

The Effects of Primary Care and Insurance Access on Emergency Department Utilization for Dyspnea

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ABSTRACT

Objectives: Conventional wisdom holds that primary care access will decrease Emergency Department (ED) utilization. In ED patients with dyspnea, we evaluated prevalence of primary care (PCP) and insurance coverage, as well as the effects of primary care access on ED referral.

Methods: This was a prospective survey of a sample of adult patients presenting to the ED at Wake Forest Baptist Medical Center. We surveyed patients on all three shifts, weekends, and weekdays. In addition to insurance status, we asked patients whether they had PCP access, whether they contacted their physician prior to coming to the ED, and were they offered an alternative to coming to the ED.

Results: 114 patients consented to the survey. 20/114 (17%) did not have a PCP, and 14/114 (12%) did not have insurance. Having insurance was associated with PCP access, but did not affect likelihood of contacting PCP or being directed to go to the ED for acute care.

Conclusions: The majority of patients presenting to the ED with dyspnea had both PCP access and insurance. However, these elements were not sufficient to avoid ED utilization. Primary care access may not decrease acute episodic care delivery via the ED.

Introduction

There were 136.3 million visits to U.S. emergency departments (ED) in 2011, with only 40.2 million visits being related to acute injuries.¹ Multiple factors influence the decision to utilize the ED for medical concerns as opposed to other locations of care, including perceived acuity of need and lack of access to primary care providers (PCP). A topic of recent study is the incidence of ED visits for non-urgent conditions, or conditions that could be managed effectively by a PCP. The multitude of factors that cause patients to go to the ED instead of their PCP has been studied in depth, and insurance access and PCP access have frequently been identified as important factors.²⁻⁴ Studies have shown that in some cases as many as 42% of patients that presented to the ED for non-urgent conditions did not have access to a PCP.³ Importantly, Capp et al. concluded that the majority of patients that did have access to a PCP would prefer to not use the ED for non-urgent issues.⁵ The same study examined the differential rate

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of ED utilization between populations with various types of insurance, finding that ED utilization varied significantly between groups, with the Medicaid population being the most likely to present to the ED.⁵

Dyspnea is a common chief complaint in patients presenting to the ED. It is non-specific, in that it can portend a wide range of conditions, from potentially life-threatening conditions such as acute heart failure, pneumonia, pulmonary embolism, and chronic obstructive pulmonary disease (COPD) exacerbation to relatively benign conditions like panic attacks or upper respiratory infections. Given the range of potential severity of illness, and given the potential for primary care to manage many of these conditions without need for ED or hospital based care, we felt that a cohort of dyspneic patients presenting to the ED would represent an illuminating study cohort. We hypothesized that ED patients with dyspnea would be less likely to have insurance and primary care access. In addition, ED patients without access to a PCP would be more likely to come to the ED in poor condition and be hospitalized at higher rates than dyspneic patients with a PCP.

Methods

Study Design and Setting

We surveyed a convenience sample of adult patients that presented to the ED at Wake Forest Baptist Medical Center with a chief complaint of dyspnea. The ED is a Level I trauma center serving as a tertiary referral center for a large geographic catchment area covering western North Carolina as well as portions of Virginia, West Virginia, and Tennessee, and sees approximately 105,000 patient visits per year. Subjects were identified by reviewing the electronic medical record for chief complaint and triage information. Those under 18, those unable to provide direct informed consent, and those who were currently incarcerated or in law enforcement custody were excluded. Patients were approached on all three available shifts during both weekends and weekdays, increasing the representative nature of the sample. This study was approved with a waiver of documentation of informed consent by the Wake Forest University Biomedical Institutional Review Board.

Data Collection and Analysis

Demographic and medical history, including insurance status, were directly queried from the patient at the time of encounter. Patients were considered insured if they had any payor source, including private plans, Medicare, or Medicaid. In addition patients were asked if they had a PCP, whether they attempted to contact their PCP prior to coming to the ED, if they were successful in contacting their PCP or a representative, and whether they were offered an alternative to going to the ED. Results were transcribed via handheld tablet computer directly into an online Redcap database. ED disposition, hospital disposition, and hospital length of stay were collected retrospectively, where appropriate. T-test for unequal variances was used to compare parametric continuous variables, and Fisher's exact test was used to compare categorical variables. As hospital length of stay was not normally distributed, as evidenced by Shapiro Wilk testing, comparisons were made using the Wilcoxon Rank Sum test. All statistics were two tailed, and $P < 0.05$ was held to be statistically significant. The alpha was not adjusted for multiple comparisons, and formal sample size calculation was not performed. All analyses were performed using Stata 11.

Results

One hundred and sixteen patients consented to participate in the study, out of 175 that were approached. Data on insurance status was unavailable in two patients, leaving a cohort of 114 patients for analysis. Insurance data demonstrated 37 reporting private insurance, 38 having Medicare, 21 having Medicaid, 4 having federal insurance, and 14 having no insurance. Table 1 provides demographic characteristics of the cohort by insurance status. Patients with insurance coverage were significantly more likely to be older and identify as white. Twenty of the 114 (17%) patients reported they did not have a PCP. Table 2 provides a summary of PCP access and referral patterns relative to insurance. The mean age of patients without a PCP was 46.9 (95% CI 40.3-53.4), while the mean age of those with a PCP was 60.6 (95% CI 57.2-63.9, $p = 0.0005$).

Ten of the 14 patients without insurance were discharged from the ED, while only 22 of the 100 patients with insurance

Variable	Insured (n=100)	Self-Pay (n=14)	P value
Age in years	61 (58-64)	38 (31-46)	<0.0001
Non-white race/ethnicity	39 (39%, 95% CI 29-49%)	11 (78%, 95% CI 49-95%)	0.008
Male	47 (47%, 95% CI 37-57%)	9 (64%, 95% CI 35-87%)	0.26

Table 1. Demographic characteristics of the cohort. Categorical data are presented as proportion, percentage, and 95%CI. Continuous data are presented as mean and 95% CI. P values are per Fisher’s exact test for categorical variables, and Student’s T test for unequal variances for continuous variables.

Variable	Insured (n=100)	Self-Pay (n=14)	P value
PCP identified	88 / 100 (88%, 82-94%)	6 / 14(43%, 13-73%)	<0.0001
Attempted contacting PCP	34/88 (39%, 28-50%)	2 / 6 (33%, 4-78%)	0.29
Succeeded at contacting PCP	30 / 34 (89%, 73-97%)	2 / 2 (100%)	1.0
Directed to ED	27 / 30 (90%, 73-98%)	2 / 2 (100%)	1.0

Table 2. Relationship between insurance status and primary care interactions. Categorical data are presented as proportion, percentage, and 95%CI. P values are per Fisher’s exact test for categorical variables.

Abbreviations: ED – Emergency Department; PCP – Primary Care Provider

were discharged ($p < 0.0001$). Seven of the 20 patients (35%, 95%CI 12-58%) without a PCP were discharged from the ED, and 25 of 96 patients (26%, 95%CI 17-35%) with a PCP were discharged ($p = 0.42$). Patients without a PCP had a median length of stay in the hospital of 27.6 hours, while those with a PCP stayed a median of 68.4 hours ($p = 0.08$).

Discussion

In our sample, there is a clear relationship between the possession of any insurance, including Medicaid, and access to primary care. This is important beyond the scope of just

this study, as studies have shown there are many benefits associated with access to primary care.⁶ Studies have begun to assess the impact that expanding access to insurance would have on public health,⁷ and establishing the premise that access to insurance is linked to access to primary care is an important step.

Conditions such as heart failure, asthma, COPD, and pneumonia are classified by the Centers for Medicare and Medicaid Services (CMS) as ambulatory care sensitive conditions (ACSC). ACSC are those conditions which adequate primary care should be expected to prevent the necessity for acute hospitalization.⁸ It has been suggested that increased primary care availability can decrease ED utilization by diverting “unnecessary” ED visits. However, in this study we observed that, despite access to primary care, patients were directed to the ED for acute, episodic medical care. It may be that the patients were already aware of this situation, as only 39% even attempted to contact their primary care provider. Our findings stand in contrast to other studies that describe lack of PCP access as a driving reason for ED use.^{2,9-11} Specifically, Capp et al concluded that perceived acuity of need was less important than PCP access for Medicaid patients that chose to use the ED.⁹ Overall, this study failed to find any evidence that access to a PCP resulted in less utilization of emergency services.

The relationship between insurance status and medical outcomes is likely confounded by patient age. The uninsured cohort was substantially younger, and presumably less burdened with comorbidity. This is consistent with the provision of Medicare to all U.S. citizens over the age of 65, which establishes a functional ceiling to the age of uninsured patients. Given that the sample size of our cohort limited our ability to examine multivariate relationships, we need to examine the relationship between insurance status and outcomes with a critical eye. We had predicted that patients with insurance and PCP resources would be more likely to be discharged because they would have access to care and be more likely to have a higher baseline of health, but the results of our study did not support this.

Limitations

Our study is limited in that we were only able to survey dyspneic patients who were already presenting to the Emergency Department. We had no opportunity to examine counterfactual examples — patients who were successfully managed in the outpatient setting. However, the very high rate of ED referral by primary care is consistent with empiric observation, as well as with results of a national survey of ED physicians conducted in 2011. This survey found that an overwhelming majority (97%) of ED physicians saw patients referred from PCP to the ED on a daily basis, and felt that the frequency of referrals to the ED was increasing.¹² In addition, we did not attempt to differentiate between types of primary care by specialty, or clinic vs. individual provider. We also did not attempt to verify the patient's statement regarding PCP access, relying on the patient's self-report. Finally, this was a relatively small cohort derived from a single center via convenience sampling, and results should be interpreted accordingly.

Future Directions

As noted above, several medical conditions are identified in the literature as ambulatory care sensitive. It may be worthwhile to examine primary care access and referral patterns in these other conditions. In addition, a formal qualitative analysis of both patient care seeking patterns, as well as reasons for physician responses, may be illuminating.

Conclusion

The majority of patients presenting to the ED with acute dyspnea have insurance coverage and primary care access. There is a distinct relationship between the presence of insurance coverage and availability of primary care. Nearly all patients in the sample who contacted their PCP were directed into the ED. Increasing access to primary care may not affect the use of the ED for acute, episodic medical care.

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