The Contributing Role of Health-Care Communication to Health Disparities for Minority Patients With Asthma

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Abstract

Asthma is a common, chronic illness with substantial morbidity, especially for racial and ethnic minorities in the United States. The care of the patient with asthma is complex and depends ideally on excellent communication between patients and health-care providers. Communication is essential for the patient to communicate the severity of his or her illness, as well as for the health-care provider to instruct patients on pharmacologic and nonpharmacologic care. This article describes evidence for poor provider/patient communication as a contributor to health-care disparities for minority patients with asthma. Communication problems stem from issues with patients, health-care providers, and health-care systems. It is likely that asthma disparities can be improved, in part, by improving patient/provider communication. While much is known presently about the problem of patient/provider communication in asthma, there is a need to improve and extend the evidence base on the role of effective communication of asthma care and the links to outcomes for minorities. Additional studies are needed that document the extent to which problems with doctor/patient communication lead to inadequate care and poor outcomes for minorities with asthma, as well as mechanisms by which these disparities occur.

Race-Related Disparities In Asthma Outcomes And Care

Asthma, a chronic disease characterized by airway inflammation, was active in 20 million people in the United States in 2002. It accounts annually for 1.9 million emergency department (ED) visits, 12.7 million office visits, and an economic burden of $5.1 billion. The burden of asthma in the United States, however, is not uniform. Compared to whites, the prevalence of asthma is particularly high in Puerto Ricans, non-Hispanic blacks, and American Indians. Asthma morbidity is strikingly higher in certain ethnic minority subgroups; for example, asthma-related hospitalization and mortality in African Americans is 1.4 to 4.0 times and 1.3 to 5.5 times more likely, respectively, than in whites.

Reasons for these disparities are numerous, and include potential differences in income, education, genetic susceptibility, environmental exposure, and the quality of care. Some studies have suggested that poor outcomes among African Americans with asthma may reflect socioeconomic factors, including financial barriers to adequate care. However, others, have found that differences in socioeconomic status and health insurance coverage between patients only partially explain race differences in health care for asthma. A number of investigations have evaluated the relationship of race to the quality of asthma care received by patients in the United States. Studies suggest that even when minority patients have equal access to health-care services, the quality of health care and resulting health outcomes will often be poorer than that of white patients. For example, two studies of patients with asthma reported that African Americans enrolled in managed care organizations were less likely than whites to use inhaled corticosteroids (ICS), the most commonly prescribed medications to maintain long-term asthma control. Another study, conducted in > 5,000 patients enrolled in 16 managed care organizations across the United States, found significantly more African Americans than whites reported underutilization of controller asthma medications (eg, daily ICS use, 34.9% vs 54.4%, p = 0.001, African
Americans vs whites) and inadequate levels of self-management education (how to avoid triggers, 37.6% vs 53.6%, p = 0.001, and having an action plan for use during an exacerbation, 42.0% vs 53.8%, p = 0.001).

While there is growing evidence showing that the quality of asthma care for minorities is worse than the care received by whites, there is very little known about the reasons for unequal care. Studies of other chronic diseases suggest that both quantitative and qualitative differences in medical care may contribute to variations in outcomes by race. In a report by the Institute of Medicine, "Unequal treatment: confronting racial and ethnic disparities in healthcare," the expert panel concluded that there are many sources of disparities, including health systems, health-care providers, patients, and utilization managers. With regard to health-care providers, the panel stated that there is indirect evidence that bias, stereotyping, prejudice, and clinical uncertainty may contribute to unequal outcomes. While there is some evidence that minority patients may be more likely to refuse certain treatments, patient refusal rates are generally small, and do not fully explain health-care disparities.

**The Contributing Role Of Poor Patient/Provider Communication To Asthma Disparities**

National guidelines for asthma care contained in the 1997 National Heart, Lung, and Blood Institute-sponsored expert panel report, highlight the importance of active partnership between patients and physicians. This partnership is highly relevant for effective communication about asthma symptoms, medications, and appropriate self-management (eg, education to avoid triggers and intensify medication regimens during exacerbations). However, a number of studies have reported that differences in race and ethnicity between patients and their providers can represent important cultural barriers to effective communication and partnerships for care. Patient factors such as language barriers, low health literacy and educational status, and lack of self-efficacy, which may be more prevalent among low-income minorities, may contribute to the risk of poor patient/provider communication in this population. Physician factors that may contribute to impaired communication between minority patients and their providers (often from dissimilar race/ethnicity as their patients) include unintentional racial biases in interpreting patient symptoms and decision making, and poor provider understanding of patients’ ethnic and cultural disease models and expectations from clinical encounters. Despite the fact that the great majority of health-care providers abhor prejudice and make every effort to deliver health care that is fair and equal to all patients, the Institute of Medicine report concluded that the preponderance of evidence suggests that inadvertent bias, stereotyping, prejudice, and clinical uncertainty are likely important contributing factors to health-care disparities. Finally, health-care system factors may also contribute to poor patient/provider communication, for example, by placing overly restrictive time constraints on the health-care encounter or by failing to have culturally and literacy-appropriate educational materials available for use by health-care professionals.

A previous report showed that physician attitudes toward their asthma patients may influence both the quality of communication and the quality of asthma care. Resulting impairments in communication may thus contribute to ineffectual partnerships for care between patients and their providers in managing chronic illnesses, leading to disparities in health outcomes from chronic disease such as asthma. In a study of office visits in primary care, Johnson et al showed that physicians were more verbally dominant and engaged in less patient-centered communication with African-American than white patients. Positive affect was less apparent also for African Americans and their doctors compared with whites and their doctors.

The idea that communication is somehow less adequate uniformly across minority patients is not supported by all available evidence. A study by Clark et al of low-income, urban parents and children found that mothers who prefer to speak Spanish communicated more frequently about asthma, more about home treatments for asthma, and they had higher levels of management of recent asthma attacks. While this single study does not reflect a consistent message from the published literature about minorities, it is a reminder that some ethnic groups may have certain advantages in terms of communication.

In the United States, undertreatment or inappropriate therapy contributes to the excess health burden from asthma. According to national guidelines, assignment of care should be based on assessment of severity of asthma. Previous research has shown that when this estimate is inaccurate, care suffers, and underestimation of severity leads to less
intense, suboptimal care. Assessment of severity is complex, and since it depends on patient-reported symptoms, it requires good provider/patient communication.

To help providers bridge the gap between current knowledge regarding effective asthma therapies and asthma management, the 1997 expert panel report\textsuperscript{22} outlines a general approach for the diagnosis and management of asthma. The resulting guidelines recommend an assessment of disease severity using patient-reported symptoms and objective measures of lung function (e.g., peak flowmeter, spirometry) and to appropriately employ a step-wise approach to asthma care that reserves increasingly intensive therapy for patients with more severe disease (poorer symptom control).\textsuperscript{22}

Objective measures of lung function, however, are infrequently used, leaving clinicians to primarily depend on patient-reported symptoms when making decisions about titrating asthma therapy. However, the severity of breathlessness reported by patients with asthma varies substantially for any given degree of airflow obstruction, suggesting that relying on symptoms alone may lead to inaccurate assessment of disease severity. Indeed, a study\textsuperscript{31}, of 90 urban, predominantly (92\%) minority children with asthma found that providers frequently (60\%) underestimated symptom severity, and that underestimates of disease severity were associated with significantly lower rates of use of medications that are effective for asthma control. In this small study,\textsuperscript{31} minority children were more likely to be misclassified, although differences did not reach the threshold for statistical significance (African-American vs white children: odds ratio, 2.31, \textit{p} = 0.38; Hispanic vs non-Hispanic children: odds ratio, 1.21, \textit{p} = 0.78). In a recent cross-sectional study of 6,236 patients with asthma enrolled in 15 managed care organizations in the United States, Okelo et al\textsuperscript{32} tested the hypotheses that underestimation of asthma severity by physicians is more frequent among blacks than whites; and among black patients, underestimation of asthma severity is associated with poorer quality of asthma care and ratings of physician. The study\textsuperscript{32}, found that physicians more often underestimated the severity of blacks than whites (65\% vs 59\%, \textit{p} = 0.05); and among black patients, this underestimation was associated with poorer quality of asthma care, including being less likely to use ICS on a daily basis (13\% vs 20\%, \textit{p} < 0.05), and less likely to have been instructed by their physician on how to manage flare-ups in their asthma (33\% vs 41\%, \textit{p} < 0.0001). In addition, black patients whose physicians underestimated their asthma severity also gave lower ratings for quality of asthma care (\textit{p} = 0.01) and physician communication (\textit{p} = 0.04). The authors concluded that poor patient/provider communication about asthma severity may be a factor in racial disparities in asthma care.\textsuperscript{32}

If health-care providers are partly responsible for underestimation of asthma severity, it may be that they do not receive, elicit, or understand information about severity as well when caring for a minority patient. Also, race disparities in communication and assessment of severity may in part reflect ethnic differences in how patients describe asthma-related symptoms to their providers. For example, a study\textsuperscript{31} found that African-American adults use primarily upper airway word descriptors ("tight throat"), while whites report lower airway descriptors ("deep breath") when describing breathlessness. Taken together, these observations in children and adults with asthma indicate that assessments of asthma severity may be frequently inaccurate and contribute to poor quality of asthma care, particularly among minority populations.

Literacy and, in particular, health-care literacy are needed for effective communication by patients and health-care providers. Health-care literacy has been defined as follows: "The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."\textsuperscript{33} Clearly, health-care literacy is needed to read information about health, to follow written instructions, to calculate correct doses of medications, and to make decisions about health. Some studies have examined demographic associations with health-care literacy and have measured low literacy in certain ethnic and racial minority groups\textsuperscript{34,35,36,37,38,39,40}, and Spanish speakers.\textsuperscript{41} A number of studies\textsuperscript{42,43,44}, in other chronic diseases have suggested that poor health literacy can contribute to patient misunderstanding of health information, inadequate adherence, and poor health outcomes. To date, there is limited research examining the extent to which health-care literacy is present in minority populations with asthma, nor the extent to which it may contribute to care problems and poor outcomes. In a study by Williams et al\textsuperscript{45}, of 483 patients presenting to an urban ED and asthma clinic, most subjects were African American. In this study group, only 27\% read at the high school level. Asthma knowledge and proper MDI use were directly related to reading levels, suggesting that both self-management skills and knowledge can be affected by low literacy in asthma. Similarly, Paasche-Orlow et al\textsuperscript{46}, found that inadequate health literacy was associated with lower asthma medication knowledge and worse MDI technique among inner-city patients hospitalized for an asthma exacerbation. On a promising note, these investigators\textsuperscript{46,47} also observed
that these low-literacy patients were able to successfully learn and retain information about their asthma discharge regimen and MDI technique after receiving one-on-one, 30-min, guideline-based, written and oral instruction.

Patient health beliefs that are divergent from those of the health-care provider can affect health care through competing therapies, fear of the health-care system, or distrust of prescribed therapies. For example, Apter et al.\textsuperscript{48} found that among low-income minority patients, beliefs about the effectiveness and convenience of their asthma medications, as well as their perception of the quality of their communication with their clinician, were associated with poorer adherence with asthma controller therapy. Patient worries or concerns about using a daily asthma controller medication when they are asymptomatic may lead patients to use less medication than was prescribed. Rieker et al.\textsuperscript{49} found that African-American mothers who expressed more negative health beliefs about the value of asthma controller medications were more likely to be discordant with their child's physician about whether the child was prescribed daily ICS therapy for asthma. However, despite the fact that lay beliefs, culture, and folk wisdom about asthma and treatment can influence patient and family acceptance of asthma therapies, these topics are rarely discussed in a conventional clinical encounter. This absence of discussion may lead to assignment of treatments to patients that they are unwilling or unable to use effectively.

While underprescribing contributes to low rates of ICS use in urban minority populations, findings from a number of studies\textsuperscript{48,50} indicate that patient adherence to daily ICS therapy is poor even when prescribed. Adherence to effective therapies such as ICS is necessary to reduce morbidity and mortality from asthma.\textsuperscript{51} Given the benefits of regular ICS use for patients with persistent asthma symptoms, the clinical implication of nonadherence to ICS therapy is excess morbidity and mortality from asthma in inner-city, predominantly minority populations.\textsuperscript{52,53} A number of studies\textsuperscript{54,55} investigating asthma medication use in inner-city minority populations have found alarming rates of overreliance on symptom-driven management (\textit{ie}, bronchodilators during symptomatic episodes), rather than daily use of controller medications (\textit{eg}, ICS) to treat the underlying disease. In a study\textsuperscript{56} of adults admitted to an inner-city hospital for an asthma exacerbation, for example, 85% reported use of bronchodilators, while only 39% reported long-term ICS use. At another inner-city hospital, patients with a history of asthma-related clinic or ED visits were two to eight times more likely to fill prescriptions for bronchodilators than ICS, with overreliance on bronchodilators especially evident in African Americans compared to whites.\textsuperscript{57} Similarly, Krishnan et al.\textsuperscript{47} found that even after individualized asthma education instruction and the provision of free medications, inner-city patients discharged after an asthma exacerbation were only 50% adherent with prescribed ICS therapy by 3 months.

Studies\textsuperscript{42,43,44,58} suggest that patient/physician communication about adherence is often absent or inadequate, and that the clinical judgment of health-care providers is a poor tool for assessing patient adherence. The frequent failure of health-care providers to evaluate the level of patient adherence with therapy, patient understanding of treatments or regimens, or discuss potential barriers to adherence such as cost of medications, health beliefs, or side effects could unwittingly contribute to poor adherence and increased health disparities.\textsuperscript{50,59}

It has been well recognized that physicians use shortcuts, or heuristics, when faced with uncertainty.\textsuperscript{60,61} Physicians work within a context that is bounded by real-world constraints, including limited time, finite resources, and considerable uncertainty about information that is required to make judgments and recommendations. As pointed out by the Institute of Medicine report on unequal care,\textsuperscript{21} physicians bring expectations about the likelihood of an illness or its severity based on what they already believe and what they can observe about a patient (including race). If physicians are less able to interpret information from minority patients, they may depend more on their prior expectations about disease and disease severity, and make different diagnostic or treatment decisions than they would otherwise, even if faced with similar information. Uncertainty can lead to care for minority patients that is either more or less frequent than otherwise expected, but the fundamental problem is a poor match of care to needs.\textsuperscript{21} Little is known about this phenomenon specifically for asthma.

According to a review by Burgess et al.,\textsuperscript{62} there are fundamental human information processing mechanisms that lead to an inconsistency between a provider's desire to provide equal treatment and the way that clinical decision making is influenced by a patient's race and ethnicity. The authors pointed out that unconscious reactions of providers to minorities may be
inconsistent with their conscious beliefs, that providers may unconsciously behave in ways that lead to confirmation of stereotypes, and that stereotypes may influence the way that providers interpret behaviors and clinical findings. Indeed, there is evidence that some physicians believe blacks are less compliant with treatment, which may lead to less offered care. While there is evidence that physicians use stereotypes when treating patients with asthma, there are not yet studies that have shown that bias and stereotyping actually lead to different care in patients with asthma.

There is evidence that primary care office visits differ with regard to communication when patient/physician race are concordant or discordant. In recent study by Cooper et al, race-concordant visits were found to be about 2-min longer and had higher ratings of patient positive affect, patient satisfaction, and patient ratings of their physicians as participatory. However, these factors were not explained by measures of patient-centered communication, which suggests that other factors (eg, attitudes) may be important. It is not clear whether discordance of patient and physician race/ethnicity plays a significant role in asthma care.

A significant body of research has documented the contributing role of physician communication skills and style to patient satisfaction, adherence, and health-care utilization. For example, communication styles that reflect qualities such as physician empathy have been shown to facilitate communication, while brusqueness, dominance, or the exclusive use of closed-ended questioning can impede communication. In a study that was part of the National Cooperative Inner-City Asthma Study, Wissow and colleagues examined characteristics of patient/provider communication during ED care of children with asthma. In this study of 104 children aged 4 to 9 years and their guardians, the investigators found that physicians tended to dominate the conversations and to infrequently include the child in the discussion. Only 43% were moderately or very satisfied with the extent to which the doctor had asked their opinion about treatment, and only 40% were moderately or very satisfied with the extent to which they had been encouraged to talk about their worries. Physicians whose communication style was more parent/patient centered were rated as more informative, displaying more partnership, and received higher ratings of satisfaction with the “doctor’s job.”

**Reducing Asthma Disparities By Improving Patient/Provider Communication**

The quality of communication between patients and their health-care providers has been shown to be related to satisfaction with care and adherence with therapy. Improved physician/patient communication is likely to increase patient involvement and adherence to recommended therapy, as well as improve quality of care and health outcomes. For example, a study that was designed to enhance provider/patient communication showed a resulting increase in patient satisfaction and participation in care. Other studies have found that directed interventions can improve physician/patient communication, and that improved communication can result in greater patient adherence with therapeutic recommendations.

Recent data from the National Cooperative Inner-City Asthma Study suggest that an asthma counselor in conjunction with an action plan and environmental control measures improved asthma symptom control. Another study has shown that strategies focused on health-care providers, such as chart reminders and other forms of reminder systems, can promote provider adherence with preventive guidelines and prompt discussions about adherence issues with patients. Despite the importance of an effective patient/provider partnership in successfully treating asthma, there are few such studies to date that have evaluated strategies to specifically enhance communication between providers and their urban, predominantly minority patients with asthma. One study, however, examined the effect of cultural competence training on asthma care, which likely results in better communication. This study by Lieu and colleagues surveyed practice sites about several policies to promote better care, including policies that promote cultural competence. Inadequate care was commonplace at these sites (65% of children with persistent asthma were underusing preventative medicine based on parent report), but patients of practices with the highest cultural competence scores were less likely to be underusing preventative medications and had better parent ratings of care.

In addition to patient factors and health-care provider factors, it has been suggested that the health-care system plays an important role in health-care disparities. Such factors are numerous, and most are not specific to patients with asthma, but they indeed represent key factors that can interfere with ideal care for certain disadvantaged groups. For example, there is
a need for staff and educational resources to be available to match the language and dialect of the patients in order for communication to be ideal. Reimbursement procedures that are complicated may especially deter patients with low literacy or limited English capabilities from being able to seek care. The health-care system contributes to the major issue of time limitations of health-care providers. While minority patients may have complex health-care issues and may indeed require more time and resources to discuss and address complex health problems and their interaction with social problems, the health-care system can discourage the provision of ideal care when sufficient time is not allocated or reimbursed adequately. As noted above, time pressures can also encourage clinicians to rely on heuristics and biases, which can in turn lead to care that is not ideal.

It is notable that limitations imposed by these time pressures may be alleviated by providing opportunities for communication about asthma outside of the traditional office environment. Many strategies have been considered and studied, including use of electronic communication via the Internet and e-mail, as well as use of educators and school-based programs. Evidence to date for the effect of such non-physician office-based endeavors is encouraging, although the evidence is not uniformly supportive. Whether such innovative alternatives to office-based communication will have an impact on national rates of asthma health disparities remains to be seen.

**Gaps And Opportunities For Research**

Generally, there is much empiric evidence of problems related to doctor/patient communication and how these problems may lead to poorer care and outcomes. While some studies have been conducted with patients who have asthma, much of the evidence is derived from patients with other conditions. Areas where research is needed are numerous and include the following:

(1) Studies are needed that document the extent to which problems with doctor/patient communication lead to inadequate care and poor outcomes for minorities with asthma.

(2) Studies are needed that document the mechanisms by which disparities occur, including provider attitudes, expectations, biases, and prejudices.

(3) While additional studies are needed in African Americans, there is a particularly large gap in understanding for other groups, including Latinos, American Indians, non–English-speaking immigrants, and Asians.

(4) Studies are needed that isolate the effect of other factors such as socioeconomic status, education, and other contextual factors from those attributable to race/ethnicity.

While there is some evidence for ways to reduce communication difficulties, including provision of cultural competence training to health-care providers, there is too little known about the most effective and efficient ways to overcome communication difficulties between patients and physicians. Clearly, there is an opportunity and a need to improve and extend the evidence base for the effect of communication on asthma care and outcomes for minorities. The ultimate goal should be to translate existing and emerging evidence into effective strategies to improve communication about asthma care and health, and ultimately to reduce the current health disparities.

Abbreviations: ED = emergency department; ICS = inhaled corticosteroids; MDI = metered-dose inhaler
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