Asthma is a chronic disorder characterized by airflow obstruction, bronchial hyperresponsiveness, and inflammation. Physical findings include paroxysmal dyspnea, wheezing on expiration due to constriction of the bronchi, coughing, and viscous mucoid bronchial secretions. Asthma attacks vary from mild to life threatening in severity, and are triggered by factors such as allergens, infections, exercise, abrupt changes in weather, or exposure to airway irritants such as tobacco smoke. Asthma is not a curable illness, yet its symptoms can be managed. In 2005, based on lifetime population estimates, 32 million Americans were diagnosed with asthma. Current asthma population estimates found that over 22.2 million Americans are diagnosed with asthma. It is the most common chronic disease of childhood, affecting 6.5 million children under the age of 18. More than 2.6 million Hispanics suffer from asthma, with certain subgroups bearing a greater proportion of the disease. For instance, individuals of Puerto

Exposing Barriers to Asthma Care in Hispanic Children

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Rican ancestry have current asthma prevalence rates higher than both non-Hispanic whites and blacks. These startling statistics bring the issue of asthma and its management in high-risk populations to the forefront.

### On the Rise

The overall health status of children in the United States has improved since the beginning of the century due to increases in technology, medications, and standardization of care. However, in relation to asthma prevalence, a continuous rise has been noted. Children 0 to 4 years of age show the largest increase in asthma prevalence and greatest use of health services, while adolescents exhibit the highest mortality. Between 1980 and 1994, the incidence of asthma increased 75% overall and 74% among children 5 to 14 years of age.

National guidelines, created by the National Institutes of Health (NIH), were developed to improve overall asthma outcomes. The guidelines set forth a step-wise approach for the management of infants, children, and adults with acute or chronic asthma. Categories range from intermittent, persistent mild, persistent moderate, and persistent severe. For each category, symptoms are evaluated and recommendations for medications are given. The goals set forth by the Expert Panel under the guidance of the National Heart, Lung, and Blood Institute are to control asthma so that patients can live active, full lives while minimizing the risk of asthma exacerbations and problems. This goal is focused around four components:

1. Medication: A step-wise pharmacologic therapy adjusted to the severity of the patient’s disease in which medication doses or types are stepped up as needed and down when possible.
2. Assessment and monitoring: Use of objective measures of lung function, monitoring, and assessing using multiple measures of current impairment and future risk.
3. Environmental control and other conditions: Multiple approaches to limit exposures that can worsen asthma.
4. Patient education: Teaching skills to self-monitor and manage asthma with an action plan will advance a partnership among the patient, family, and clinicians.

Unfortunately, research reveals that these goals are not being met. Fewer than half of the individuals presenting to the emergency department (ED), or who require hospitalization, are receiving anti-inflammatory medication. Moreover, the guidelines are less likely to be utilized in minority populations. Many factors can contribute to nonadherence to national guidelines in asthma management, resulting in poorer outcomes. These factors can be categorized as intrinsic and extrinsic barriers to asthma management (see Table: “Model of Perceived Barriers and Facilitators in Relation to Healthcare Outcomes”).

### Disparities

Racial and ethnic disparities in health status exist in the United States. Even though Hispanics are projected by 2020 to add the largest number to the overall population than any other group, they receive lower quality healthcare than whites, even after adjustments for access-related factors. Hispanics are significantly less likely to be in good health and more likely to be uninsured. These disparities are found in a broad range of areas, from insurance coverage, health status, and parental satisfaction with the healthcare system. Asthma is noted to have a higher prevalence in minority and low-income individuals compared to their more advantaged peers. Additionally, asthma mortality rates are found to be higher for minority populations. The prevalence rate of asthma among children is highest among Hispanic subgroups. Puerto Rican children were found to have a prevalence rate of 11% compared with 6% in the black population, 5% for Cubans, and 3% for whites and Mexican Americans.
Barriers to Care

Barriers to care are identified as perceptions or beliefs concerning the cost of taking health action; this cost can be tangible or intangible, and ultimately impacts healthcare outcomes. Barriers can be categorized as intrinsic and extrinsic to the healthcare consumer. Extrinsic barriers are an objective, system-related subset of the concept “barriers to care.” Items considered intrinsic are a subjective subset related to the individual.

Extrinsic barriers

While the reasons for disparities in health status between races and ethnic groups are complex, studies show that minority individuals lack access to appropriate primary health services and may not receive the range of available treatments recommended by the national guidelines. This includes unequal access to preventive care and receiving poor quality of care.2, 7-10 Most asthmatic Hispanic children polled received care from residents, interns, and nonboard-certified pediatricians, and were less likely to be referred to specialists than white asthmatic children.7, 8 White children received childcare in a private or group setting, while minority children were more likely to receive such care at a community health center or public clinic. Hispanic parents also reported that providers did not spend adequate time with their child during their last visit.7 All these issues validate that Hispanic children are not receiving the same quality of healthcare as their non-Hispanic counterparts. The failure of primary healthcare providers to employ guidelines and refer to pulmonary/asthma specialists, and the lack of fostering a strong provider-patient relationship automatically sets up an environment for poorer health outcomes.

Certain factors involving the provider or setting can affect adherence. Identifiable barriers include access, scheduling difficulties, and language differences.9 Communities that are largely Hispanic or black have higher rates of primary care provider (PCP) shortages than other communities, making finding a healthcare provider the first major issue in accessing the system. Once a PCP is found, patients are less likely to visit their clinician if the availability of appointments are too few or widely spread apart.11 In a group where transportation and economic issues are of major concern, appointments need to be readily accessible and frequent enough to reinforce learned information, while at the same time providing needed support of a chronic diagnosis. To maximize compliance, the individual must be able to access a provider, vocalize concerns, and understand instructions. When the provider is speaking a language that the patient does not understand, confusion ensues and reduces the likelihood of optimal care.12, 13

The interest level of the provider also affects adherence in patients. If the clinician does not appear interested in the patient’s welfare or does not take time to explain treatments or plan of care, adherence levels decrease.9 Only 60% of Hispanics would recommend their child’s provider to another as opposed to 84% of whites. If Hispanic families feel they can not trust or are not content with the information they receive from their provider, they are less likely to follow prescribed regimens and unknowingly cause poorer health outcomes in their children.9

Levels of parental acculturation affect asthma outcomes. Immigrant mothers have described more barriers to children’s healthcare than more acculturated mothers.14, 15 Barriers include difficulty accessing the clinic for well child visits, high copays for services, and primary language comprehension with the provider or agency.

Barriers associated with nonadherence within the healthcare system include lack of affordable and available health insurance coverage, limits on coverage for preexisting conditions, lapses in coverage with the transition of insurance coverage, deductibles and copayments, limits on number of well-care or follow-up visits and specialist referrals, limited reimbursements and support, and a lack of patient education programs and case management.16 Minorities represent most of the uninsured; 32.7% of Hispanics have no healthcare coverage.17 Minorities overrepresented in low paying jobs cannot readily afford the cost of healthcare services, medications, treatments, and follow ups, which also impacts health outcomes.

Environmental exposures also contribute to racial disparities. Research shows that minorities live in areas that fail to meet national air quality standards, and are above average in the number of air polluting facilities. They also have a higher incidence of living in low quality housing and heavily concentrated inner cities, overcrowded homes, and homes that lack air conditioning. This not only increases indoor triggers, but acts as a causal agent for children to spend more time outdoors during smoggy summer days.18, 19 Reports have documented that minorities are three times more likely to live in areas of toxic waste sites as opposed to nonminorities.19 Areas and postal codes reveal that impoverished inner

Minorities represent most of the uninsured—32.7% of Hispanics have no healthcare coverage.
city neighborhoods have a 2% to 10% higher rate of hospitalizations and deaths caused by childhood asthma, making environmental exposures a key contributor to causing and exacerbating asthma symptoms.²,²⁰-²² Environmental agents are a major contributor to higher incidence and poorer outcomes in Hispanic children.

**Intrinsic barriers**
Intrinsic barriers can significantly affect asthma outcomes in children. To demonstrate, Hispanic children have poor adherence to prescribed therapies—the adherence rate to recommendations set forth by the NIH was only 48%.⁵ A cross-sectional study found that 73% of surveyed participants were under-users of controller therapy, while 49% reported no controller medication use and 24% reported less than daily use. This partially accounts for higher rates in these children.²³ Nonadherence to prescribed regimens can take on many forms, and range from not filling prescriptions, incorrect dosage, improper dosing intervals, and premature discontinuation of drugs.²⁴ Medications are less likely to be utilized if they are expensive, have untoward side effects, are difficult to take, and if their benefits are not seen immediately.⁵,¹¹

Families have a strong influence on asthma outcomes in children. Family issues include single parenting, low incomes, job demands, a low level of educational attainment, limited time availability, and mental health problems of the primary caregiver.²,²⁵-²⁷ Families with significant psychological dysfunction are identified in children and adolescents who have died of asthma.¹¹ Looking at the family as a unit, one can begin to comprehend the influence family socioeconomics can have, which increases the prevalence of asthma in these children.

Acculturation also has an effect on Hispanic children’s access to the healthcare system and outcomes of care. Acculturation is defined as learning of the culture of a new society and the acquisition of dominant cultural norms by members of a nondominant group.¹⁵,²⁸ Studies show that as time from immigration increases, health problems become less important.²⁸ More highly-acculturated Hispanics used increased services, improved outcomes in relation to early intervention, and preventive care.²⁸ Immigrant mothers described more barriers to children’s healthcare than more acculturated mothers, yet less consistent acculturation is associated with better health outcomes, even though higher risk factors are seen.²⁸,²⁹ This makes acculturation an area of interest to the medical research community in regards to its effects on asthma outcomes.

Cultural differences related to hereditary risk are found to contribute to the rise in asthma. Some studies hypothesize that a greater burden of asthma among the U.S. population is related to the African gene or to its combination with the European gene.³⁰

**Facilitators**
In order to improve asthma outcomes in Hispanic populations, we must identify perceived barriers and implement facilitators at the intrinsic and extrinsic level.

**Extrinsic facilitators**
The first step in overcoming extrinsic barriers is to become more culturally competent and sensitive. Cultural competence has been linked to quality of care, and is tied directly to all healthcare systems.¹⁹ Healthcare workers must be aware of the diversity in values, beliefs, and lifestyles among Hispanics, and they must implement this knowledge in their delivery of healthcare. When healthcare systems implement this training and assure its delivery, barriers such as language, access, negative experience, and adherence issues can be overcome.¹⁸

At the individual provider level, the usage of generic medication as an alternative to more costly brand drugs must be considered. Other extrinsic facilitators include increasing accessibility to both patients and families, using pharmaceutical companies to subsidize medications, advocating the increase use of medical personnel in underserved areas, working with community-based resources to provide services to Hispanic children, increasing the usage of pediatric asthma specialists, increasing compliance with NIH guidelines, and developing appropriate educational material for children and families.¹⁶,²⁹

**Intrinsic facilitators**
Outreach programs have improved outcomes in certain minority populations by decreasing asthma symptoms, hospitalizations, ED visits, and oral corticosteroid use.¹⁸,³⁰,³¹ Outreach services must implement methods that increase the knowledge of parents, caregivers, and asthmatic children. By increasing information in an appropriate manner, many issues related to personal and family barriers may be overcome.

Subgroups within the Hispanic population that are at risk must be identified, and specific programs that address unique issues must be implemented. Increased research in
areas such as acculturation must also be carried out to determine its influence on asthma outcomes in this population so that appropriate interventions can be developed.

### Improving Outcomes

The incidence of asthma continues to rise in our society despite efforts to improve outcomes. The reviewed literature strongly supports the existence of ethnic and racial disparities in asthma prevalence, morbidity, and mortality. Hispanics have poor outcomes and have continuously underserved healthcare and medication because of intrinsic and extrinsic barriers. These barriers have contributed to more poorly controlled asthma.

National guidelines for asthma management have been developed and disseminated that delineate the measures to be undertaken in relation to a patient’s symptoms. Nonetheless, many issues appear to interfere with the implementation of these guidelines, including system, clinician, and patient issues. In order for recommended therapies to have maximum effectiveness, these issues need to be addressed and remedied. Once barriers are identified in Hispanic families, facilitators can be implemented in order to overcome them and improve outcomes.

Nurse practitioners (NPs) are in a unique position to be aware of barriers experienced by Hispanic populations in order to implement change and improve outcomes. The first step in this process is becoming culturally competent in dealing with patients and aware of their unique situations, and obtaining resources to overcome patient-perceived barriers. Nursing as a profession has historically been one of facilitating patient needs; individuals with asthma are not immune from this need. With barriers identified, NPs can become patient facilitators in meeting their healthcare needs and improving outcomes in this overly burdened minority group. Through increased nursing knowledge, NPs will continue to educate the patient and caregiver, thereby decreasing hospitalizations and improving health outcomes.

### REFERENCES


