

# Patient education in asthma: a survey of physicians' knowledge of the principles and implementation of self-management in practice

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## Summary

**Background:** Therapeutic patient education, particularly when including written instructions in self-management, improves outcomes in asthma. The education of patients in self-management requires specific knowledge and skills, which are not generally taught in under- or postgraduate training programmes.

**Purpose:** To investigate physicians' knowledge of the principles and implementation of self-management in asthma care.

**Method:** A 14-item questionnaire was developed, piloted and subsequently sent to 1039 general physicians (general practitioners and internists) and pulmonologists registered as members of the Medical Society of Zurich.

**Results:** 368 (35%) of the physicians returned the questionnaire. 352 (96%) stated that they care for patients with asthma, 312 (87%) provided asthma education, 264 (75%) gave information about the mechanisms of illness, 272 (77%) provided instructions on how to use inhalers although only 212 (60%) checked inhaler technique. 170 (48%) instructed patients in home measurement of peak flow recordings (PEFR). 21% of general

physicians and 52% of pulmonologists provided written action plans outlining what actions to take if PEFr or symptoms deteriorated.

The majority of physicians were aware of positive benefits of patient education and over 80% stated that all asthmatic patients should be offered education. Only 32% felt that they should personally be educating the patients whilst two-thirds expressed a preference for the education to be provided by a specialist centre. 66% of the physicians expressed a desire to undertake further training in effective patient education.

**Conclusion:** Whilst most physicians in this study state to be aware of the benefits of patient education in asthma, only 24% actually provide their patients with asthma self-management plans. With a low response rate, our study is likely to be biased towards those physicians with a greater interest in asthma; hence actual use of self-management plans is likely to be lower than in our sample.

**Key words:** asthma; patient education; self-management; action plan; adherence

## Introduction

In chronic illnesses, like asthma or diabetes mellitus, self-management is enhanced if patients accept and take responsibility for health care [1, 2]. Self-management is defined as "the individual's ability to manage symptoms, treatment, physical and psychosocial consequences and life style changes inherent to living with a chronic condition". Therapeutic patient education, particularly when including written instructions in self-management, improves the outcomes in patients with asthma. The instruction of patients with asthma in

self-management is an effective measure to improve the quality of life and to reduce the rate of exacerbations leading to emergency visits, to reduce hospitalisations and to diminish costs [3]. Using a written personal action plan enables patients to assess the severity of disease and to adapt therapy accordingly. The written personal instruction with an action plan is a central part of self-management education in asthma and has proven positive effects on relevant outcome parameters [2–4]. Evidence is particularly favourable for pa-

The survey was supported by AstraZeneca Switzerland. Claudia Steurer-Stey gives lectures for AstraZeneca, Glaxo Wellcome and Merck Scharp & Dome.

tients with moderate to severe asthma, for patients with recent exacerbations and those admitted to the hospital [5, 6].

It is known that there is a gap between knowledge and practice in asthma management [7]. Physicians are informed about the importance of patient education and guidelines universally recommend self-management of asthma [8, 9] however a minority of patients is offered educational interventions, and often it is not evidence-based self-management education.

It is not known if and how physicians in

Switzerland offer education to patients with asthma and whether there is a difference between general physicians (general practitioners and internists) and pulmonologists. A survey was undertaken in the Canton of Zurich to gather information on what they know about the benefits of self-management education and which elements of asthma specific education they teach the patients. We further collected information considering the training skills physicians need and their interest in courses offering training in patient education self-management skills.

## Methods

A cross sectional study was performed among general physicians and pulmonologists in the Canton of Zurich. The "Medical Society of Zurich" provided a complete physician registry. A purpose designed and pilot tested questionnaire was mailed to 1039 members of the "Medical Society of Zurich" (988 general physicians, 51 pulmonologists) together with a cover letter, explaining the goals of the survey and a stamped return envelope. The replies were anonymous. The questionnaires were mailed in September 2004 and physicians were asked to return the completed forms within four weeks.

For this survey we designed a questionnaire in cooperation with a peer group of experts in asthma care and patient education. In a first step we collected all relevant aspects and in a second step we formulated the questions. The questionnaire was pilot tested by five physicians and adapted according to the feedback from the participants. The final questionnaire contained 14 items (appendix). A first set of questions asked participants about their speciality, whether they care for asthma patients at all and whether they had offered education to at least one of the previous three asthma patients they cared for.

Respondents who answered positively were asked to identify what their current practice included: (1) information about the mechanisms of illness, (2) demonstration of inhalation technique, (3) demonstration of peak flow measurement and monitoring, (4) information about effects and side effects of prescribed drugs, (5) checking inhalation technique, (6) offering a written action plan including explicitly what patients should do if asthma worsened.

A next set of questions concerned the knowledge of the physicians about the effects of educational interventions; comprising (1) reduction of unscheduled consultations, (2) reduction of hospitalisations, (3) reduction of costs and (4) increase in quality of life. Further questions concerned (1) the acceptance that self-management education is useful in asthma, (2) whether all or selected patients should be offered education and (3) who should present the education. We also asked whether physicians are interested in training and continuing medical education in effective patient education.

Data were stored in special software SphinxSurvey 4.0 (Scolari, Sage Publications Software, London).

## Results

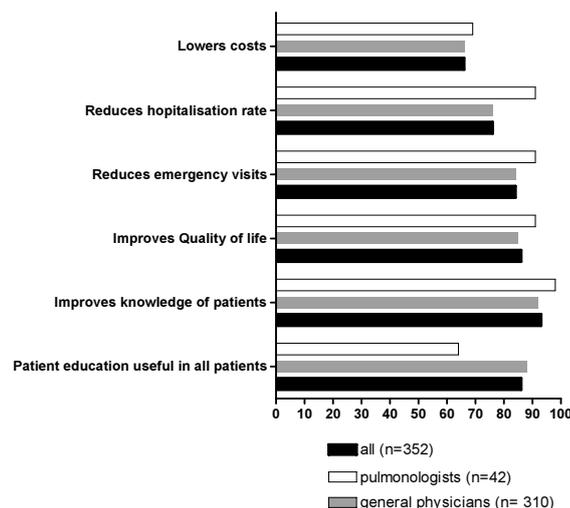
Of the 1039 physicians included in the survey 368 (35%) returned the questionnaire. The return rate for general physicians was 33% (326/988) and

81% (42/51) for pulmonologists. Sixteen general physicians reported that they did not treat asthma patients. For the further analysis 352 physicians were included who reported to treat asthma patients. The majority, 310 (88%) worked in primary care and 42 (12%) as pulmonologists. 285 (81%) physicians answered that they offered patient education to one of the three previous patients who consulted them.

Considering the questions about the effects of adequate patient education 327 (93%) physicians accepted that it improves patients' knowledge regarding the disease, improves quality of life 303 (86%), leads to a reduction of emergency visits (84%) and hospitalisations (76%) due to asthma, and lowers costs (66%). 304 physicians (86%) regarded patient education as useful in all patients, whereas pulmonologists stated patient education to be useful in 63% (figure 1).

264 (75%) informed their patients about the basic mechanisms and manifestations of the illness,

**Figure 1**  
Knowledge about the effects of patient education in asthma (%).



**Table 1**

Different aspects patients are offered in asthma education by 310 general physicians (general practitioners and internists) and 42 pulmonologists.

	All % (n = 352)	General practitioners and internists % (n = 310)	Pulmonologists % (n = 42)
Response rate	35	33	81
Information about illness	75	74	95
Information about therapy and side effects	74	73	98
Demonstrating inhalation technique	77	77	95
Let patients demonstrate inhalation technique	60	58	86
Instruction in Peak Expiratory Flow Rate measurement	48	46	76
Action plan	24	21	52

and 261 (74%) about the effects and side effects of the therapy. Instructions on how to use the inhaler device were given by 272 physicians (77%). 212 (60%) let patients demonstrate the inhalation technique. Instruction in measuring peak expiratory flow (PEFR) was reported by 170 physicians (48%). Only 86 physicians (24%) wrote an action plan and instructed the patient on how to react when symptoms worsen or PEFR decreases (table 1).

Compared to general physicians more pulmonologists taught PEF self-monitoring (76% versus 46%) and the use of a written action plan (52% versus 21%) (table 1).

112 physicians (32%) preferred to offer education by themselves, and 141 (40%) wanted to share education with other health professionals and specialised centres. 236 (66%) wished to visit a course where the skills needed for effective patient education are trained.

## Discussion

Our survey shows that the participating physicians knew about the positive effects of patient education in asthma. However, only 24% instructed their patients properly in action plan based self-management. Pulmonologists taught patients in using PEF monitoring and action plans significantly more frequently than general physicians. However, implementation into routine management of patients can be improved in general and specialised care.

The results also reflect that the physicians participating in this survey realised the need for specific training in skills for self-management. A third of the answering physicians want to educate their patients by themselves and two-thirds welcomes the opportunity to refer at least some of the patients for education to specialised centres.

To our knowledge this is the first survey in Switzerland asking physicians about their knowledge and practice regarding patient education in asthma and their interest in training the needed skills. The survey provides information regarding the current state of asthma patient education in Switzerland from the practitioners' perspective, which is of help for future directions in asthma education. Although questionnaire sampling is a powerful enquiry tool, a major limitation of the present survey is the participation rate of 35%. The result may be biased towards participation of physicians who have a special interest in asthma, and generalising these results beyond the responding participants should be done cautiously. However considering this potential bias knowledge about asthma education and the number of phy-

sicians who offer their patients proper education interventions including personal action plans is likely to be lower than presented.

The evidence base for the recommendation to instruct asthma patients in self-management, including a written action plan, is strong and consistent. Thirty-six trials comparing self-management education with usual care have shown consistent results in favour of education. Self-management is associated with a reduction in hospital admission of up to 40% and a reduction in emergency room visits of 20% [3]. Comparable reductions in unscheduled visits to physicians, sleep time symptoms and days off work or school are reported in these trials and proper patient education has been shown to be cost saving. In Switzerland Tschopp et al. [10] reported that the self-management education saved approximately 5000 CHF per year and patient. Guidelines recommend offering self-management education to all patients with asthma focusing on individual needs [8, 9]. Evidence is particularly favourable for those with moderate to severe asthma, those who have had recent exacerbations and those admitted to the hospital [5, 6]. This may be due to the difficulty of demonstrating benefit in comparatively mild asthma or may reflect the need for a less formal self-management plan in these patients. The debate whether self-management education including written asthma action plans should be offered to all asthma patients or mainly to patients with moderate or severe asthma is still ongoing and should be addressed in further studies [11].

Nevertheless the evidence that self-manage-

ment education is effective is overwhelming and contrasts the fact, of poor implementation. In a group of 785 patients with asthma [12] only 3% had been given written self-management plans and in another population of patients 28% reported to have a written action plan one week after an unscheduled physician visit due to asthma exacerbation [13]. The results of our survey are in line with these reports showing that physicians do not meet the criteria for evidence-based self-management education [3, 14, 15]. The important concept of self-regulation is not sufficiently implemented in daily practice; physicians convey information about asthma and technical skills in the sense of traditional patient education disregarding that the link between knowledge and behaviour is weak [16, 17]. The 24% rate among general physicians and pulmonologists on providing an action plan in our survey is within the range published by other authors in Europe. In larger studies 20% and 28% of patients had an action plan [7, 12, 13]. Even though pulmonologists compared to other physicians show a better performance with half of them availing an action plan there is room for improvement for specialists too.

For daily practice the results indicate a need for specific training in the management of asthma and in skills such as goal setting, problem solving and cognitive-behavioural techniques, which are usually not part of most health care professional training [1, 2, 16, 18, 19]. Chronic illnesses, like asthma, are a rising problem, and medical training has to emphasise the need for this specific training [20]. The strategies of management of long-term illnesses should be integrated in the under- and postgraduate curriculum. Physicians wish to be trained in the skills needed and the majority would wish to have the opportunity to refer patients to a specialised centre.

An important question is why self-management education is not more widely implemented even though the knowledge about the beneficial effects seems broadly disseminated. One barrier for implementing self-management education in daily practice might be inadequate financial com-

ensation for educational activities. If reimbursement is unsatisfactory, physicians will not be motivated to spend time with self-management education.

In Switzerland patient education is not reimbursed like other "obligatory benefits" and physicians are mainly refunded for a consultation on a time base. Patient education is still not understood as what it has to be, an integral part of therapy. In England where patient education is also not reimbursed lack of time and negative financial implications are discussed as important reasons for the low implementation of patient education. Therefore negotiations with health insurance companies and politicians have to be initiated about adequate reimbursement of therapeutic patient education. Primary care physicians should be motivated to incorporate collaborative care and self-management elements into their practice, to support asthma patients to identify problems from their own point of view, to learn problem-solving skills, for example using simple action plans to find solutions. For the future we have to create favourable conditions for such transformations at teaching hospitals, schools that train health care professionals, provider organisations and third party payers. Research to investigate the barriers for implementation and to evaluate which approaches and strategies are needed and most successful to overcome the barriers in implementing evidence based patient education into clinical practice is warranted.

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