

# National Asthma Education Prevention Program: Survey of Nurse Practitioners' Knowledge, Attitudes, and Behaviors

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## ABSTRACT

**Introduction:** Much has been written regarding poor physician adherence to the National Asthma Education, Prevention Program (NAEPP) guidelines, but no data are available regarding nurse practitioners (NP) adherence. This descrip-

tive study compared NP adherence to figures reported for medical doctors (MDs) in the 2001 and 2007 analyses by Cabana and colleagues.

**Method:** A national, cross-sectional survey approach was used to assess NP knowledge, attitudes, and behaviors regarding the NAEPP guidelines. The survey was adapted from Cabana's 48-item questionnaire.

**Results:** NPs provided more prescriptions of inhaled corticosteroids (ICSs) to patients with daily symptoms than did physicians (NPs, 79%; MDs, 54%). Overall, compared with MDs, NPs reported higher adherence on three of the four NAEPP guideline components surveyed, two of which were statistically significant.

**Discussion:** This survey suggests that NPs have greater adherence to prescribing ICSs than do MDs. However, improved adherence still needs to be a goal for all providers because prescription of ICSs is the cornerstone of management of persistent asthma. *J Pediatr Health Care.* (2013) 27, e17-e24.

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## KEY WORDS

Asthma, nurse practitioners, adherence, NAEPP guidelines

Much has been written about physicians' lack of adherence to asthma guidelines, and it has been assumed that data regarding the adherence of nurse practitioners (NPs) to these guidelines would be similar. In the United States, physicians' compliance with National Asthma Education Prevention Plan (NAEPP) guidelines is substandard (National Heart, Lung and Blood Institute [NHLBI], 2007; Navaratnam, Jayawant, Pedersen, & Balkrishnan, 2008). Research has found that at least 45% of patients with asthma receive incomplete or

inappropriate care from their physicians, and according to Gawande (2009), “Getting the steps right is proving brutally hard, even if you know them” (p. 10). Understanding differences in asthma management through direct feedback from NPs may provide insight into how to change the attitudes and practice behaviors of health care providers (HCPs) and ultimately improve the quality of asthma care. A survey approach was used to ask NPs across the United States about their knowledge, attitudes, and behaviors regarding the NAEPP guidelines. The objectives of this descriptive study were to gain an understanding of NPs’ adherence to the asthma guidelines, compare NP and physician data on their guideline utilization, and determine what content/issues NPs would find beneficial in an educational component. The NP survey was adapted with permission from the 2001 and 2007 surveys by Cabana and associates in which physicians’ non-adherence to the guidelines was reported.

## BACKGROUND

The *Expert Panel Report 3 (EPR-3) Summary Report 2007: Guidelines for the Diagnosis and Management of Asthma* was developed as an evidence-based template to guide clinical practice and improve asthma outcomes (NHLBI, 2007). The NAEPP established four components of care to form the basis for treatment: (a) assessing and monitoring asthma severity and control, (b) education for a partnership in care, (c) control of environmental factors and co-morbidities, and (d) medications. Previous research demonstrates that physician utilization of the NAEPP guidelines is less than optimal (Rastogi, Shetty, Neugebauer, & Harijith, 2006). A review of the literature finds no specific mention of research regarding NPs’ use or adherence to the NAEPP guidelines. Whereas 91% of physicians stated being aware of the NAEPP guidelines, only 54% of physicians reported adherence to guideline recommendations for the prescription of inhaled corticosteroids (ICSs) for children with persistent asthma (Cabana, Abu-Isa, Thyne, & Yawn, 2007). Ting (2002) demonstrated four common physician reasons for poor adherence to NAEPP guidelines: (a) not remembering classification parameters of asthma severity, (b) not remembering various brand and exact dosages of inhaled steroids for different asthma severity, (c) not remembering to ask about various triggers of asthma, and (d) not having sufficient time or resources to provide asthma education and an asthma action plan.

Janson and Weiss (2004) surveyed a national random sample of generalist and specialist physician groups ( $N = 512$ ) providing care to patients with asthma and found that every physician surveyed inadequately implemented the NAEPP guidelines. The authors reported significant differences in prescriptive behavior between the two physician groups, with the specialists prescribing ICSs more consistently with the NAEPP

guidelines. Crim (2000) reviewed six studies on asthma management by physicians and found that a lack of consistent, widespread use of the NAEPP guidelines was pervasive in all research settings. Cabana, Rand, Becher, and Rubin (2001) demonstrated that 88% of physicians surveyed were aware of the NAEPP guidelines and 81% had access to a copy of the guidelines. The physicians self-reported that 38% implemented daily peak flow meter (PFM) instruction to patients, 43% screened/counseled patients for smoking, 53% screened/counseled parents of patients for smoking, and 53% prescribed ICSs.

Wisnivesky et al. (2008) surveyed 202 inner-city physicians and found self-reported adherence to the NAEPP guidelines for ICS use was 62%, but only 9% used asthma action plans and 10% referred their patients for allergy testing. Physicians’ familiarity with specific guideline components and a higher level of training were predictors of guideline adherence in this study, suggesting that lack of outcome expectancy and poor physician self-efficacy prevented adherence to the NAEPP guidelines.

## SUBJECTS AND METHODS

This national cross-sectional NP survey used a 50-item questionnaire inquiring about the knowledge, attitudes, and behaviors of NPs regarding the NAEPP guidelines. All questions used a five-point Likert scale, with two questions inquiring about what NPs would find beneficial in an educational component. The questions pertained to the care patients received and the screening/counseling of patients’ parents. Data were gathered by two methods, a survey mailed to NPs located in Virginia in 2009 and distribution at the 2010 National Association of Pediatric Nurse Practitioners (NAPNAP) Conference in Chicago, Illinois. For the mailed survey, a list was purchased from the American Academy of Nurse Practitioners of the available 436 pediatric and family nurse practitioners located in Virginia who are certified through this national organization and a packet was mailed, with a 2-week follow-up reminder. This study had one inclusion criteria: NPs had to be currently providing care to patients with asthma. Therefore, NPs who were not currently in active practice or spent the majority of their time in research, academia, or administration were excluded. NAPNAP inserted the written survey into the registration bags distributed to NPs attending the 2010 conference in Chicago. After completing the survey, NPs deposited it in a collection box at the registration desk. Resulting NP responses were combined from the two survey methods ( $N = 225$ ). The study was approved by the University of Virginia Institutional Review Board.

## RESULTS

The response rate was 25% (109/436) for the mailed approach and 8% (121/1437) for the national

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