

PRESCRIBING OF OPIOID ANALGESICS IN GERMANY: OPPOSITE TRENDS WHEN DIFFERENT QUANTIFICATION MEASURES ARE USED

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- *None*

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- Trend studies on drug utilization may inform regulatory medicines agencies, public health agencies, or federal ministries to **support decision making**
- **Lack of data on recent trends** in prescribing of opioid analgesics in Germany based on individual-level data
- Studies mostly focused on **prescription prevalence**, while only few studies used quantification measures that consider the **amount and potency of opioids** (morphine equivalency)

To assess **trends** in prescribing of opioid analgesics in Germany **using different quantification measures**

Data source

- German Pharmacoepidemiological Research Database (GePaRD) → health claims data covering about ~20% of the German population



Study design and population

- Annual cross-sectional studies for the years 2004–2020
- Included: Persons with continuous insurance (gap ≤ 30 days) or those who were born or died in the respective year

Prescriptions

- Outpatient drug dispensations
- All prescriptions of opioid analgesics (ATC N02A)

Quantification measures

- **Prescription prevalence:** number of persons with ≥ 1 prescription per 100 persons
- Sum of prescribed **oral morphine equivalents in mg per 1,000 person-years**

Oral morphine equivalents

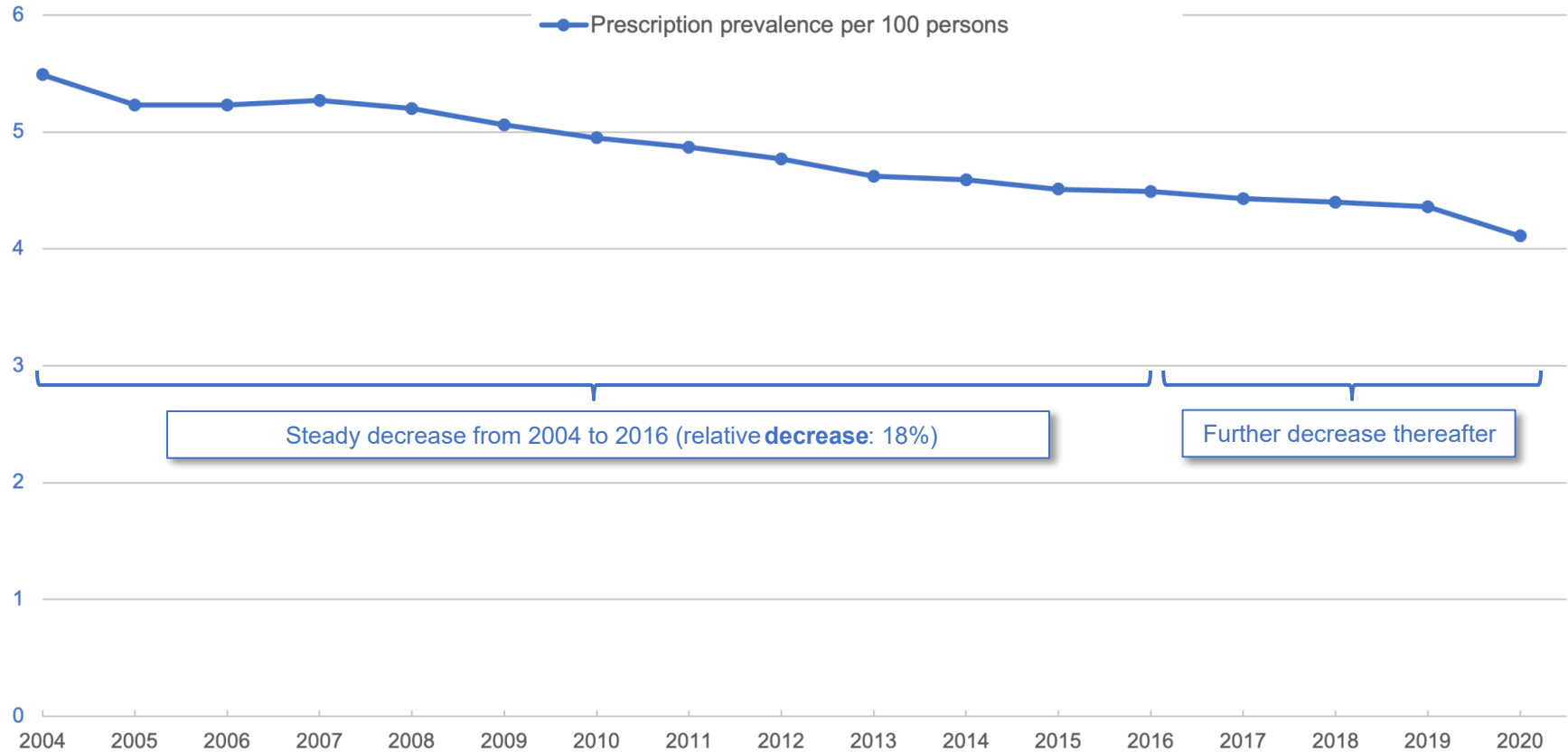
- Amount of equianalgesic oral morphine (in mg)
- Based on the **ATC code** and the **route of application**, the **amount** of main active ingredient **in mg** (in each package) will be multiplied with the **factor**

Substance	ATC code [ATC_BIPS]	Route of application [ROU_APP]	Equianalgesic ratio to morphine*								FAC	LOW	HIG
			Ref [2]	Ref [3]	Ref [4]	Ref [5]	Ref [6]	Ref [7]	Ref [8]	Ref [9]			
Buprenorphine	N02AE01, N07BC01, N07BC21, V90O, V90P	Sublingual	33		80-100	60	60-100		38.8	100	100	33	100
		Transdermal	83.3**	75	75-117	100	75-115		91.7**	95.8**	75	75	117
		Parenteral				100	67-150		75.0	182	100	67	182

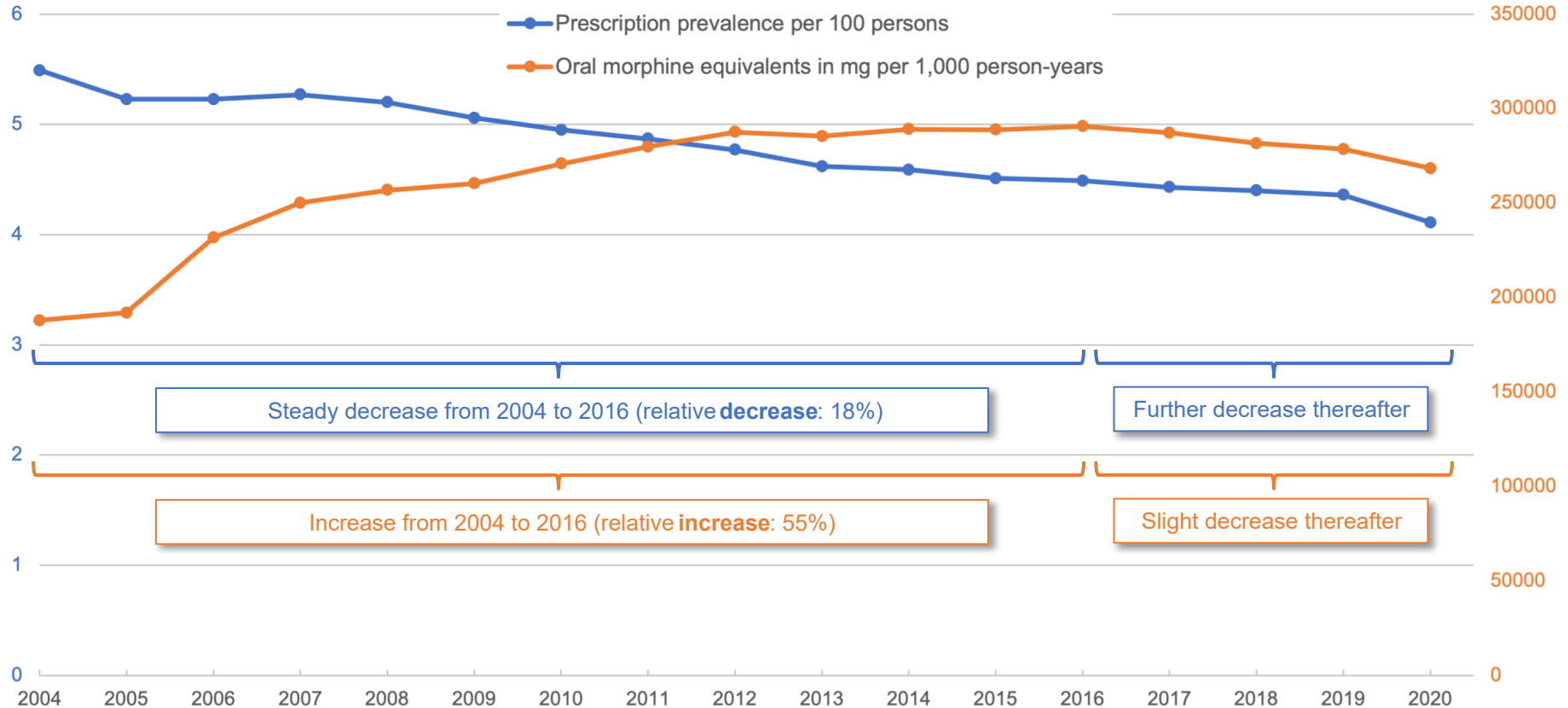
Analyses

- The two measures were calculated overall and stratified by age group (0–19, 20–39, 40–59, 60–79, and ≥ 80 years) and sex
- Directly age- and sex-standardized to the German population (31 December 2020)

Results

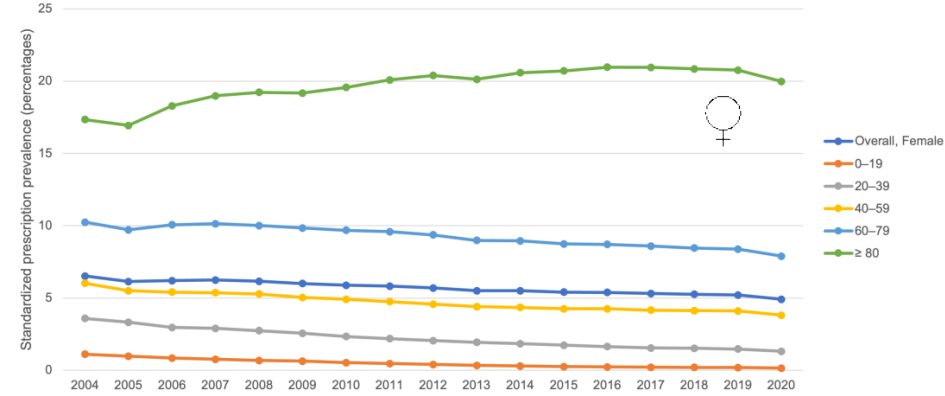


Results

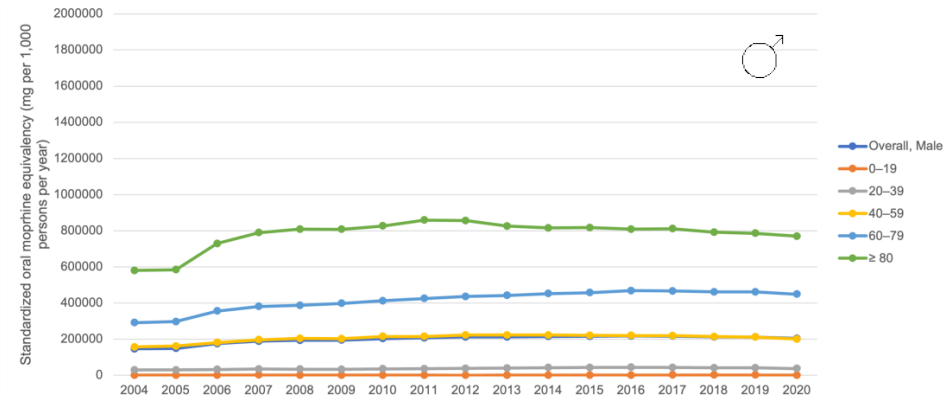
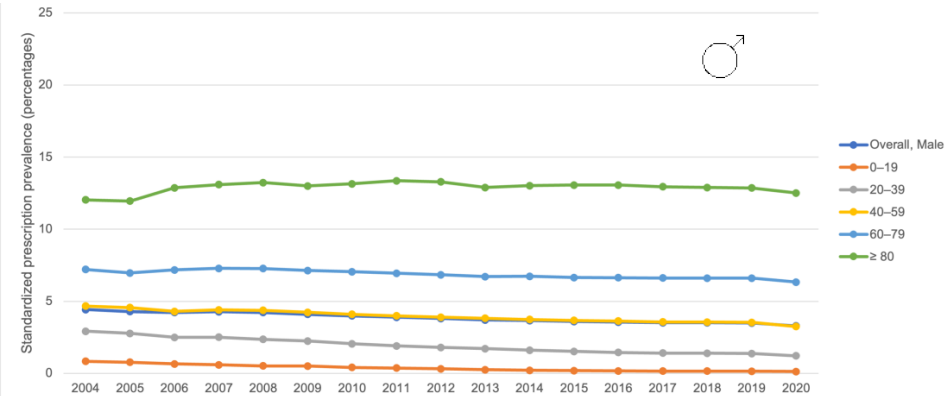
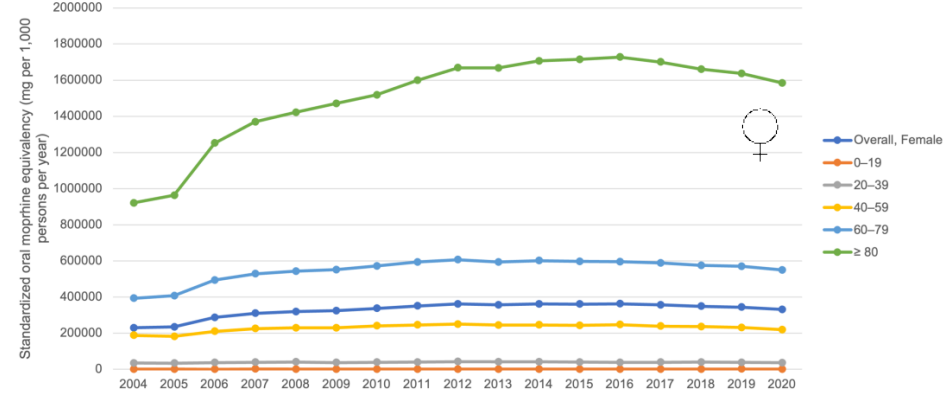


Results

Prescription prevalence



Oral morphine equivalents



Conclusion 1: Trends in Germany

Considering oral morphine equivalents, overall prescribing of opioid analgesics increased between 2004 and 2016 and slightly **decreased** between 2016 and 2020.

Strikingly sharp increases in opioid prescribing among **elderly women** aged ≥ 80 years until 2016 (using both measures) appear to have **declined thereafter**.

➤ Suggests **no alarming trend** in opioid prescribing **in recent years**

Conclusion 2: Open questions for further research

What could be **drivers for the increase** from 2004 to 2016?

- Higher doses of the same opioid?
- Longer duration (long-term use)?
- Switch to opioids with higher potency?
- Additional opioids, e.g., transmucosal fentanyl?
- More cancer patients?
- ...

Conclusion 3: Methodological lessons

Overall trends can be **driven by specific age and sex strata**.

➤ Important to **stratify by age and sex**

Opposite trends for the prescription prevalence as compared to oral morphine equivalents.

➤ **Interpreting trends** can **strongly depend on the quantification measure** being considered; might lead to different regulatory decisions

➤ Consider to **assess different quantification measures** in drug utilization trend studies

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