

Analysis of regional differences in distances between practices

Results from the DMP bronchial asthma in North Rhine, Germany

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Background

In Germany (North Rhine Region) in 2006 a disease management program (DMP) for bronchial asthma has been started, focusing on

- ✓ definition of quality goals to be achieved
- ✓ standardized documentation
- ✓ feedback reports for the treating physicians

Patient education and **cooperation of physicians** are important parts of DMP implementation.

There are regional differences regarding the offer of patient education and accessibility of specialist care.

“Motivating providers to coordinate care and achieving saving from reductions in overuse will require new policies and new ways of thinking about chronic illness and how to organize and finance health care.”

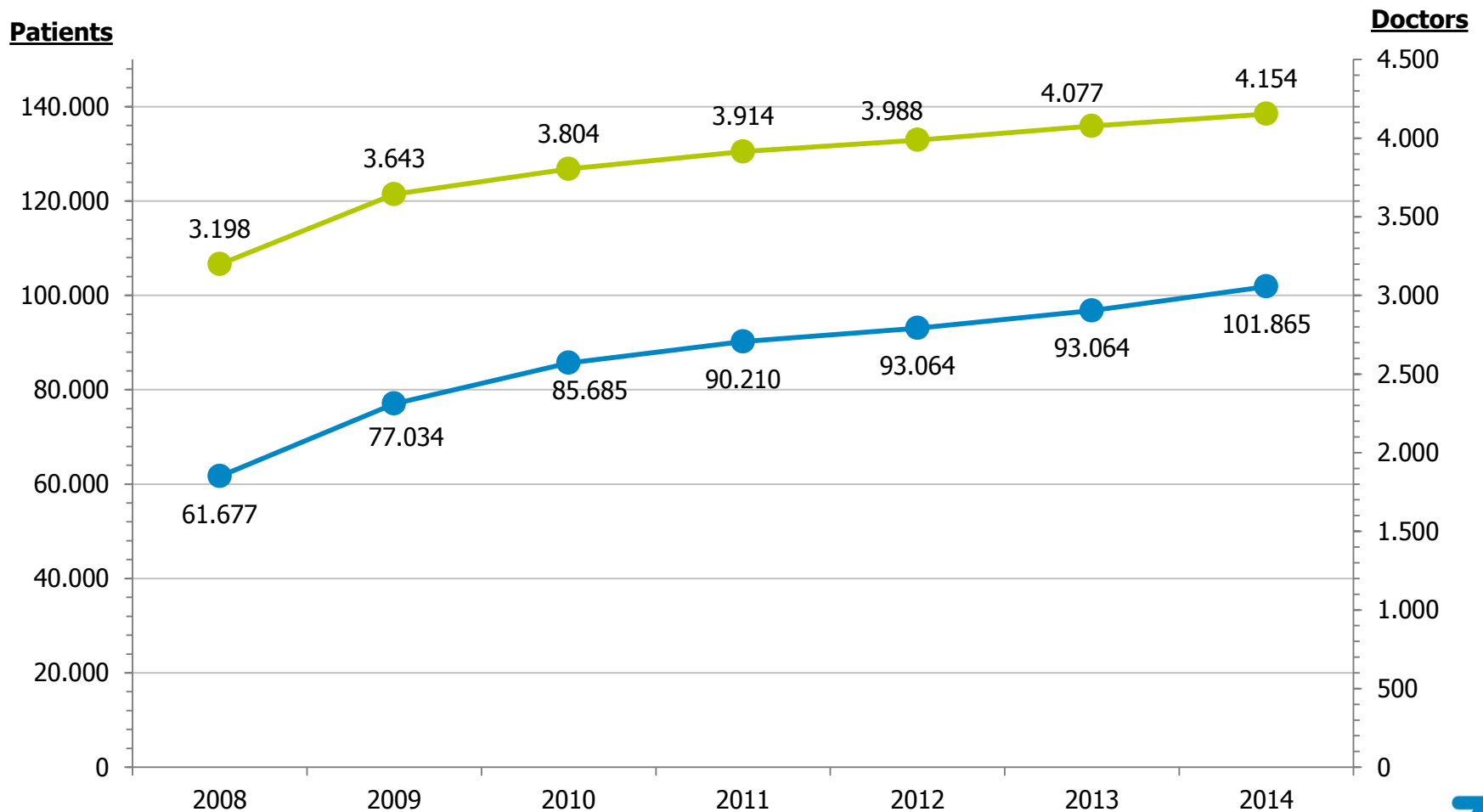
Wennberg 2010, p.209

Number of DMP participants in Germany in 2014

Indication	DMP participants
Breast Cancer	116.646
Bronchial asthma	853.727
COPD	689.628
Diabetes mellitus Type 1	172.775
Diabetes mellitus Type 2	3.969.019
Coronary Heart Disease (CHD)	1.764.396
Total	7.566.191
Participating patients	6.511.158

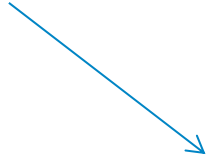
Data from German Federal Insurance Office 2015, 31.12.2014

Participants of the DMP bronchial asthma in the North Rhine region



Germany

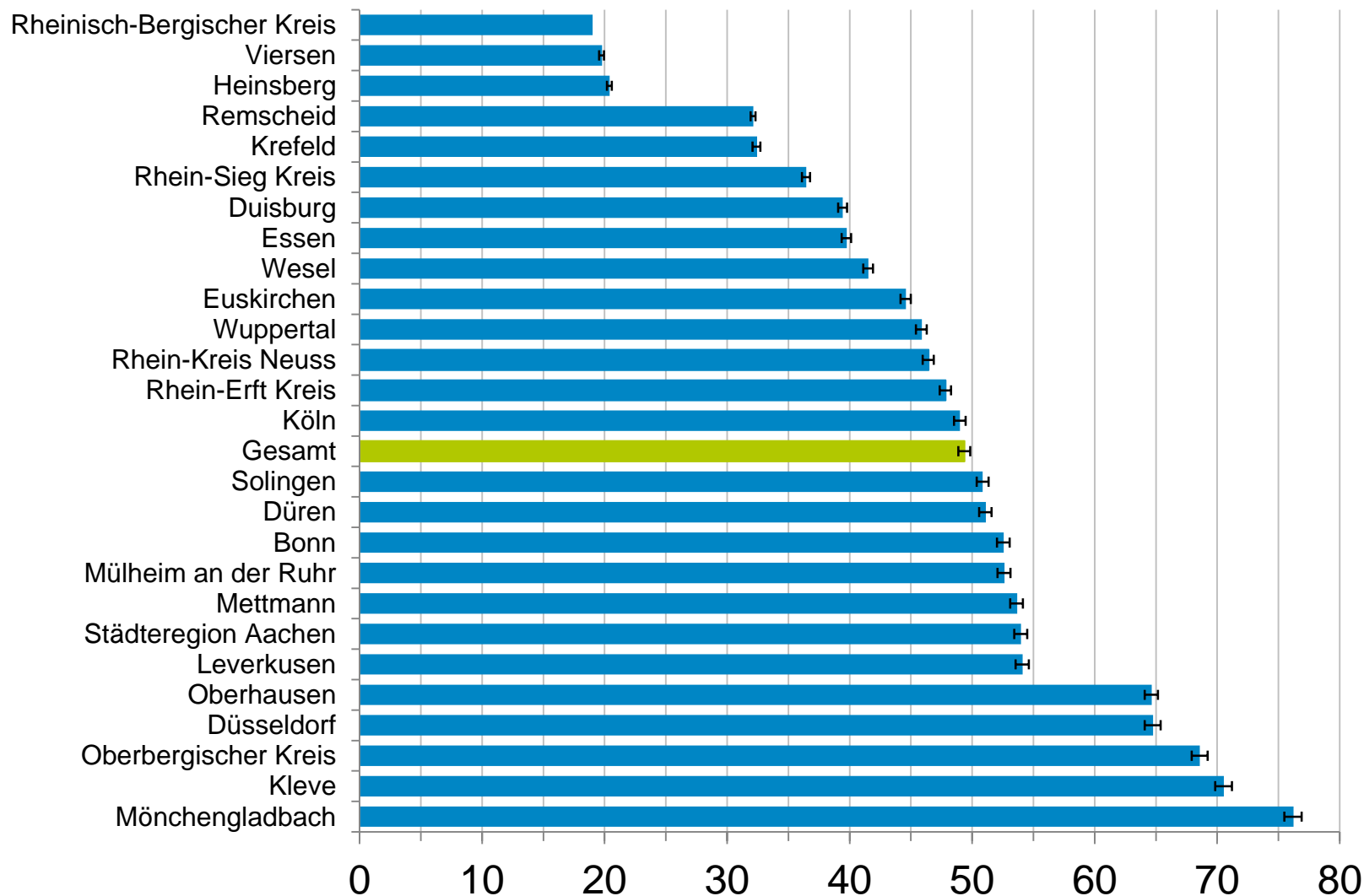
North Rhine



North Rhine



Participation in asthma patient education per region (adult asthma patients)



Objectives

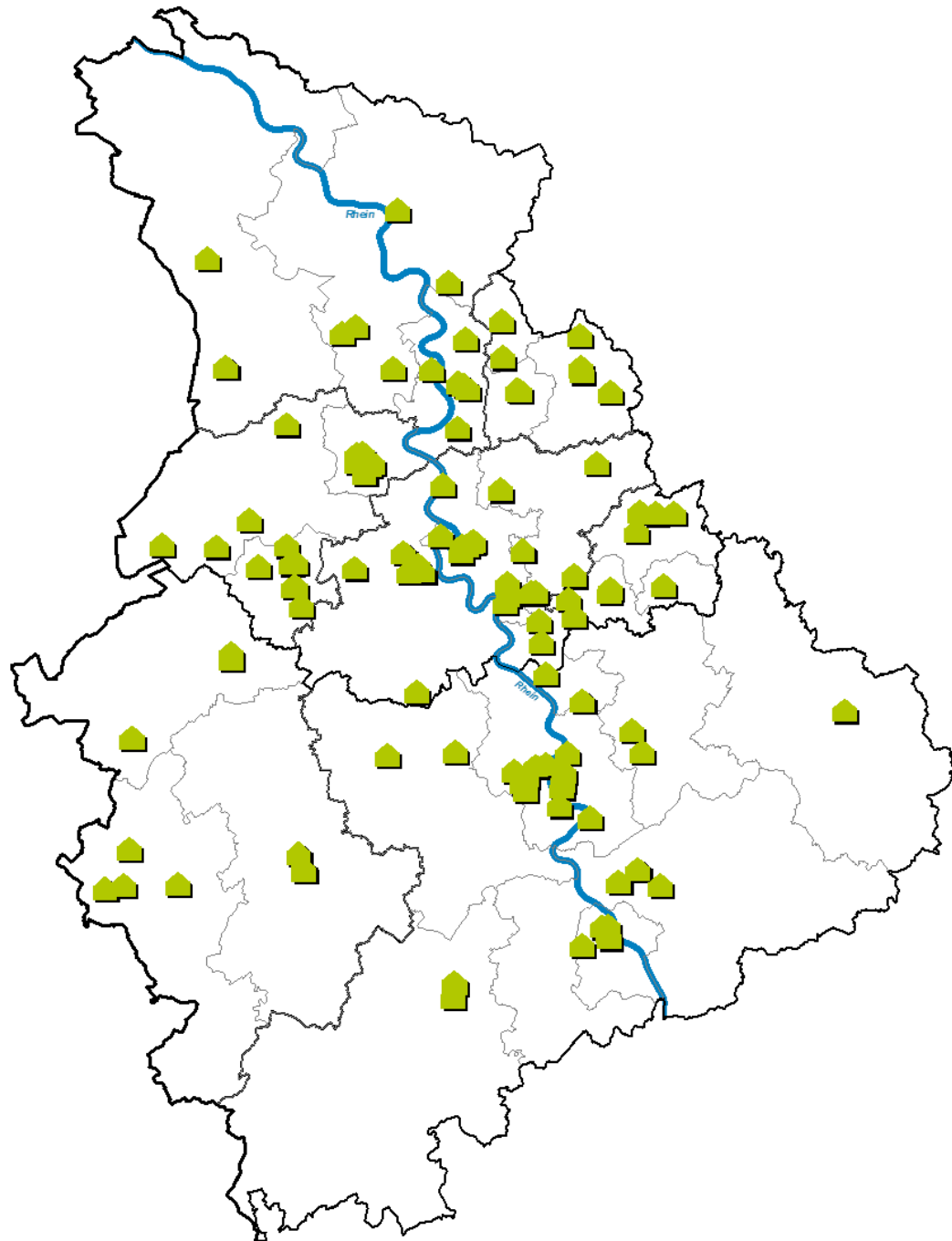
The main objective was to examine whether the **average time** to the next three partaking pneumologist practices influence either the **chance of a referral** from a general practitioner to a specialist or the **participation in structured patient education** of the DMP bronchial asthma participants. Specialists conduct patient education campaigns more often than GP's.



„For patients with chronic illness, geography matters .“

Wennberg 2010, p.56

Distribution of participating pulmonologists in the North Rhine region



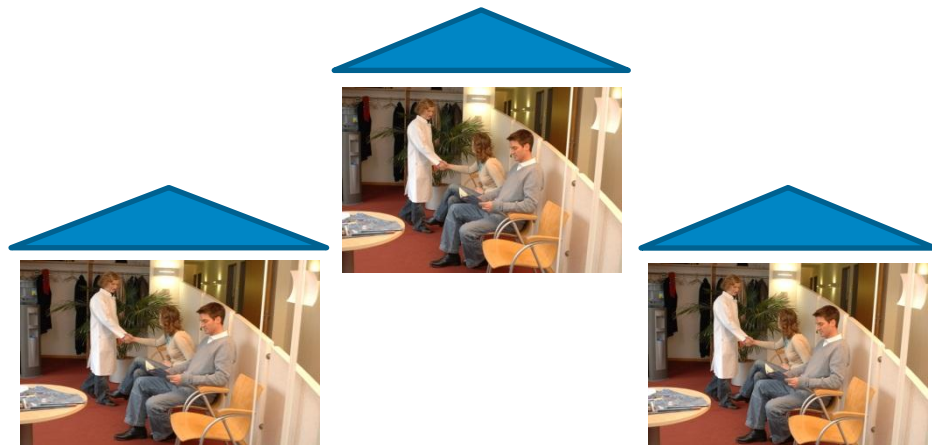
Methods



We used standardized medical records from general practitioner (GP) practices in the ambulatory setting in 2013 (n=2.633). For each GP practice we calculated the **average time** to the next three practices with at least one pneumologist. Participating GP practices were divided into **quartiles** according to the trip time to reach the next three specialist practices.

We conducted univariate and multivariate analysis. Univariate analyses are based on 72.695 adult DMP participants. Multivariate analyses partly focus on adult asthma patients with an invitation to take part in a patient education course (n=25.636). Odds ratios and 95%-confidence intervals were calculated.

Time/ Distance to next three pneumologists



Results



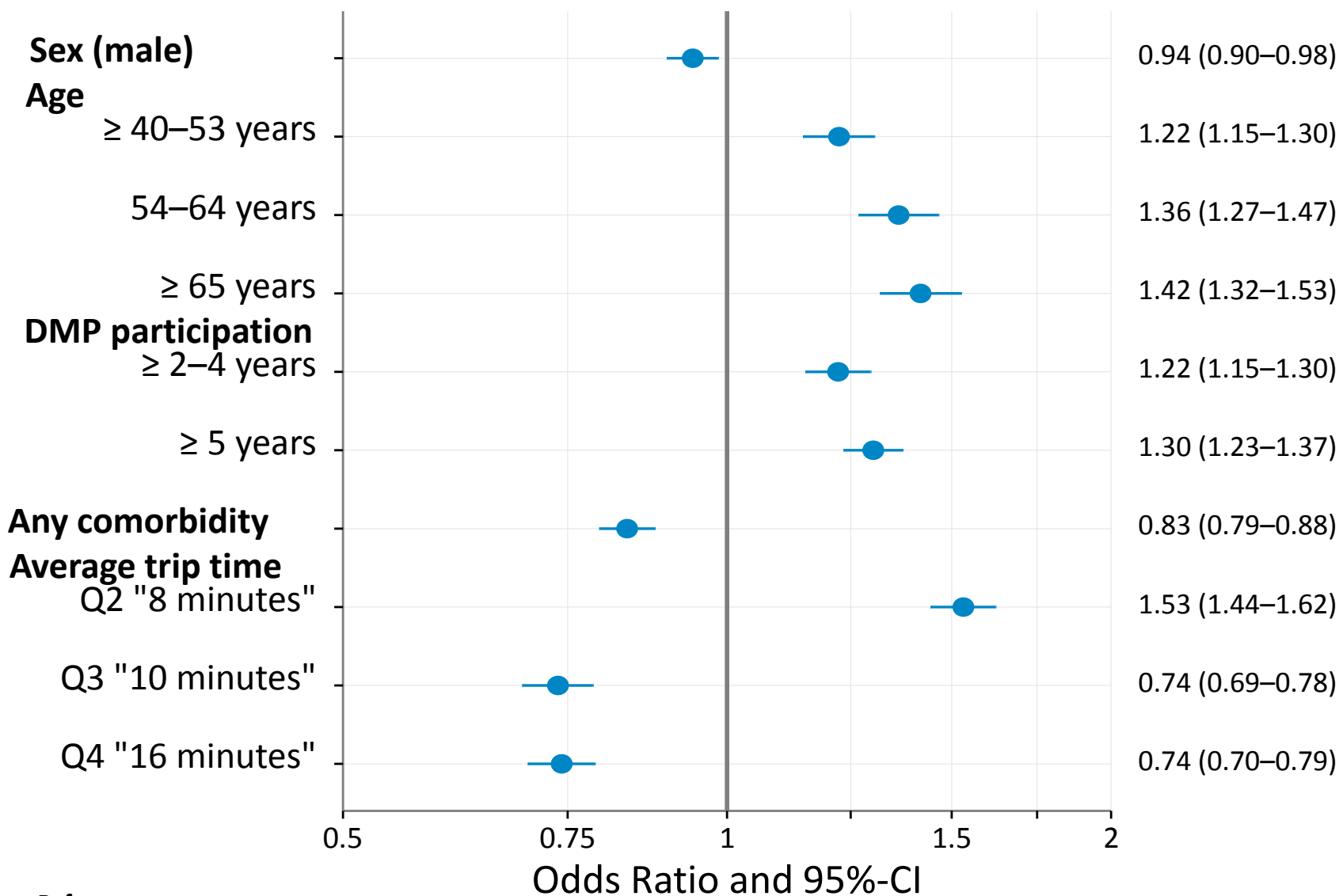
10.149 (39.6 %) adult DMP participants took part in patient education programs after an invitation. 27.578 adult patients were at least once referred to a specialist during DMP participation (40.4 %).

Multivariate analyses demonstrate, that the logistic model after adjusting for sex, age, period of participation and comorbidities show for the average trip time to the next three pneumologists an negative significant association to the participation in asthma education programs (up to OR 0.73; 95%-CI 0.68-0.77). The same effect applies to the referral of asthma patients to a specialist (up to OR 0.83; 95%-CI 0.77-0.87).

„...and it builds the case that illness and patient preference do not explain the variation we see in supply-sensitive care“

Wennberg 2010, p.142

Participation in asthma education programs



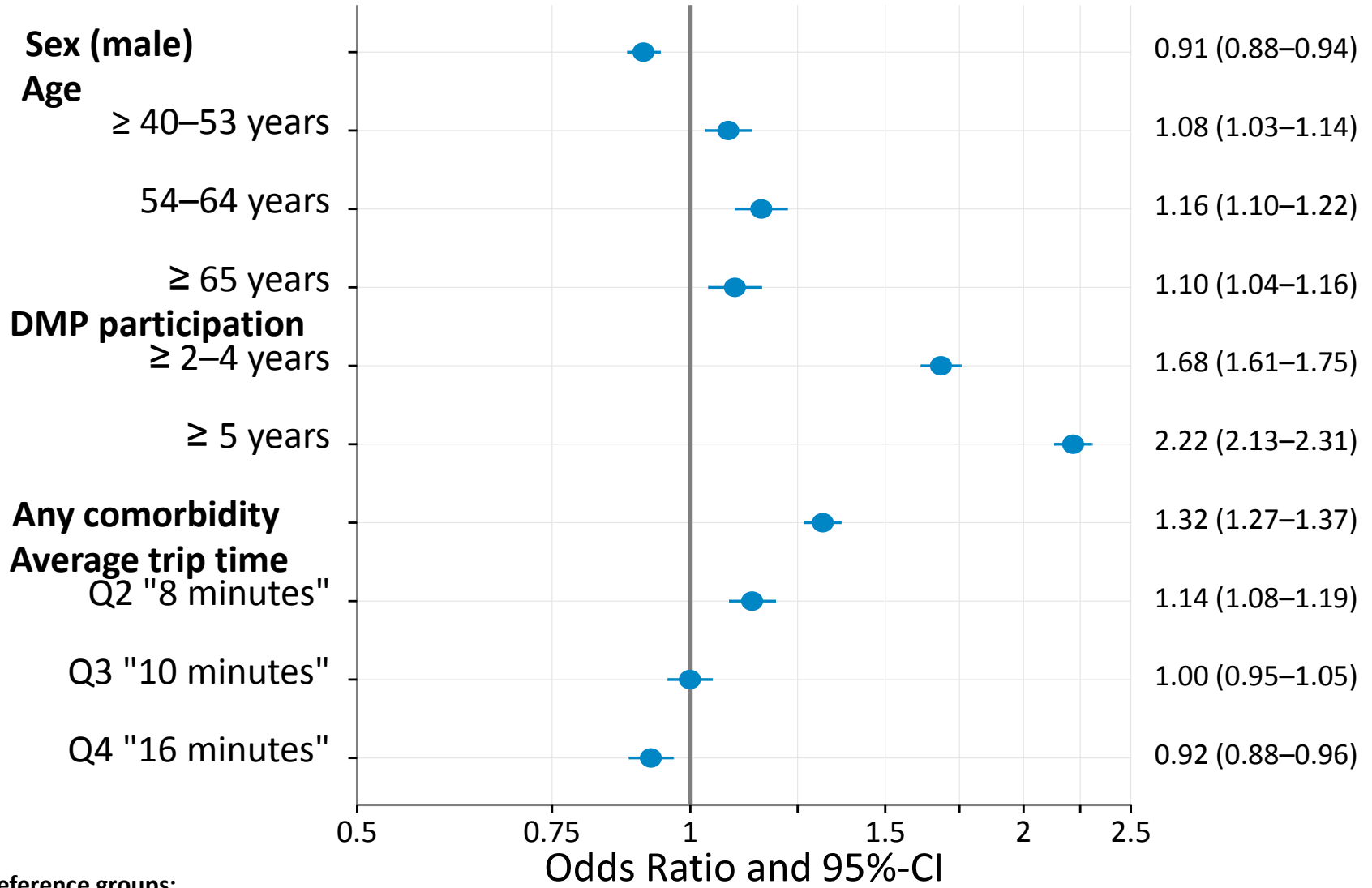
Reference groups:

sex (female), age (18-39 years), DMP participation (<2 years), Average trip time to a specialist (5 minutes)

Nagelkerkes r² 0.038



Referral to a specialist



Reference groups:
 sex (female), age (18-39 years), DMP participation (<2 years), Average trip time to a specialist (5 minutes)
 Nagelkerkes r^2 0.052



Discussion

- The results show that under control of sex, age, interval of DMP participation and comorbidity the trip time to the specialist practice play a role for the partaking of patient education courses as well as for cooperation between the physicians indicated by a referral to a specialist.
- Patients in regions with a low doctor density of specialists have apparently a smaller chance to participate in asthma education programs or to get a referral from a GP.
- Maybe a higher supply of patient education courses or the promotion of the mobility of the patients leads to higher participation rates.
- Moreover sex, age, comorbidity and the period of DMP participation also influence the chance for the selected outcomes. Further analysis is required to draw conclusions from these findings.
- The fact, that patients do not take part in a patient education might be connected to unknown factors like regional social disparities, which are not part of DMP documentation.





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Thank you for your attention!

Literature:

Wennberg JE 2010 "Tracking emdicine – A researcher's quest to understand health care";
Oxford University Press, Oxford, New York

