

# **Producing decision aids from regional variation analyses: the case of polymedication**

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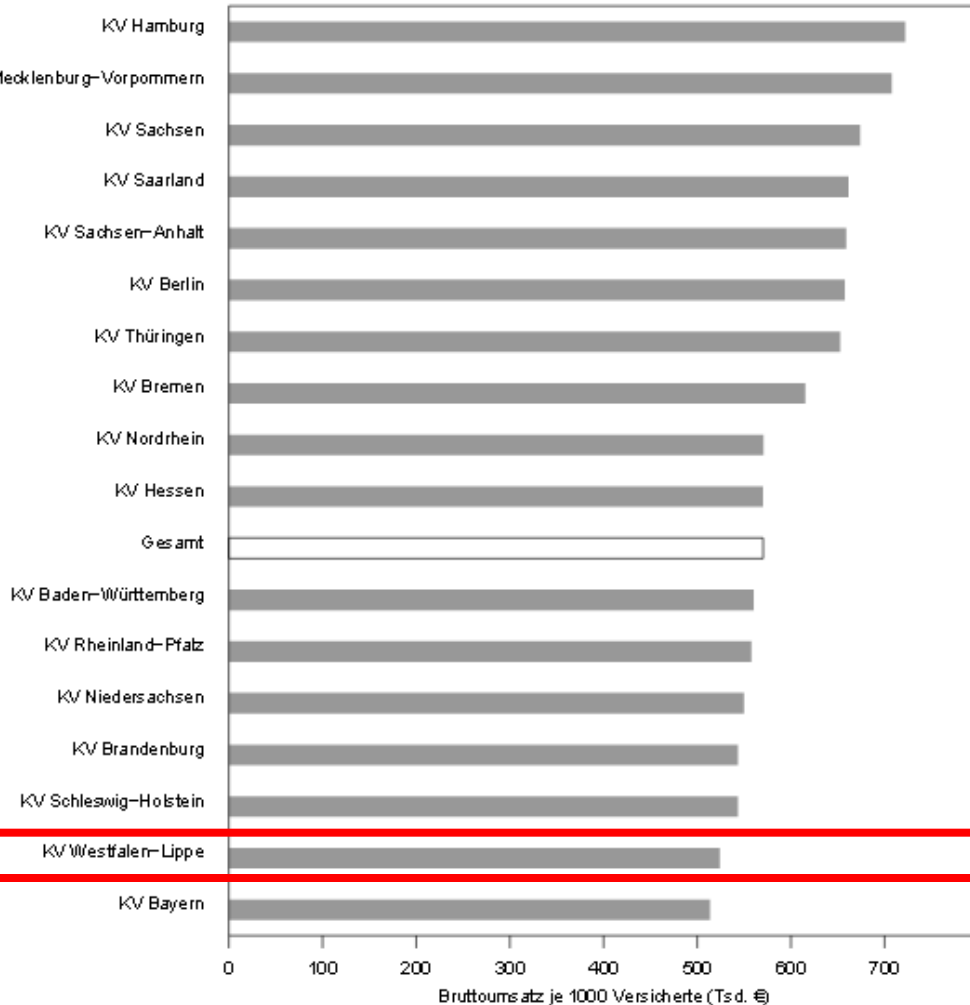
# The region of Westphalia-Lippe (WL)



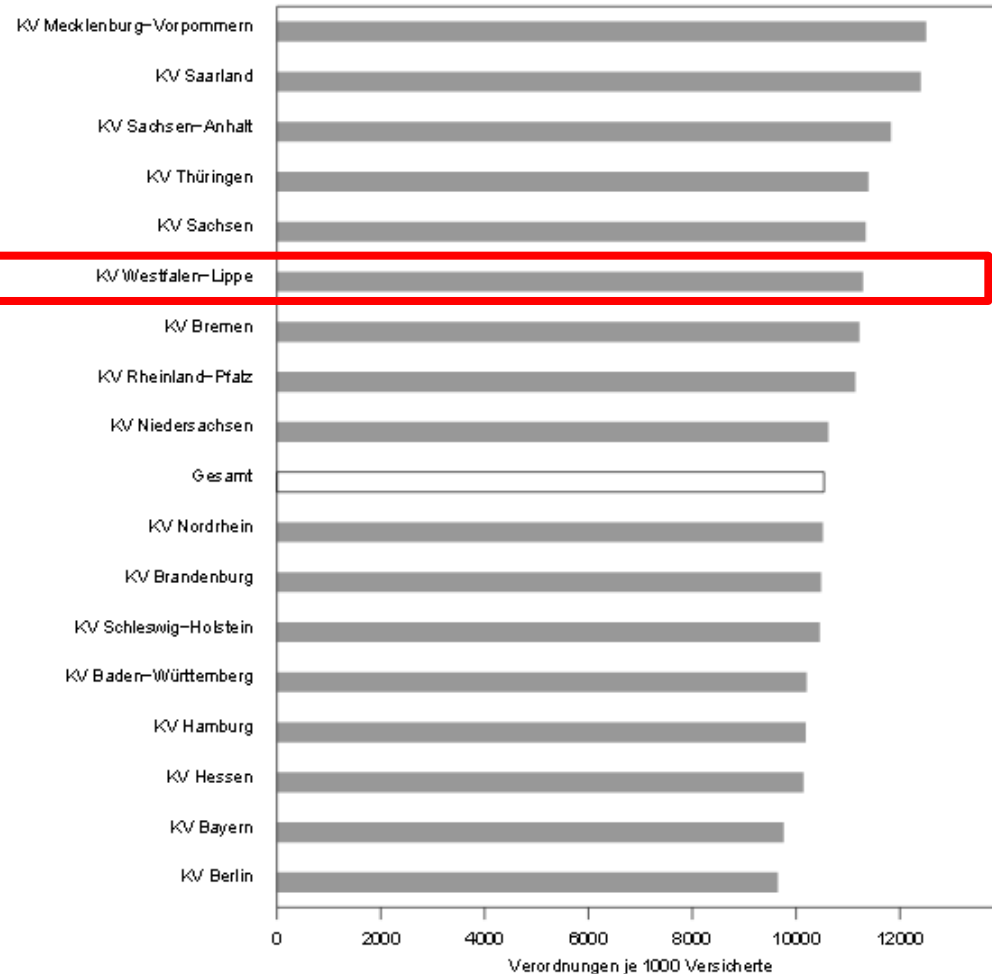
# Drug prescribing in Westphalia-Lippe (WL)

Entnommen aus: [www.gamsi.de](http://www.gamsi.de)

Bruttoumsatz je 1000 Versicherte von Januar bis Dezember 2014



Verordnungen je 1000 Versicherte von Januar bis Dezember 2014





## Definition polymedication

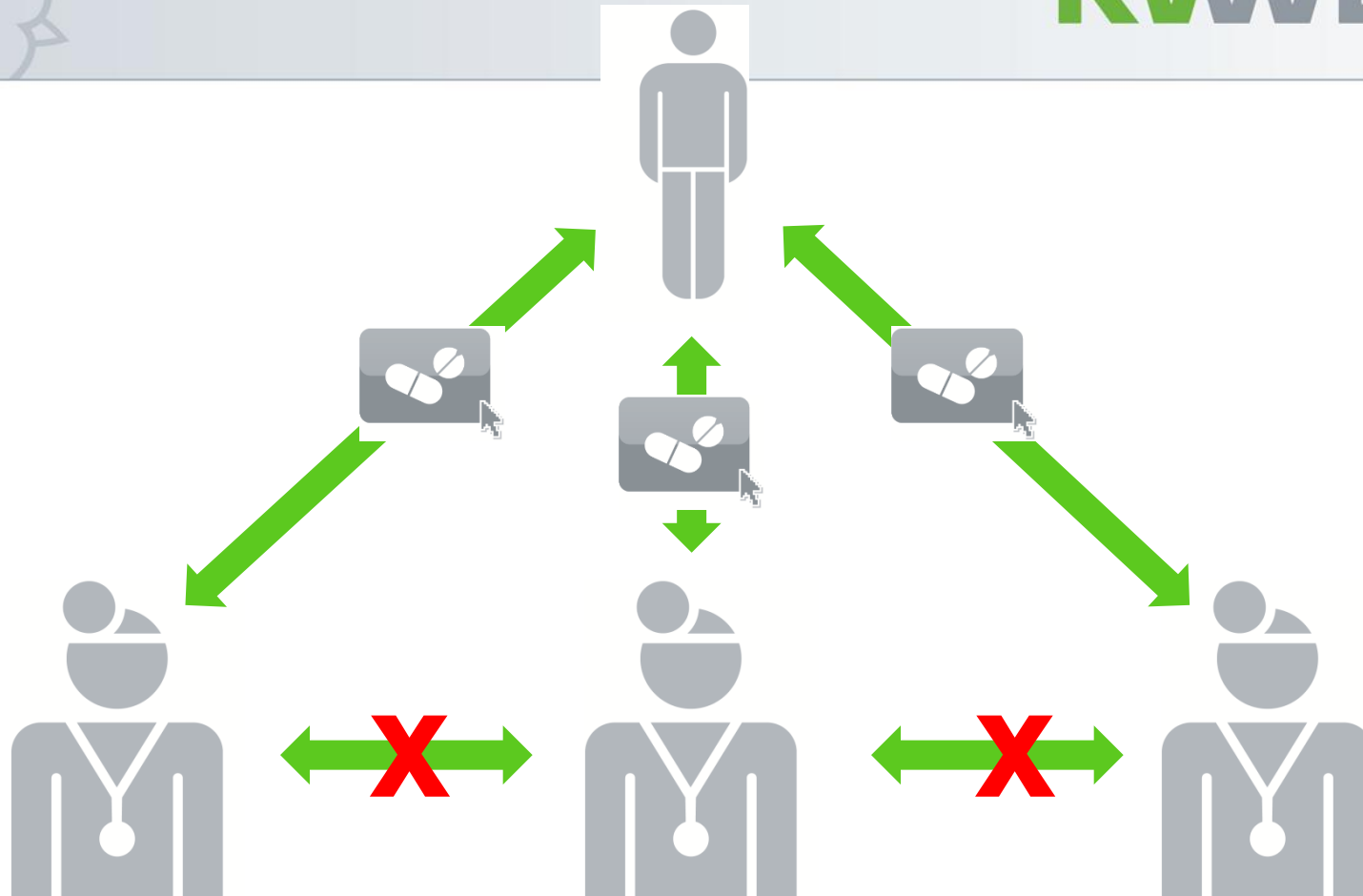
- Patient receiving at least 5 different drugs (ATC-Codes) per year
- For at least 2 subsequent quarters
- Having at least 90 DDD per drug and year
  
- Special ATC-Codes (e.g. V=Varia) are excluded
- No restriction on age



## Drug prescribing in Westphalia-Lippe (WL)

Claims data 2014	WL over all	Patients with polymedication in WL
Amount of prescribed drugs in DDD per patient	591,00 DDD	3.442,84 DDD
Costs for prescribed drugs (€) per patient	535,10 €	2.359,28 €
Number of registered patients with at least 1 prescription	7.314.030	224.563





- Physician is not aware of co-prescribing by other physicians
- No standards for medication list, no data link between different physician



- KVWL conducted a pilot project to provide comprehensive medication list to physician
- Patient has to be enrolled and has to agree by signature (data protection)
- Comprehensive medication list contains details about drug-drug-interaction
- In 2014 ca. 120 Patient enrolled by ca. 50 physicians



- Methods:**
- Intervention: 101 patients enrolled in programm between Aug-Dec 2013
  - Controll: random sample of 500 patient not enrolled in the programm

- Data:**
- Claims data Jan-Jun 2013 (before enrollment)  
compared to Jan-Jun 2014 (after enrollment)

- Figures:**
- Number of prescribed drugs (ATC-Codes),
  - Amount of prescribed durgs (DDD),
  - Cost of prescribed drugs (Euro)

- Statitiscs:**
- Non parametric sign test (comparing differences in medians)
  - SAS 9.3

## Results: Difference in number of prescribed drugs (ATC) before vs. after

Group	Decrease	Increase	No change	Median	Min.	Max.	p-value
Intervention	<b>59,8 %</b>	32,6 %	7,6 %	<b>-1</b>	-13	6	0,004
Controll	43,7 %	39,8 %	16,5 %	<b>0</b>	-17	11	0,193

- *Significant reduction in number of prescribed drugs (Median 1 drug)*
- *No significant change in controll group*

## Results: Difference in amount of prescribed drugs (DDD) before vs. after

Group	Decrease	Increase	No change	Median	Min.	Max.	p-value
Intervention	<b>71,7 %</b>	27,2 %	1,1 %	<b>- 299</b>	- 2059	810	< 0,001
Controll	48,5 %	51,3 %	0 %	<b>11</b>	- 3811	2903	0,743

- *Significant reduction in amount of prescribed drugs (Median 300 DDD)*
- *No significant change in control group*

## Results: Difference in cost of prescribed drugs before vs. after

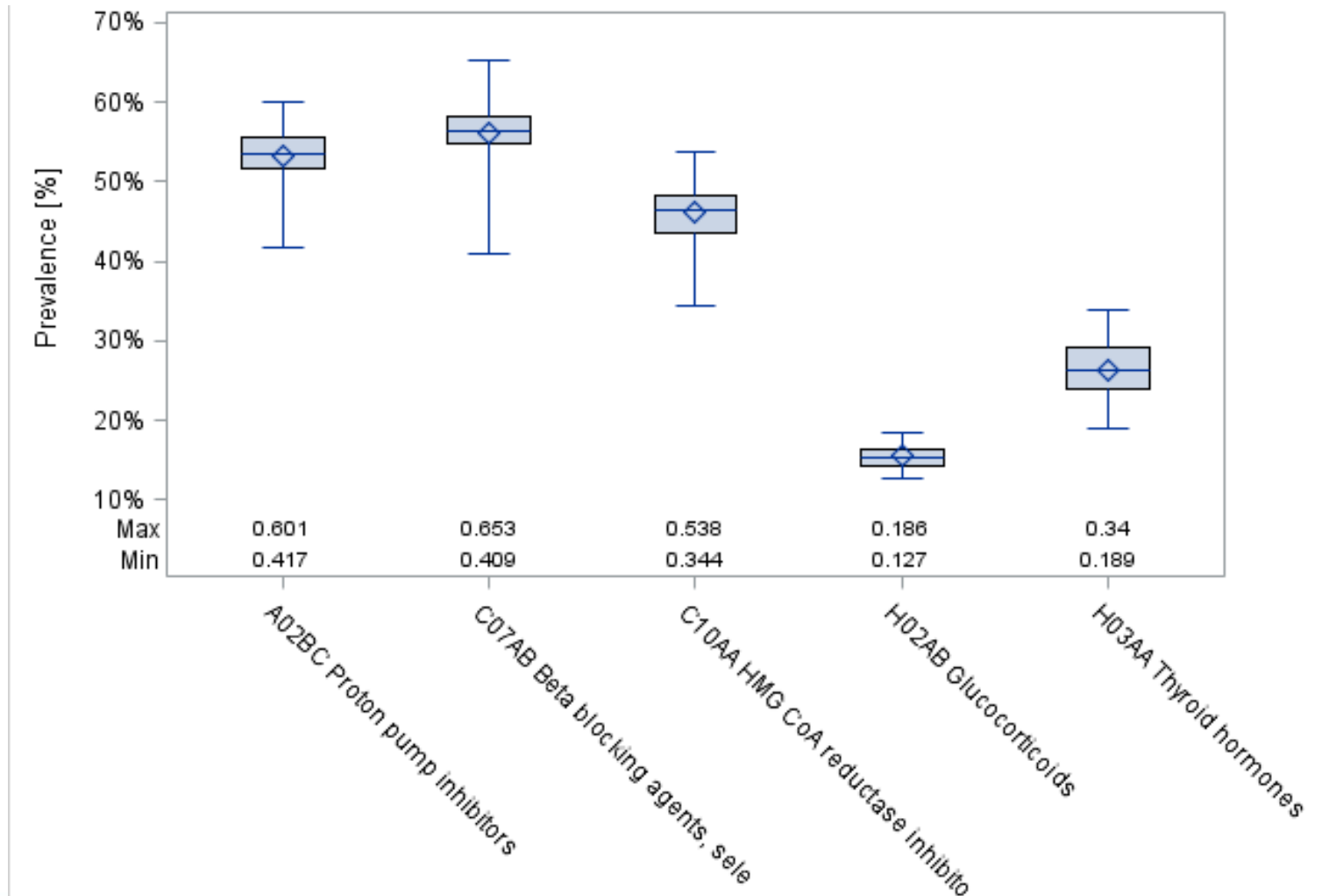
Group	Decrease	Increase	No change	Median	Min.	Max.	p-value
Intervention	<b>66,3 %</b>	33,7 %	0 %	<b>- 88,67 €</b>	- 2794 €	1946 €	0,001
Controll	49,4 %	50,7 %	0 %	<b>3,59 €</b>	- 4951 €	2069 €	0,628

- *Significant reduction in costs of of prescribed drugs (Median 90 Euro)*
- *No significant change in controll group*

## Results: ATC-Codes with decrease in prescribed amount (DDD)

ATC-Code	Decrease in DDD (average, 6 month)	Number of patients
H03AA Thyroid hormones	56,04	31
C08CA Dihydropyridine derivatives	103,86	35
C10AA HMG CoA reductase inhibitors	125,61	38
A02BC Proton pump inhibitors	151,75	61
C03CA Sulfonamides, plain	178,33	45
C07AB Beta blocking agents, selective	182,58	63
H02AB Glucocorticoids	234,44	21

## Results: Variation of prescribing rate for different ATC-Codes by region



## Next steps:

- Evaluation of pilot project for longer term (1 year before/after intervention)
- Extend the pilot project to other regions
- Aim: >1000 enrolled patients by Dec 2015
- Integrate more specific details into standard reports (medication list) for physician for further decrease of unnecessary or potentially harmful prescription
- Avoid top down list (e.g. PRISCUS), use data for bottom up approach

## Conclusions:

- Pilot project demonstrated feasibility of approach
- Findings of regional variation in prescribing data are useful in discussion with physicians (bottom up)
- Standardization of data for benchmarks is sophisticated
- Not all details given by the (claims) data are useful to improve health care
- Basic infrastructure (network of physicians, reimbursement of extra service) is needed for sustainable, positive effect





**Vielen Dank für Ihre  
Aufmerksamkeit!**

