Factors impacting patient overcrowding at University of New Mexico Hospital Emergency Department

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Title: Factors impacting patient overcrowding at University of New Mexico Hospital Emergency Department

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A. BACKGROUND AND OBJECTIVES:

Many hospitals in the United States are currently experiencing Emergency Department (ED) overcrowding. The University of New Mexico Hospital is no exception. The reason for patient visits can vary from a common cold to a major trauma. According to the National Hospital Ambulatory Medical Care Survey (NHAMCS), the most common ailments seen in the ED in 2003 were abdominal pain, chest pain, fever and cough, all of which accounted for one-fifth of all visits. The great variation for patient visits and the fact that overcrowding is now a major concern has many administrators and healthcare providers re-evaluating the “appropriate” use of the Emergency Department. Many patients utilize the Emergency Department as their primary source of healthcare.

It was recently reported that Emergency Department utilization in the United States increased from 90.3 million to 113.9 million annual visits, an average increase of 2 million per year (NMAMCS study). At any given day patients may find themselves waiting hours on end to be seen by a physician. The NHAMCS found that in 2003 four-fifths of ED visits were between 1-6 hours and average time spent in the Emergency Department was 3.2 hours. Recent studies have considered several contributing factors as the core of this major overcrowding problem. Included among these factors are method of payment, insufficient referrals to primary care physicians, over-representation of specific demographics presenting to the Emergency Department, lack of access to primary care, and lack of insurance.

In the article The Role of the Emergency Department, published in The New England Journal of Medicine, Dr. Robert Steinbrook notes that in 1993 the annual excess
charges for non-urgent visits in the United States was $5 billion to $7.2 billion. These numbers include bills that were not paid or were handled by Medicaid or managed-care. He also notes that the average charge (including physician, hospital and emergency department charges) was $383 compared to the average charge of $124 for non-urgent visits. Bamezai, Melnick and Nawathe also note that between 1992 and 2001, ED visits in the United States increased to 107.5 million. The current literature debates whether there is an actual cost difference in treating non-urgent care vs. urgent care visits. Richardson and Hwang note that the ED has high fixed costs due to the 24-hour, 7 days a week schedule but is not dependent on volume. They note that although a visit to a primary physician at 4pm might be lower in cost, the same visit would cost more at 4am since the clinic site would have to maintain a 24-hour schedule and therefore, would need to pay for extra staff and supplies. McCarty et al. found that of the patients referred to a primary care physician, 19% of those that were self-pay completed three or more visits, compared to 63% of patients eligible for a sliding fee or insurance.

A study by Grumbach, Keane and Bindman concluded that referral to a primary care physician alone does not significantly decrease the overcrowding problem. They found that along with a referral there is a great need for availability and “coordination of primary care services …for low income populations”. Although most ED non-urgent patients were not dependent upon the ED, the majority were unaware of other places to go for their current health problem. Even those patients with a primary care physician sought care in the ED because the ED was believed to provide better care despite its perceived increase in both waiting time and cost (Northington, Brice and Zou).
Another suggested solution has been that of managed care. However, a retrospective study of ED patient population revealed that upon initiation of a managed care program (the “Program” for uninsured patients), there was no significant drop in ED usage in uninsured, indigent population at the University of New Mexico Hospital (Kwack et al.). The need for ED-managed Acute Care Unit has also been suggested as a possible factor contributing to overcrowding. Kelen et al. found that this had a significant impact on reducing overcrowding.

According to Frey et al. “32% of ED visits were inappropriate based on published criteria and 24 % per physician opinion”. They also found that Hispanics and Medicaid recipients had the highest rates of inappropriate visits. The NMAMC study found that in 2003 ED utilization was highest among Medicaid recipients (81 visits per 100 patients) and patients with private insurance had the lowest (21 visits per 100 patients). Campbell, Pai, Derksen, and Skipper found that privately insured or Medicare recipients were more likely to use the ED appropriately. NMAMCS also found an overall increasing trend in visits per patient age group. Patients 22-49 years of age increased in visits from 1993-2003 by 19%. Patients 50-64 years of age increased by 15% and those 65 and over increased by 26%. This study also found that ED utilization by African Americans was 86% higher when compared to Caucasians. 11% of patients utilizing the ED identified themselves as Latino or Hispanic.

In conducting this survey at UNMH, we hope to supplement current literature addressing Emergency Department overcrowding. Furthermore, we strive to address how UNMH, as an academic-teaching hospital, is affected by specific factors in ED overcrowding. UNMH administrators are in search of possible solutions to decrease
patient waiting time, cost of ED visits, and the volume of patients utilizing the Emergency Department. However, these possible solutions are largely dependent on the reasons why patients are presenting to the Emergency Department. Therefore, our proposed study is vital in providing real time answers from the patients to the current situation at UNMH.

**B. QUESTIONS:**

The goal of our research project is to explore different factors contributing to Emergency Department overcrowding at University of New Mexico Hospital. In particular, we want to address the following questions:

1. What patient populations are present in the ED at particular hours of the day?
   
   With reference to questions as follows: Age (#20); Gender (#19); Socioeconomic status: Health Insurance (#8a), Education (#18a); and Ethnicity (#21).

2. What percentage of patients are informed about alternative resources/clinics and would be willing to be seen at these places as opposed to the ER?
   
   With reference to questionnaire: (#11a).

3. What type of insurance (Medicaid, Medicare, self-pay) is used by patients presenting at the ED?
   
   With reference to questionnaire: (#8a)

In addressing these questions, we will analyze the relationship between possible contributing factors to determine efficient solutions.
METHODS

Study Design. This was a cross-sectional survey study designed to study the stated goals to study Emergency Department overcrowding at University of New Mexico Hospital. The institutional review board at the facility approved the study.

Study Setting and Population. This study was conducted in the waiting area of the UNMH ED and UNMH Urgent care. Because pediatric EDs have their own characteristics and patient volume-time distributions, they were excluded from this study.

Survey Development. The survey was modified from an initial survey as proposed by Dr. Edward Smith, a Family Medicine Resident (graduate) from UNM Family Medicine Residency program. The survey's questions were modified primarily by the medical students with added suggestions from the research mentors: Dr. Kaufman and Dr. Skipper in addition to Dr. Thomas Schiffler. During the first phase, a satellite sampling of the surveys were conducted at the UNMH ED waiting area to test the survey.

Approval from IRB

The Internal Review Board at the UNM SOM approved the study. We applied the study under human subjects with full anonymity without asking or revealing any identifying personal information from the study participants. The subjects were provided with an introductory letter from Dr. Kaufman along with the approval letter from IRB. No compensations were offered to the study participants and their participant was based solely voluntarily after obtaining verbal informed consent.
Selection of dates, times, and individuals. In order to cover the full range of demographics at patients at the ED, the selection of dates and times were performed randomly with the help of statistician Dr. Betty Skipper. The survey was performed in the month March and April, 2005. Days of the week and weekends were randomly selected in addition to hours of the day. Each day was divided into three blocks of time: 7am to 2pm; 2pm to 10pm; and 10pm to 7am.

Survey content. A self-administered survey of 31 questions were administered in English and Spanish. The attached file contains the copies of the survey both in English and Spanish. (Please see Addendum I)

Conduction of the survey. The study was administered by the medical students in the waiting area of the UNMH ED and UNMH Urgent care. On the randomized days, the students personally explained the purpose of the study and individually requested waiting room patients for their participation in filling out the questionnaires. Each participant was provided a questionnaire, a pen, and a clip board. The students read the questionnaire if needed for those with reading difficulties and then waited in the waiting room to answer any questions and/or for clarification purposes.

The questionnaires were made available in both English and Spanish. The Spanish translation was performed by Ms. Margarita Pedrego, a High School Spanish teacher at La Cueva High School, Albuquerque. A log was obtained to record those patients who refused to participate in the survey.
**Statistical analysis.** Specific times and days during the month of data collection were randomly chosen. Statistical analyses used confidence limits to estimate proportions of ED patients in specific demographic and knowledge of alternate resources categories.

Chi-square tests were used to compare knowledge of alternative resources and demographic characteristics for weekdays and weekends. If 50% of those coming to the ED on weekdays know of alternative resources, there is 80% power for detecting a difference if less than 35% or greater than 65% of the those coming to the ED on weekends know of alternative resources. The variables considered include: Age [18-34; 35-54; 55+]; Gender; Type of Insurance [Commercial, Medicaid, Medicare, Self-pay, UNM-Care Plan]; Education level [Elementary school, Middle school, High School, Vocational School; College]; and Ethnicity [Anglo, Hispanic, Native American, and others]. Data was entered in Epi Info (put out by Center for Disease Control) and converted into SAS Data. Dr. Betty Skipper and Dr. Margaret Sanders (Statisticians) assisted with the analysis.
Table 1. Variable Categories for Weekdays: Day, Early evening, Evening, and Night.

<table>
<thead>
<tr>
<th>Weekdays</th>
<th>Times of Day</th>
<th>Age</th>
<th>Gender</th>
<th>Type of Insurance</th>
<th>Ethnicity</th>
<th>Education</th>
<th>Informed about alternative clinics?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td></td>
<td>18-34</td>
<td>Male</td>
<td>Commercial</td>
<td>Hispanic</td>
<td>Elementary school</td>
<td>Yes</td>
</tr>
<tr>
<td>Early Evening</td>
<td></td>
<td>35-54</td>
<td>Female</td>
<td>Medicaid</td>
<td>Anglo</td>
<td>Middle school</td>
<td>No</td>
</tr>
<tr>
<td>Late Evening</td>
<td></td>
<td>55+</td>
<td></td>
<td>Medicare</td>
<td>Native American</td>
<td>High school</td>
<td></td>
</tr>
<tr>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td>UNM-Plan</td>
<td>Others</td>
<td>Vocational school</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Self Pay</td>
<td>College</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Beyond College</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Variable Categories for Weekdays: Day, Early evening, Evening, and Night.

<table>
<thead>
<tr>
<th>Weekends</th>
<th>Times of Day</th>
<th>Age</th>
<th>Gender</th>
<th>Type of Insurance</th>
<th>Ethnicity</th>
<th>Education</th>
<th>Informed about alternative clinics?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td></td>
<td>18-34</td>
<td>Male</td>
<td>Commercial</td>
<td>Hispanic</td>
<td>Elementary school</td>
<td>Yes</td>
</tr>
<tr>
<td>Early Evening</td>
<td></td>
<td>35-54</td>
<td>Female</td>
<td>Medicaid</td>
<td>Anglo</td>
<td>Middle school</td>
<td>No</td>
</tr>
<tr>
<td>Late Evening</td>
<td></td>
<td>55+</td>
<td></td>
<td>Medicare</td>
<td>Native American</td>
<td>High school</td>
<td></td>
</tr>
<tr>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td>UNM-Plan</td>
<td>Others</td>
<td>Vocational school</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Self Pay</td>
<td>College</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Beyond College</td>
<td></td>
</tr>
</tbody>
</table>

Limitations

Adult ER: The nature of the survey conducted excluded pediatric population. Therefore, this survey only represents information related to adult population.

Elimination of ambulance and trauma patients: As the survey was conducted by interaction with those patients only in the waiting area, it eliminated information
regarding those patients who were in ambulance and trauma patients who were direct admits without going through the admissions gate. Another, limiting factor was initially, the survey was conducted to all persons waiting in the lobby, therefore, it included data from those family members whose family were patients in ED. However, their participation gave information regarding either their current family members who were either waiting to be seen, or in the ED, or of their personal experience as being a patient in the ED or Urgent care.

**Selection Bias:** Although the survey will be made available in English and Spanish, by nature those without knowledge of these languages were inherently excluded from the survey. The administration of the survey was be done in late February and March, thus the survey reflects the patient population only during that time of the year.

**Survey Inherent Error:** The questionnaire may be composed of inherent risks of error such as generating a sense of general economic status of the patient population without explicitly asking their income level. Yet, we feel that it is important not to ask such a sensitive question directly in order to have the patients feel at ease and to have a greater compliant rate in the participation of the survey.

**Refusals:** Those patients who refused to participate in the study were obviously not included and a log of refusals with reasons were kept as well.

**RESULTS:**

Table 3 shows the compiled demographic variables of the study. As can be seen, both sexes were represented equally (male: 49% and female: 51%), being a fairly young population of 94% (n=146) being less than 54 years of age. 64% of the participants were
employed with 67% of them being full employed. Majority (81%) of the participants were residents of Bernalillo county.

Table 4 and 5 shows the breakdown of the participant demographics with relation to the question of what percentage of people did not know about alternative resources to the ED and if they had known of the such an alternate, would they be willing to be seen there as opposed to the ED? Of interest, majority (77%) of the participants did not know of alternatives to ED and overwhelmingly, majority (78% male; 68% female) answered that they would go to an alternative if they had known of such a source as opposed to coming to the ED.

Table 6 shows the breakdown of health insurance used by patients presenting at the ED.
**TABLE 3. Demographic Variables**

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>N=146</th>
<th>N (%)</th>
<th>Demographic variable</th>
<th>N=146</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>67</td>
<td>(49%)</td>
<td>Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>69</td>
<td>(51%)</td>
<td>employed</td>
<td>87</td>
<td>(64%)</td>
</tr>
<tr>
<td>missing</td>
<td>10</td>
<td></td>
<td>unemployed</td>
<td>32</td>
<td>(24%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>other</td>
<td>16</td>
<td>(12%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>missing</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 34</td>
<td>70</td>
<td>(54%)</td>
<td>Type of Work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-54</td>
<td>51</td>
<td>(40%)</td>
<td>seasonal</td>
<td>7</td>
<td>(7%)</td>
</tr>
<tr>
<td>55 +</td>
<td>8</td>
<td>(6%)</td>
<td>steady</td>
<td>8</td>
<td>(8%)</td>
</tr>
<tr>
<td>missing</td>
<td>17</td>
<td></td>
<td>full time</td>
<td>66</td>
<td>(67%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>part time</td>
<td>17</td>
<td>(17%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>missing</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>34</td>
<td>(26%)</td>
<td>Live in Bernalillo County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>68</td>
<td>(51%)</td>
<td>Yes</td>
<td>108</td>
<td>(81%)</td>
</tr>
<tr>
<td>African American</td>
<td>4</td>
<td>(3%)</td>
<td>No</td>
<td>26</td>
<td>(19%)</td>
</tr>
<tr>
<td>Native American</td>
<td>13</td>
<td>(10%)</td>
<td>missing</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>mixed race</td>
<td>8</td>
<td>(6%)</td>
<td>If no, what county</td>
<td></td>
<td></td>
</tr>
<tr>
<td>other</td>
<td>6</td>
<td>(5%)</td>
<td>Bexar, TX</td>
<td>1</td>
<td>(5%)</td>
</tr>
<tr>
<td>missing</td>
<td>13</td>
<td></td>
<td>Cibola</td>
<td>2</td>
<td>(10%)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td>McKinley</td>
<td>3</td>
<td>(14%)</td>
</tr>
<tr>
<td>Never married</td>
<td>45</td>
<td>(34%)</td>
<td>San Juan</td>
<td>1</td>
<td>(5%)</td>
</tr>
<tr>
<td>Living with long term partner</td>
<td>27</td>
<td>(20%)</td>
<td>Sandoval</td>
<td>4</td>
<td>(19%)</td>
</tr>
<tr>
<td>Married</td>
<td>38</td>
<td>(28%)</td>
<td>Socorro</td>
<td>1</td>
<td>(5%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>16</td>
<td>(12%)</td>
<td>Taos</td>
<td>1</td>
<td>(5%)</td>
</tr>
<tr>
<td>Separated</td>
<td>4</td>
<td>(3%)</td>
<td>Torrence</td>
<td>1</td>
<td>(5%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>(3%)</td>
<td>Valencia</td>
<td>7</td>
<td>(33%)</td>
</tr>
<tr>
<td>missing</td>
<td>12</td>
<td></td>
<td>missing</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>college</td>
<td>49</td>
<td>(37%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vocational</td>
<td>15</td>
<td>(11%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>high school</td>
<td>59</td>
<td>(45%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>middle school</td>
<td>8</td>
<td>(6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>elementary</td>
<td>1</td>
<td>(1%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>missing</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**TABLE 4:** What percentage of patients are informed about alternative resources/clinics and would be willing to be seen at these places as opposed to the ER? N=146

Q 11a. Do you know of alternative clinics to using the Emergency room?

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>Yes N (row %)</th>
<th>No N (row %)</th>
<th>Fisher’s Exact p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15 (23%)</td>
<td>49 (77%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Female</td>
<td>15 (23%)</td>
<td>51 (77%)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td>0.71</td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>6 (18%)</td>
<td>27 (82%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>16 (25%)</td>
<td>49 (75%)</td>
<td></td>
</tr>
<tr>
<td>All Other</td>
<td>8 (27%)</td>
<td>22 (73%)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>0.28</td>
</tr>
<tr>
<td>18 – 34</td>
<td>12 (18%)</td>
<td>53 (82%)</td>
<td></td>
</tr>
<tr>
<td>35 – 54</td>
<td>16 (31%)</td>
<td>35 (69%)</td>
<td></td>
</tr>
<tr>
<td>55 and older</td>
<td>2 (25%)</td>
<td>6 (75%)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td>0.90</td>
</tr>
<tr>
<td>College</td>
<td>11 (23%)</td>
<td>36 (77%)</td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
<td>4 (27%)</td>
<td>11 (73%)</td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>15 (27%)</td>
<td>40 (73%)</td>
<td></td>
</tr>
<tr>
<td>Elementary or middle school</td>
<td>1 (12%)</td>
<td>7 (88%)</td>
<td></td>
</tr>
<tr>
<td>Medical Insurance</td>
<td></td>
<td></td>
<td>0.41</td>
</tr>
<tr>
<td>Yes</td>
<td>12 (20%)</td>
<td>49 (80%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>19 (26%)</td>
<td>53 (74%)</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td>0.55</td>
</tr>
<tr>
<td>Employed</td>
<td>21 (26%)</td>
<td>61 (74%)</td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>5 (16%)</td>
<td>26 (84%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4 (27%)</td>
<td>11 (73%)</td>
<td></td>
</tr>
</tbody>
</table>
Table 5: Q11d – Would you have used one of these alternatives for your problem today?

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>Yes</th>
<th>No</th>
<th>Fisher’s Exact p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (row %)</td>
<td>N (row %)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>47 (78%)</td>
<td>13 (22%)</td>
<td>0.23</td>
</tr>
<tr>
<td>Female</td>
<td>45 (68%)</td>
<td>21 (32%)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>24 (75%)</td>
<td>8 (25%)</td>
<td>0.69</td>
</tr>
<tr>
<td>Hispanic</td>
<td>45 (69%)</td>
<td>20 (31%)</td>
<td></td>
</tr>
<tr>
<td>All Other</td>
<td>21 (78%)</td>
<td>6 (22%)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 34</td>
<td>46 (68%)</td>
<td>22 (32%)</td>
<td>0.51</td>
</tr>
<tr>
<td>35 – 54</td>
<td>34 (77%)</td>
<td>10 (23%)</td>
<td></td>
</tr>
<tr>
<td>55 and older</td>
<td>5 (71%)</td>
<td>2 (29%)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>37 (84%)</td>
<td>7 (16%)</td>
<td>0.07</td>
</tr>
<tr>
<td>Vocational</td>
<td>10 (77%)</td>
<td>3 (23%)</td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>39 (70%)</td>
<td>17 (30%)</td>
<td></td>
</tr>
<tr>
<td>Elementary or middle school</td>
<td>4 (44%)</td>
<td>5 (56%)</td>
<td></td>
</tr>
<tr>
<td>Medical Insurance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>42 (70%)</td>
<td>18 (30%)</td>
<td>0.55</td>
</tr>
<tr>
<td>No</td>
<td>52 (75%)</td>
<td>17 (25%)</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>56 (70%)</td>
<td>24 (30%)</td>
<td>0.60</td>
</tr>
<tr>
<td>Unemployed</td>
<td>24 (80%)</td>
<td>6 (20%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>11 (73%)</td>
<td>4 (27%)</td>
<td></td>
</tr>
</tbody>
</table>
**TABLE 6: What type of insurance (Medicaid, Medicare, self-pay) is used by patients presenting at the ED? N=146**

<table>
<thead>
<tr>
<th>Q7 - How do you pay for your healthcare?</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNM Care</td>
<td>27 (18%)</td>
</tr>
<tr>
<td>UNM Care, Medicaid, and Medicare</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>UNM Care and Medicare</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>UNM Care and HMO</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>UNM Care and self pay</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>UNM Care and other</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>Medicaid</td>
<td>15 (10%)</td>
</tr>
<tr>
<td>Medicare</td>
<td>8 (5%)</td>
</tr>
<tr>
<td>Medicaid and Medicare</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Medicaid and HMO</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>HMO</td>
<td>11 (8%)</td>
</tr>
<tr>
<td>HMO and self pay</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>HMO and other</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Self pay</td>
<td>29 (20%)</td>
</tr>
<tr>
<td>Other</td>
<td>13 (9%)</td>
</tr>
<tr>
<td>None</td>
<td>10 (7%)</td>
</tr>
<tr>
<td>Did not answer the question</td>
<td>19 (13%)</td>
</tr>
</tbody>
</table>

**DISCUSSION:**

The first question we had aimed to find was: What patient populations are present in the ED at particular hours of the day? Gender played no difference in distribution of the survey participants. Females (51%) sought care at ER equally as the male (49%) counterparts. However, high employment rates dispelled the myth that most of the patients at UNMH are unemployed because majority (64%) of the participants were full time employed while 24% were unemployed. Regarding health insurance coverage, 20% of the participants reported themselves to be "self pay" while the second highest (18%) of population reported to have UNM Care Plan while 10% reported to have Medicaid.
As shown in Table 4, a high rate (77%) of the survey participants do not know of ER alternatives. This was equivocally same with the both males and females. Various reasons can be contributing to this gap in knowledge about ER alternatives. It could be that there is lack of information available for these participants regarding the alternatives or it could be that availability of such alternatives are not well advertised. The idea of night clinics is a new development that could address this need as xx% responded that if such an alternative is available then they would rather go to these clinics than come to the ER as they did not feel that the care at ER was significantly better than regular clinics.

Currently, the evening clinics at UNM based family medicine clinics (1209 Clinic) have been reported to have 65% full statistics (as per Dr. Shiffler's conversation with the clinic in 2007).

Suggestions for improvement for having full statistics at such evening clinics could involve advertising of evening clinic hours at check in period and through local media of newspaper and radio. The evening clinics at UNM Family Medicine Department could be continued to open evening hours for continued access. Another suggestion is to assign a "medical home" with a Primary care provider for patients once they leave the ER. This will provide a strong safety net in preventing ER overcrowding and having evening clinics open at these medical home sites will provide continuous care which is efficient.

Our study is somewhat compromised by limitations regarding the small amount of study participants however it suggests important trends which are tailored to finding solutions that would cater to the local population being served by the mission of hospital. Future studies performed during different seasons of the year could be beneficial in getting full data in addition to having a large amount of study participants.


National Hospital Ambulatory Medical Care Survey. www.cdc.gov/nchs/about/major/ahcd/ercharts.htm


Addendum 1: Copy of the Questionnaire

The purpose of this survey is to find out more about the reasons our patients at UNM have chosen to visit the Emergency Department or Urgent Care. Long term goals include developing or expanding strategies to reduce the burden of ER overcrowding such as opening more clinics or expanding/rotating hours. Using these data, we will try to find out how we may better provide healthcare for you. Medical care received today and waiting time will not be affected by your participation in this survey.

Thank you for agreeing to complete this survey. All information, including your medical record number, will be kept confidential and only be viewed by healthcare professionals.

1) What is your medical record number? __________________

2) Why did you come to the emergency room today?
_________________________________________________________________
_________________________________________________________________

3a) Did you consider going somewhere other than the Emergency Room?
   Yes  No

3b) What prevented you going elsewhere?
_________________________________________________________________
_________________________________________________________________

4) Do you have your own doctor or your own clinic that you visit regularly? (A “regular doctor”)
   Yes  No

5) What type of clinic do you regularly attend?
   Family Practice (all ages)
   Internal medicine (adults only ages 18 and up)
   OB/GYN or Womens Health (sees only women)
   Pediatrics (sees only children 0-18 years old)
   Other Specify:________________________

6) Do you know if your doctor is a doctor in the community, resident doctor, faculty at UNM, nurse practitioner, or physician assistant? (your “regular doctor”)
   Yes  No

   If yes:
   Doctor in the community (not at UNM, at Lovelace, Presbyterian etc)
   Resident doctor (in-training)
   Attending doctor (faculty at UNM)
   Nurse Practitioner
   Physician assistant (PA)
7) Do you have medical insurance?
   Yes   No

8a) How do you pay for your healthcare? Please check all that applies:
   UNM Care Plan
   Medicaid
   Medicare
   HMO based pay plan
   Self-pay
   Other Specify:________________________
   No insurance or cannot pay; if no insurance:
   Insurance ran out (expired)
   Waiting for coverage
   No longer eligible for coverage (moved, changed jobs, lost job etc)

8b) Has anyone told you about “UNM Care” or State Coverage Initiative at UNM?
   Yes   No

9) Do you know how to get an appointment at a primary care clinic?
   Yes   No

10) If you could make an appointment at an evening primary care clinic would you go there for non-emergencies or other illnesses?
    Yes   No

10b) Regarding the health problem bringing you here today, the care is given better at:
   Emergency room gives better care than a Primary care clinic
   Emergency room gives same care as a Primary care clinic
   Primary care clinic gives better care than Emergency room

11a) Do you know of alternative clinics to using the Emergency Room?
    Yes   No
    If yes, can you name the alternative clinics:

    __________________________________________________________
    __________________________________________________________

11b) What would be the best time slots to use alternative clinics?

    __________________________________________________________
11c) What locations would be best for you to visit these clinics (check all that apply)?
   SE
   SW
   NE
   NW

11d) Would you have used one of these alternatives for your problem today?
   Yes    No

12) What time of day/night are you completing this survey?
   Weekday –OR–
   Weekend

and between:
   8am-4pm
   4pm-9pm
   9pm-Midnight
   Midnight-8am

13a) If you do not have insurance or didn't have insurance, how do you/how would you
    pay for your medical care?
    Pay when I am seen by doctor
    Payment plan
    Sliding scale
    Can't pay
    Other ____________________________

13b) Does payment before being seen in an outside clinic play a role in your choosing the
    Emergency Room for primary care?
    Yes    No

13c) Have you ever felt that you could not afford to go to the doctor?
    Yes    No

14) How many times in the last year did you NOT see a doctor because you felt you
    couldn't afford the visit?
    None
    One time
    Two times
    Three times
    Four times
    More than 5 times
15) How many times in the last year have you visited the UNM emergency room/urgent care?
   None
   This is the first time
   Two visits
   Three visits
   Four visits
   More than 5 visits

16) How many times in the last year have you visited another Emergency Room (Presbyterian, Lovelace, etc)
   None
   One visit
   Two visits
   Three visits
   Four visits
   More than 5 visits

17) How many times in the last year have you visited the emergency room and NOT been seen (i.e. you left before being seen, emergency room was too crowded, had to go to work etc)
   None
   One time
   Two times
   Three or more times
   What was the reason you were not seen? ________________________________

18a) What level did you reach in school?
   College and/or beyond
   Vocational
   High school
   Middle school
   Elementary

18b) Are you:
   Employed
   Unemployed
   Other (student, retired, disabled on SSI/disability etc

18c) What is your occupation? ________________________________
   Type of work?
   Seasonal
   Steady
   Part-time
   Full-time
18d) Do you get health benefits through work?
   Yes                     No

19) Are you male or female?
   Male
   Female

20) How old are you?
   _________________________

21) How would you describe your ethnicity/race?
   White or Caucasian non-Hispanic
   Latino or Hispanic
   African American/Black
   Asian/Pacific Islander (Japanese, Chinese, Vietnamese etc)
   Mixed race or biracial
   Other _____________________

22) What is your marital status?
   Never married
   Living with long term partner
   Married
   Divorced
   Separated
   Widowed

23) How many people are there in your immediate family? (including spouse and children)
   _________________________

24) Do your children have medical coverage?
   Yes    No    Not applicable

25a) Do you live in Bernalillo county?
   Yes    No

25b) If not, which county do you live in?
   _________________________

26) Did you try to call an emergency pager number/after hours pager number for your regular Doctor?
   Yes
   No
Please answer the following questions the best you can:

27) If your regular Doctor was available now or had after-hours clinic you would not have come to the Emergency Room today.
   Agree
   Somewhat Agree
   Somewhat disagree
   Disagree

28) If you could have spoken to your regular Doctor, you would not have come to the Emergency Room today.
   Agree
   Somewhat Agree
   Somewhat disagree
   Disagree

29) In your opinion, was your illness or reason for coming to the Emergency Room an emergency that could not have waited until tomorrow or your next chance to go to clinic?
   Agree
   Somewhat agree
   Somewhat disagree
   Disagree

30) Are there any other reasons not covered by this survey that influenced your decision to come the Emergency Room today?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

31) What recommendations do you have as possible solutions?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
El propósito de esta inspección, de manera resumida, es averiguar más sobre las razones que tuvieron nuestros pacientes de UNM de haber escogido visitar el Departamento de Emergencia o Cuidado Urgente. Nuestras metas a largo plazo, por ejemplo, serían posiblemente abrir más clínicas o extender nuestros horarios existentes en las clínicas. Usando estos datos nosotros trataremos de averiguar cómo podríamos proveer mejor cuidado de salud para usted.

Gracias por estar de acuerdo en completar esta inspección. Toda la información, incluyendo su número de registro medico, será confidencial y será solo visto por profesionales del cuidado médico.

1. ¿Cuál es su número de registro médico? ______________________________

2. ¿Por qué vino a la sala de emergencias (ER)? _______________________
   __________________________________________________________________

3. ¿usted consideró ir a otro lugar aparte de ER? _______________________
   __________________________________________________________________

4. ¿Usted tiene su propio Doctor o alguna clínica que visite regularmente? (un “doctor principal/primario”)
   □ Si □ No

5. ¿A qué tipo de clínica pertenece usted?

   □ Práctica Familiar (todas las edades)

   □ Medicina Interna (solo adultos mayores de 18 años)

   □ Obstetricia/Ginecología o salud de mujeres (solo para mujeres)

   □ Pediatría (solo para niños de 0 – 18 años de edad)
6. ¿Usted sabe qué tipo de doctor es su doctor principal?

□ Si □ No

Si, sí:
□ Doctor en la comunidad (no en UNM, Lovelace, Presbyterian etc)
□ Doctor residente (practicante)
□ Doctor encargado (facultad en UNM)
□ Enfermera “Practitioner”
□ Asistente Médico (PA)

7. ¿Tiene seguro médico?

□ Si □ No

8. ¿Usted esta con “UNM Care”?

□ Si □ No
8a. Si no, por favor marque qué tipo de seguro o plan de pago tiene usted:

- □ Medicaid
- □ Medicare
- □ HMO basado en plan de pago
- □ Propio pago
- □ Sin seguro o no puede pagar

9. Si usted no está con UNM care, sin seguro o pagado por sí mismo: ¿usted sabe cómo conseguir una cita en una clínica de cuidado primario?

- □ Si  □ No

9a. ¿Su seguro ha vencido o expirado, o usted está esperando por la aprobación de la cobertura de su seguro?

- □ Seguro vencido o expirado
- □ Esperando por cobertura
- □ No por mucho tiempo legible para cobertura (mudarse, cambiar de trabajo, perdida de trabajo etc)
9b. Si usted pudiera hacer una cita en una clinica de cuidado primario nocturnas, usted iría alla si no son emergencias u otras enfermedades?

☐ Si  ☐ No

11. ¿A qué hora del día/noche esta usted completando esta inspección?

☐ Un día hábil de la semana

☐ Fin de semana

Entre:

☐ 8am – 4pm

☐ 4pm – 9pm

☐ 9pm – Media Noche

☐ Media noche – 8am

12. Si usted no tiene seguro o no esta asegurado, cómo paga o cómo pagaría por su cuidado medico?
□ Pago cuando visito a un doctor

□ Plan de pago

□ Escala móvil

□ No puedo pagar

□ Otro _________________________________

13. Alguna vez ha sentido que usted no podría pagar para ir con un doctor?

□ Si  □ No

14. Calcule cuántas veces en el último año uste no vio a un doctor porque sintió que no podría pagarle:

□ Esta es la primera vez

□ Dos visitas

□ Tres visitas

□ Cuatro visitas

□ Más de cinco visitas
15. Calcule cuantas veces en el ultimo año usted ha visitado el departamento de emergencias o cuidado urgente en UNM?

☐ Esta es la primera vez

☐ Dos visitas

☐ Tres visitas

☐ Cuatro visitas

☐ Mas de cinco visitas

16. Calcule cuantas veces en el ultimo año usted ha visitado otra sala de emergencias (Presbyterian, Lovelace, etc)

☐ Esta es la primera vez

☐ Dos visitas

☐ Tres visitas

☐ Cuatro visitas

☐ Mas de cinco visitas
17. Calcule cuantas veces en el ultimo año usted ha visitado la sala de emergencias y NO ha sido atendido (por ejemplo usted se fue antes de haber sido atendido, la sala estaba muy llena, tenía que ir a trabajar, etc)

□ Una vez

□ Dos veces

□ Tres veces o mas

□ ¿Cuál fue la razón por la que no fue atendido?

18. Usted es:

□ Empleado

□ Desempleado

□ Otro (estudiante, juvilado, inhabilitado en SSI/desabilidad, etc.

19. Usted es de sexo:

□ Masculino

□ Femenino

20. ¿Cuántos años tiene? Si usted esta con niños, cuántos años tienen ellos?

__________________________________________________________________________
21. ¿Cómo describiría usted su raza o grupo étnico?

☐ Blanco, no hispano
☐ Latino o hispano
☐ Afroamericano/negro
☐ Asiático/Pacific Islander (Japonés, Chio, Vietnamita etc)
☐ Raza mixta o biracial
☐ Otro ___________________________

22. ¿Cuál es su estado civil?

☐ Soltero
☐ Casado
☐ Divorciado
☐ Separado

23. ¿Cuántas personas hay en su familia inmediata? (incluyendo esposo/a, y niños)

24. ¿Sus hijos tienen cobertura médica?

☐ Si  ☐ No
25. ¿Usted vive en el condado de Bernalillo?

☐ Si ☐ No

25a. Si no, en qué condado vive:

26. ¿Usted intentó llamar a un número de biper o al biper de su médico?

☐ Si ☐ No

Por favor conteste las siguientes preguntas de la mejor manera que pueda:

27. Si su Doctor estuviera disponible ahora o tuviera una clínica (después de horas hábiles) habría venido al Departamento de Emergencias hoy?

☐ De acuerdo

☐ De alguna manera de acuerdo

☐ De alguna manera en desacuerdo

☐ Desacuerdo
28. Si usted hubiera podido hablar con su Doctor principal, usted no habría venido hoy al departamento de emergencias?

□ De acuerdo

□ De alguna manera de acuerdo

□ De alguna manera en desacuerdo

□ Desacuerdo

29. En su opinión, su enfermedad o razón por la que vino al departamento de emergencias fue una emergencia que no podía esperar hasta mañana o su próxima oportunidad para ir a una clínica?

□ De acuerdo

□ De alguna manera de acuerdo

□ De alguna manera en desacuerdo

□ Desacuerdo

30. Hay algunas otras razones no cubiertas por esta inspección que influyeron su decisión de venir al departamento de emergencias hoy?

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________