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# Original Contributions

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## ACCESS TO DISEASE TREATMENT AMONG PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT WITH ASTHMA OR HYPERTENSION

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☐ **Abstract—Background: Asthma and hypertension are common among Emergency Department (ED) patients. Primary care providers are integral in managing these conditions, yet these patients are often in the ED. Objective: To determine access to care among ED patients with asthma or hypertension and the association with sociodemographic factors and disease acuity. Methods: This was a prospective, cross-sectional study of ED patients at an urban county hospital conducted between June 4 and August 31, 2008. Consenting patients were surveyed, and peak flow or blood pressure measured as appropriate. Access to disease treatment was defined as self-reported access to a primary care provider or current prescription for asthma or hypertension, or both. Descriptive statistics and multinomial logistic regression were used to analyze data. Results: There were 2303 patients enrolled; 283 had asthma, 543 had hypertension, and 187 had both. Seventy-one patients (25.1%) with asthma, 151 patients (27.8%) with hypertension, and 19 patients (10.2%) with both had poor access to disease treatment. Seeking ED medical attention was related to having poor access to treatment for patients with both asthma and hypertension. Females with asthma had poor access to treatment. In hypertension patients, good access to treatment was associated with excellent/good health status, housing status, and decreasing age. Poor access to treatment was associated with increasing blood pressure. Conclusions: Poor access to disease treatment and aspects of socioeconomic status were associated with seeking care in the ED. Changes in access to treatment may affect the number of patients seeking ED care, but not the severity of the presenting illness.** © **2015 Elsevier Inc.**

☐ **Keywords—asthma; hypertension; emergency medicine; emergency department; access to health care**

## INTRODUCTION

The chronic diseases of asthma and hypertension are very common in patients presenting to emergency departments (EDs) throughout the United States. It is well known that the treatment of hypertension decreases the risk of coronary artery disease, stroke, and renal failure (1). Similarly, the appropriate treatment of asthma controls symptoms, maximizes normal activity levels and exercise regimens, and prevents asthma exacerbations (2). Primary care providers are integral in overseeing and maintaining appropriate care for these chronic health conditions, as they are able to provide continuous, comprehensive, and coordinated care (1–4).

The ED is a catchall provider of medical care. Due to this, the ED treats a range of conditions, both urgent and nonurgent, and consequently cares for many patients with chronic diseases such as hypertension and asthma.

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Some patients with chronic diseases may use the ED for chronic care that is better provided in the primary care setting; one study showed that with appropriate, high-continuity primary care, asthmatic patients have a 60–75% reduction in ED visits and a 25% reduction in hospitalizations, as well as better health outcomes (5). Despite this, some patients continue to use the ED along with Emergency Medical Services for nonurgent reasons. Previous research has shown that factors associated with nonurgent use of the ED include poverty, homelessness, lack of a regular primary care provider, increased patient comorbidities and number of medications, and fragmented primary care and lack of coordination among providers (6–19).

Additionally, past research has shown that Medicaid enrollees or those who are underinsured may have reduced access to primary and specialist care and they therefore may choose the ED for care (20). However, even patients that are adequately insured may still choose the ED over other health care settings due to disconnects with the primary health care system (21). Further, patients may choose the ED for care due to its convenience, though recently emerging community paramedicine programs, where paramedics have additional training to assess patients and transfer them to alternative facilities when indicated, may alleviate some admissions that would be better served elsewhere (22).

It is known that when patients have access to needed services such as medications and a primary care physician, health outcomes are better (23). Less information, however, is available on the disease control of patients with chronic diseases such as hypertension and asthma, who are seen in the ED. In this study we aimed to characterize the demographics and health care-seeking behaviors of patients with these two chronic conditions presenting to an urban ED.

The primary goal for this study was to determine if ED patients with asthma, hypertension, or both conditions have access to disease treatment by assessing if they have a primary care provider or medication(s) for their chronic disease, and to assess their associations with demographic factors, self-reported health condition, medical history, and where they usually seek medical attention. We also sought to determine if there was a difference in the acuity of patients in the ED with and without access to disease treatment using blood pressure as a marker of severity for hypertension and peak flow as a marker of asthma.

## METHODS

### *Study Design and Setting*

This was a cross-sectional study conducted in the ED of the Hennepin County Medical Center (HCMC), a Level I trauma center with approximately 99,000 annual visits. This is an urban safety-net hospital that provides care for many underserved and diverse patient populations. The HCMC Human Subjects Research Committee approved the study prior to implementation. Between June 4 and August 31, 2008, we screened patients presenting to the ED through a standard sampling during daily randomized 8-h time intervals covering all 24 h a day (7 a.m.–3 p.m., 3 p.m.–11 p.m., and 11 p.m.–7 a.m.).

### *Participant Eligibility & Classification*

All adult (age > 18 years) patients in the ED were eligible for this study. We excluded patients with high acuity complaints per the treating clinician (including sexual assault), prisoners and those in police custody, speakers of languages other than English, patients presenting with altered mental status, and patients determined to be vulnerable adults. The exclusion due to intoxication or drug use, critical condition, vulnerable adult, or sexual assault status was determined by the treating clinician. Among those participants who were subsequently noted to have completed the study more than once, we excluded those whose presentations to the ED were separated by <2 weeks.

### *Data Collection*

Data were collected by volunteer research associates (RAs) of the HCMC Emergency Medicine Research Associate Program. The RAs were available during study shifts to monitor all patients in the ED. All patients that were roomed in the ED were approached by an RA unless their chart or the treating clinician indicated that they did not qualify per the exclusion criteria. All eligible patients were approached and screened to ensure they were eligible and then underwent informed consent. An enrollment log was kept, recording all eligible and ineligible patients in the ED.

All consenting participants completed the 34-question survey of patient demographics, health condition, medical history, and health care access administered by the RAs in a standardized fashion. Additionally, all patients had their blood pressure measured and recorded. If the patient reported a history of asthma, a four-question supplemental survey and peak flow measurement was also completed. Only patients reporting a history of asthma performed a peak flow measurement per the direction of the trained RA as part of the asthma supplemental data collection. Afterward, using age and height, the predicted peak flow and the percent of predicted peak flow were calculated for each participant. Patients freely reported answers and were given the option to stop the survey at any time. Patient enrollment was monitored by a