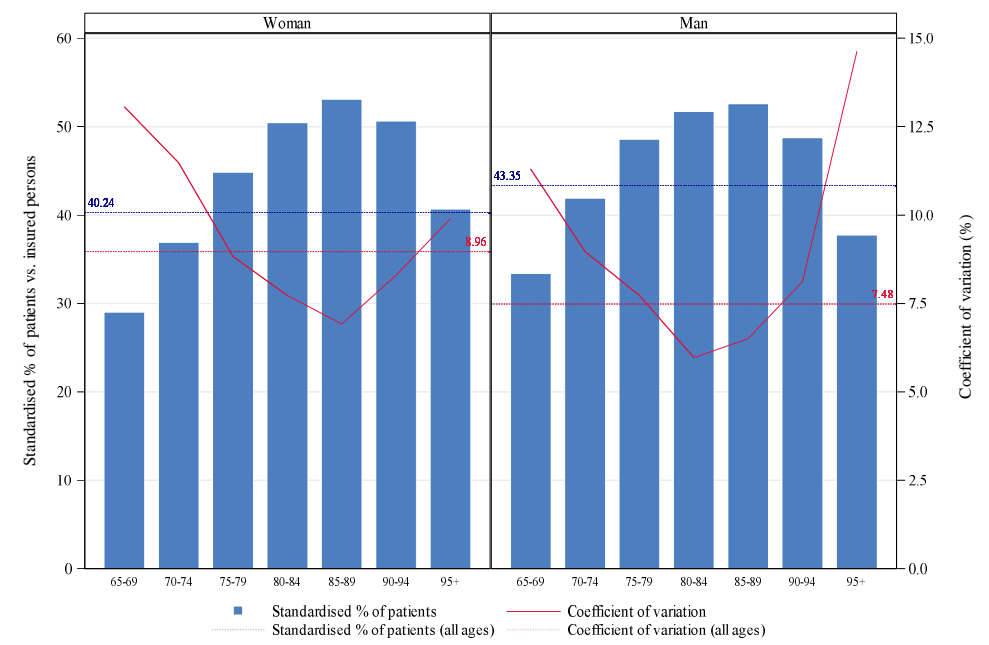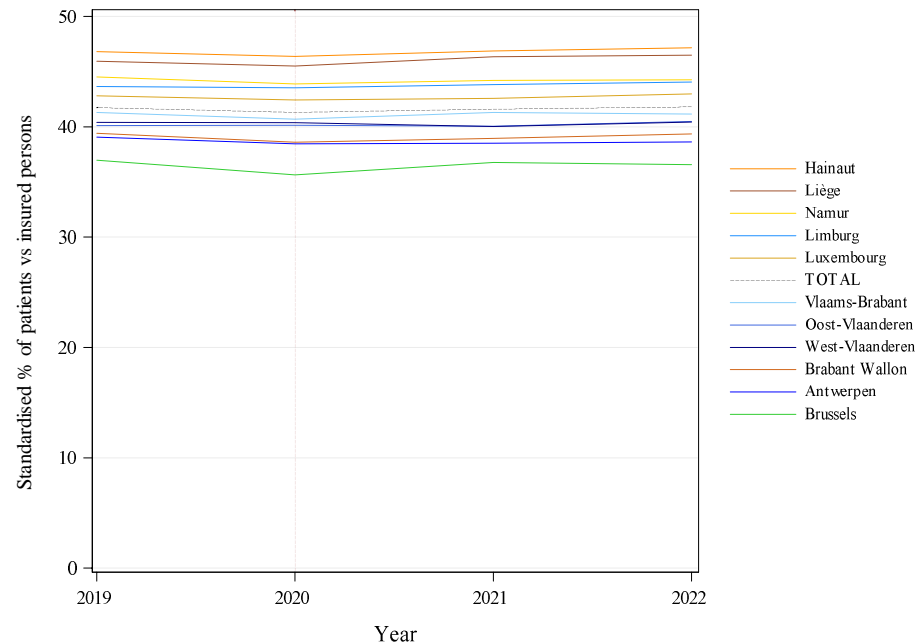
Figure 3 – Evolution of the standardized percentage of the insured population aged 65+ using 5 or more drugs of >80 DDD per year, by province, 2019-2022

1.1.3. Impact of COVID-19 pandemic

No impact of the COVID-19 pandemic was observed on polypharmacy.

Key points

- **The percentage of the insured population aged 65 and over that used in the past year 5 or more different drugs of >80 DDD was 42% in 2022.**
- **The percentage is increasing with age and reaches more than 50% from 80 years old.**
- **The prevalence of polypharmacy is higher among people with a lower educational level.**
- **Important variations among districts in younger age groups show the potential for improvements in those age groups.**
- **The percentage was stable between 2019 and 2022 indicating no impact of the COVID-19 pandemic.**

References

[1] Shah BM, Hajjar ER. Polypharmacy, Adverse Drug Reactions, and Geriatric Syndromes. Clinics in geriatric medicine. 2012;28(2):173-86.

[2] Fulton MM, Riley Allen E. Polypharmacy in the elderly: A literature review. Journal of the American Academy of Nurse Practitioners. 2005;17(4):123-32.

[3] Van der Heyden J., Berete F., Drieskens S. Consommation de médicaments. Bruxelles, Belgique: Sciensano; D/2020/14/440/25. https://www.sciensano.be/sites/default/files/dr_report_2018_fr_final.pdf