

Influence of written action plans and patient education on future hospital admissions – Results from the disease management program (DMP) asthma in the North Rhine region in Germany

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Background

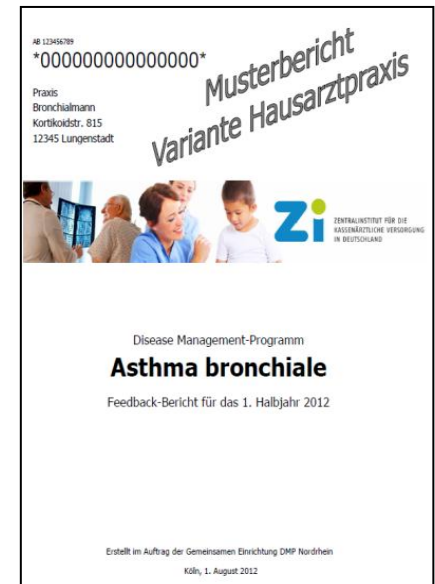
Disease Management Program (DMP) bronchial asthma

One of six DMP's in Germany

- ✓ **bronchial asthma**
- ✓ chronic obstructive pulmonary disease (COPD)
- ✓ coronary heart disease (CHC)
- ✓ type I diabetes mellitus
- ✓ type II diabetes mellitus
- ✓ breast cancer.

The DMP bronchial asthma was nationally established in 2006.

The “Central Research Institute of Ambulatory Health Care” supports the participating physicians in the North Rhine region and provides feedback reports, that include benchmark analysis.

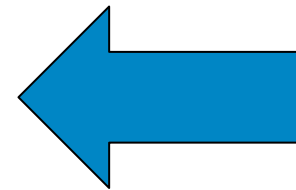


A little digression: quality objectives within the DMP

DMPs focus on continuous care, define sets of quality indicators, include individualized physicians' feedback and continuous evaluation of outcomes.

Six quality objectives for the DMP bronchial asthma:

- ✓ **avoiding emergency visits**
- ✓ **providing a written action plan**
- ✓ **partaking in patient education programs**
- ✓ control of inhalation techniques
- ✓ achieving good asthma control
- ✓ prescription of inhaled corticosteroids (ICS) as controller medication





Research question

An important element of a DMP is the transfer of skills to the asthma patients, so that they are able to cope with the disease as good as possible (patient empowerment).

- **Patient education programs** are an essential part of the DMP bronchial asthma.
- Participating doctors are advised to distribute **written action plans** to their patients so that they can deal with acute exacerbations of the disease.

Do patient education programs or written action plans reduce the risk of future emergency department (ED) admissions?

Methods

In the context of a longitudinal study a logistic regression analysis was used to examine the impact of several predictors (monitored from 2/2008-2/2013) to forecast ED visits conferring to an asthma attack for **183.916 asthma patients** between the second half of the year 2013 and the second half of 2015.



Univariate results (1)

- 42.518 DMP participants took part in a patient education (23.1 %) and 96.489 patients got a written action plan at least once (52.5 %) (2008-2013).
- In the period under consideration (2013-2015) for 1.798 from 183.916 (1 %) asthma patients at least one ED visit was reported.





Univariate results (2)

Predictor	Patient education		Written action plan	
	+	-	+	-
Sex (male)	41,8	41,2	42,3	40,2
SABA*	88,7	56,6	86,0	39,7
ICS*	85,6	53,2	81,5	37,7
LABA*	65,8	42,5	62,4	31,8
OCS*	11,3	6,0	9,6	4,7
Asthma symptoms (more than 2x week)*	15,9	15,3	14,8	16,2

*at least once reported 2/2013 – 2/2015

Patients who either attended a patient education or own a written action plan get far more asthma medications.



Univariate results (3)

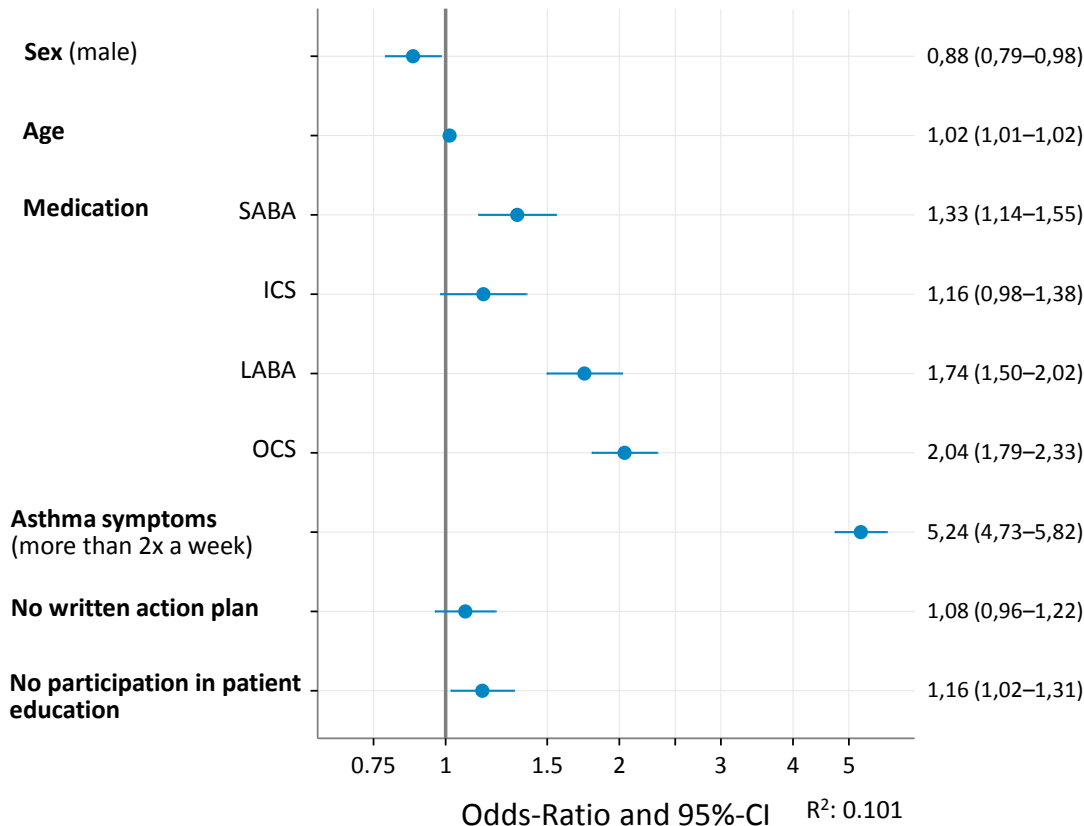
Predictor	ED visits	
	—	+
Sex (male)	41,4	35,4
SABA*	63,9	77,9
ICS*	60,5	77,3
LABA*	47,6	69,0
OCS*	7,1	19,1
Asthma symptoms (more than 2x week)*	15,1	52,2
Patient education	39,3	47,6
Written action plan	71,1	76,9

*at least once reported 2/2013 – 2/2015

Patients who either attended a patient education or own a written action plan have more often no ED visits. But other variables show greater differences.



Multivariate results



➤ In the multivariate model besides sex and age mainly factors that indicates a rather severe course of disease (more than 2 x a week asthma symptoms, prescription of oral corticosteroids (OCS)) play a role.

➤ But also the fact, that a patient does not attend a patient education program, increases the chance for an emergency visit.

➤ However, apparently written action plans exert no influence on the chance to avoid hospital admissions in the DMP context.



Conclusion

- Evidently hospital admissions according to uncontrolled asthma are significantly dependent of a more severe course of disease.
- But the participation in patient education programs seems to prevent the patients of hospital admissions as well - independently from concomitant circumstances.
- Therefore patient education courses should be supported and extended in the North Rhine region (only one quarter of all DMP participants take part).

Limitations

- It should be considered that patients, who take part in patient educations, might behave more compliant to advices from their physicians in general.
- Physicians, who advice their patients to take part in a patient education program, might monitor the course of disease more closely in comparison to doctors that do not recommend this help. This also could be the reason that emergency visits are avoided.
- It should be considered that unknown circumstances might also influence the chance to suffer an exacerbation that leads to an ED visit and that not each asthma-related ED visit is avoidable



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Thank you for your attention!

