Non-emergency Use of Emergency Medicine Services According to Insurance Status in an Urban Population

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ABSTRACT

The purpose of this study is to describe non-emergent use of the ED at Maricopa Medical Center (MMC) and any association of non-emergent use with insurance and demographic variables. Computer-stored data about ED visits during the years 2008-2009 were provided by ASU's Center for Health Information and Research (CHiR). These visits were classified using an algorithm developed by Billings et al at the NYU Center for Health and Public Policy Research which uses ICD-9-CM codes to determine a percentage of likelihood that the visit was emergent or not after identifying visits that cannot be classified clearly as either emergent or non-emergent. After classifying ED visits, a statistical analysis was done to evaluate the association of demographic and insurance status variables with non-emergent use of the ED for all visits and for visits that were not due to injury, psychiatric conditions, alcohol or drugs.

We find that 47% of the total visits were classified as non-emergent. Furthermore, of the non-emergent visits after excluding the unclassifiable visits the rate of non-emergent use by insured patients is 53.3% compared to 67% rate for self-pay/charity patients and 60.6% rate for AHCCCS/Medicaid patients. Clearly there is a large volume of non-emergent use at MMC and a correlation exists between not having insurance and using the ED non-emergently at a higher rate compared to the insured population. All patient populations however did have a large number of non-emergent visits. Non-emergent ED use is then thought to be a valid target for health care policy discussion and a need exists for evaluating what the economic impact of these visits may be.

INTRODUCTION

Emergency Departments are often a target of discussions on reform of the US health care system in relation to achieving better outcomes with lower costs. A common inference is that many patients must use EDs as their primary health care source when they don't have health insurance as the ED cannot legally turn them away. The ED becomes their only possible source of health care. Furthermore it is suggested that those patients without insurance who are unable to seek primary care services may end up being seen at a higher rate in the ED with more critical emergent needs that might have been prevented if they had access to primary care. This is one obvious source of decreased healthcare outcomes as the patients become "more sick" and it also is a source of increased financial burden as emergency department physicians/hospitals often go uncompensated for these visits.

This study quantifies the amount of non-emergent visits at MMC over a two year period and then examines those visits to see if they are influenced by demographic variables.

METHODS

The data was obtained from the CHiR database and included all visits to the MMC ED by adults in the years 2008-2009 including those which resulted in hospitalization.

This study used an approach to classifying ED visits as emergent or non-emergent that was developed by John Billings et al and the NYU Center for Health and Public Service Research. The algorithm defines "emergent" as needing care within 12 hours and categorizes the visits into those which were emergent and not-preventable with appropriate Primary Care, visits which were emergent but were preventable/avoidable with appropriate Primary Care services and visits which were not emergent. Not emergent visits include both non emergent and emergent but treatable by a primary care physician visits. They initially mapped ICD-9 codes to a chart review of emergency room visits and then assigned a percentage of likelihood that each visit with the given ICD-9 code fell into each emergent status category.

Statistical analysis software SAS was used to compare the visits emergent status against other demographic variables including insurance status, sex, age and race. The uninsured patients include both self-pay and charity payers. AHCCCS (Medicaid) patients were categorized separately and all other insurance payer types were categorized as commercial insurance payers. Other demographic factors were categorized as described in Table 1. Visits which were not classifiable were excluded from the results in table 1 and included visits for injuries as well as psychiatric, drug and alcohol related reasons.

RESULTS

There were 75,925 visits to the Maricopa Medical Center ED in 2008-2009 by patients aged 18+. It is notable that a large percentage of the total visits to the hospital were by Self-pay/Charity (31.1%) or AHCCCS (41.1%) patients with the "Other Payer" group comprising the other 27.8%.

Of the total 75,925 visits, 46.6% were deemed to be either "non-emergent" or "emergent but primary care treatable". Visits that were unclassified comprised 23.6% of the total visits and "Not non-emergent" visits 29.8% of the total.

Insurance status was evaluated for amount of non-emergent use with the following results. Of uninsured visits to the hospital, 67% were non-emergent. 60.6% of AHCCCS visits were non-emergent as were 53.3% of visits by patients with commercial insurance.

Non-emergent visits were divided among other demographic variables as shown in table 1.

Chart 1
Non-Emergent Status

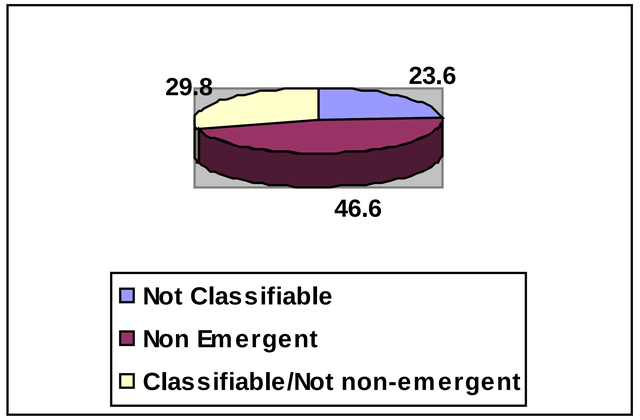

Table 1.
Non-emergent status vs. Variables

	TOTAL visits	Number non emergent	Percent Distribution	P value*
Insurance				
Uninsured	18,955	12,692	67.0	
AHCCCS	25,815	15,650	60.6	
Commercial	13,214	7,048	53.3	<.0001
Sex				
Male	29,330	16,896	64.5	
Female	28,654	18,494	57.6	<.0001
Age in Years				
18-24	9,519	6,362	66.8	
25-34	12,670	8,768	64.1	
35-44	13,001	8,220	63.2	
45-54	12,259	7,361	60.1	
55-64	6,101	3,209	52.6	
65+	3,434	1,470	42.8	<.0001
Race/Ethnicity				
Hispanic	27,029	16,693	61.8	
White	17,771	10,449	58.8	
African-American	9,954	6,331	63.6	
American Indian/ Native Alaskan	1,299	760	58.5	
Other/Missing/Asian or Pacific Islander	1,931	1,157	59.9	<.0001

DISCUSSION

The most striking discovery from the data is that 47% of the visits to the emergency room were designated as non-emergent. It is important to note that this number includes those visits which while emergent were able to be treated in a Primary Care setting

Further studies would benefit from including time of day in the analysis as some visits classified as "able to be treated by family physician" may have occurred during off hours when Primary Care resources are scarce.

Relevant to the health care reform/political discussions is the impact of insurance status on the non-emergent use variable. The study does find that uninsured patients visited for non-emergent reason at a higher rate (13.7% higher) than insured patients and that these results were statistically significant.

Of note is the fact that while they used the ED non-emergently at a lower rate, a large number of visits by insured patients were in fact non-emergent. This suggests that increased primary care services (via increased access to insurance) would only be a small portion of the solution to decreasing non-emergent ED use.

Further studies would also be benefited by including other hospitals with differing payer populations, including hospitals with a greater percentage of commercial insurance payer type patients.

CONCLUSION

It is clear from the data obtained from MMC that at least for this major county hospital, a large number of visits to the emergency room are made each day that are non-emergent. This validates the observations of many who work in Emergency Departments. The economic impact of this non-emergent use should be quantified in the future to determine if modification of this non-emergent ED use would be cost-effective. For example, would providing the uninsured with insurance (and presumably decreasing their non-emergent ED use) cost more than the benefit gained from their being insured or would this indeed be a cost-effective strategy? Important in this analysis would be looking at local Primary Care visit costs and comparing them to again local Emergency Department costs.

The Emergency Department is often scrutinized in public health policy decision making as a target for money savings. It is now clear that there is use of the Emergency Department in situations when it need not be utilized. As we move towards stabilizing the healthcare system financially we should analyze the economic impact of these visits and see whether or not the ED is truly a strong target for cost reform policies.