

## Understanding Emergency Room Utilization

Alan A. Ayers, MBA, MAcc

Board of Directors, Urgent Care Association of America

Associate Editor, *The Journal of Urgent Care Medicine*

Vice President, Concentra Urgent Care

In the United States, the media frequently depicts hospital emergency services as “troubled” by:

- Decreasing public access due to hospital emergency department closures;
- Long wait times due to hospital emergency departments operating above capacity;
- Poor patient experiences and lack of care continuity due to emergency room staffing shortages; and
- Emergency rooms that are over-run with money-losing low-acuity cases.

These problems, which are evident in some hospitals and in some areas of the country, are frequently attributed to such factors as “safety net” care for patients who have no other health care options, a general lack of primary care access driving patients to the ED for low-acuity conditions, a lack of doctors offices participating in public health programs, and an aging, unhealthy population with ever-increasing medical demands.<sup>1</sup>

I live in the North Suburbs of Dallas, Texas—Sunbelt “sprawl” characterized by master planned communities, corporate office parks, big box retail stores—and emergency rooms. Within minutes of my house are multiple non-profit health system EDs, for-profit hospital EDs, specialty hospital EDs, entrepreneurial freestanding ER centers in shopping plazas, a world-renown heart hospital ED, and a nationally-celebrated children’s hospital ED. And these EDs are not just present in the community—they’re highly visible through their constant billboard, radio and direct mail advertising.

A North Dallas resident exposed to all of this ER “activity” may reach wildly different conclusions regarding emergency rooms, such as:

- Emergency rooms have excess capacity, therefore it’s necessary to aggressively advertise to attract new patients;
- Emergency rooms are not busy, therefore they advertise short waits, offer wait time service guarantees, and offer pre-registration and call-ahead services;
- Emergency rooms are hyper-competitive, therefore they strive to offer a good patient experience to win repeat business and spur positive word-of-mouth; and
- Emergency rooms welcome (and make money off of) low-acuity cases.

The depiction of emergency rooms by the media and my observations in North Dallas stand in sharp contrast—begging the question, *which view is correct?*

Outside my front door, across yet-to-be-developed prairie, I can see the emergency room at a branch campus of the Baylor University Medical Center. I frequently observe the number of cars in that ED’s parking lot, I see its patients coming and going, and I hear its ambulance and helicopter arrivals. Emergency rooms are supposed to be the provider of “last resort”—where patients go for trauma, resuscitation and hospital admissions—yet when I see a steady flow of ambulatory patients into the ER on Monday mornings, I question “why aren’t these patients going to urgent care?”

To understand what’s *really going on* with hospital EDs, I scoured the academic literature and identified about 14 articles on the topic of emergency room utilization. Follows is what I learned:

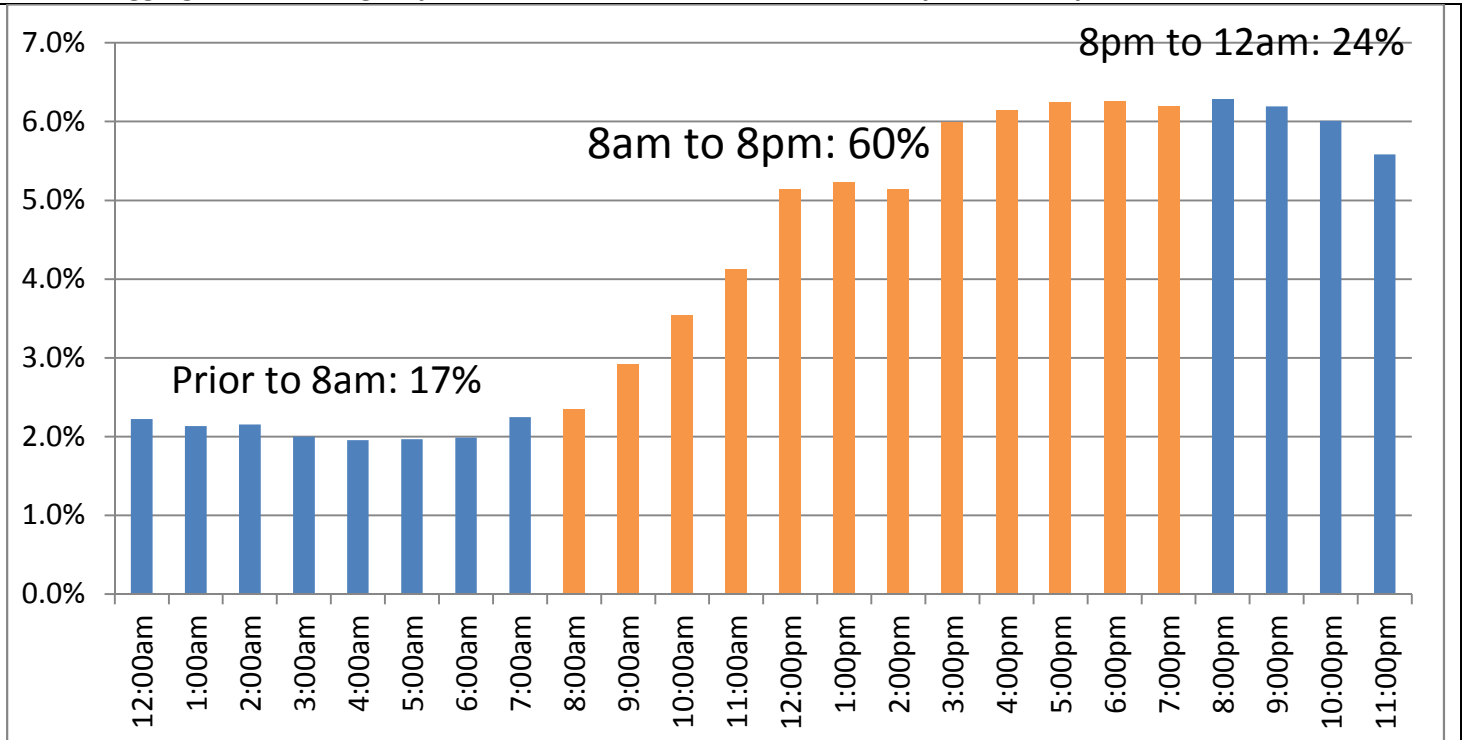
- Emergency departments, regardless of volume, go through predictable 24-hour cycles in arrivals and census, with arrivals increasing from mid-morning until noon and holding steady until midnight when they decrease.<sup>2</sup> As a result, the census at 4:00pm is typically four times as great as the census at 4:00am. Meaning—the majority of patients utilize the ER during the daytime hours. *Table 1, which averages the ER utilization curves of five academic articles,*

<sup>1</sup> Gindi, Renee M., Emergency Room Use Among Adults Aged 18-64: Early Release of Estimates from the National Health Interview Survey, Division of Health Interview Statistics, National Center for Health Statistics, May, 2012.

<sup>2</sup> Welch, Shari J. “Using Data to Drive Emergency Department Design: A Metasynthesis,” HERD Journal, Volume 5, Number 3, pp. 26-45, 2012.

illustrates that 60% of ED arrivals are during times of day that urgent care centers are typically open. The busiest days of the week are Saturdays and Mondays<sup>3</sup> (Table 2) and the busiest months are July, August and December.<sup>4</sup>

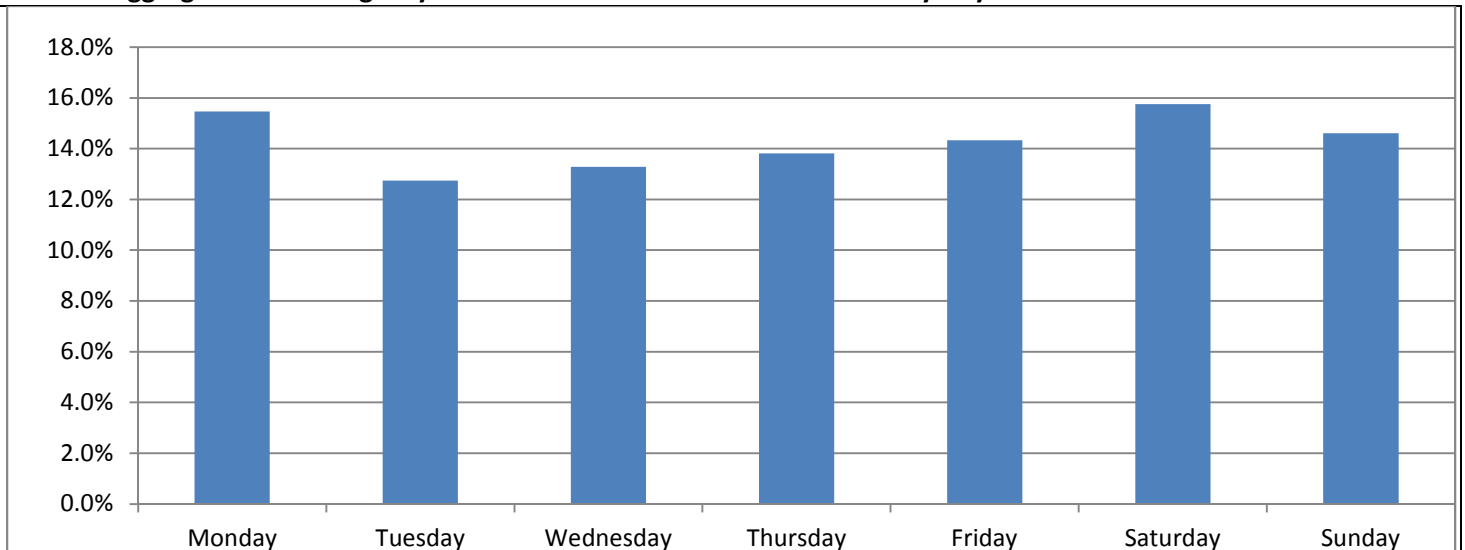
**Table 1: Aggregation of Emergency Room Arrival Data: % of Total Arrivals by Hour of Day**



**Sources:**

Welch, Shari J. "Using Data to Drive Emergency Department Design: A Metasynthesis," HERD Journal, Volume 5, Number 3, pp. 26-45, 2012. Jones, Spencer S. "Forecasting Daily Patient Volumes in the Emergency Department," Academic Emergency Medicine 2008: 15:159-170. Jones, Spencer S., "A multivariate time series approach to modeling and forecasting demand in the emergency department," Journal of Biomedical Informatics, 20 February 2008. 2010 Emergency Department Pulse Report: Patient Perspectives on American Health Care, Press Ganey Associates, 2010. Emergency Room Use, Washington State Hospital Association, October, 2010.

**Table 2: Aggregation of Emergency Room Arrival Data: % of Total Arrivals by Day of Week**



**Sources:**

Jones, Spencer S. "Forecasting Daily Patient Volumes in the Emergency Department," Academic Emergency Medicine 2008: 15:159-170. Jones, Spencer S., "A multivariate time series approach to modeling and forecasting demand in the emergency department," Journal of Biomedical Informatics, 20 February 2008. 2010 Emergency Department Pulse Report: Patient Perspectives on American Health Care, Press Ganey Associates, 2010. Emergency Room Use, Washington State Hospital Association, October, 2010.

<sup>3</sup> Jones, Spencer S. "Forecasting Daily Patient Volumes in the Emergency Department," Academic Emergency Medicine 2008: 15:159-170.

<sup>4</sup> "Managing Patient Access and Flow in the Emergency Department to Improve Patient Safety," Pennsylvania Patient Safety Advisory, Vol. 7, No. 4: December 2010.

- Depending on the study, in the case of 60.5%<sup>5</sup>, 62.9%,<sup>6</sup> or 67%<sup>7</sup> of ED visits, the patient arrived after business hours (defined as 8:00am to 5:00pm Monday-Friday). While that number sounds impressive—consider the breakdown of hours in a week. If there are 168 hours in a week and “business hours” are defined as 40 of those hours—that means 24% of hours in a week are “business hours” and 76% are “after business hours.” If 33% to 40% of cases are arriving during the 24% of hours in the week that are “business”—then a disproportionate number of ED cases can be said to arrive at times primary care offices are open.
- Emergency department overcrowding is not attributable to an excess of low-acuity cases, but rather, the complexity of services a hospital offers and the availability and demand for diagnostic resources including lab and imaging in the emergency department.<sup>8</sup> High hospital occupancy rates, high ED to hospital admissions rates, high elective surgical volume and other indicators of demand for inpatient resources throughout the entire hospital—inhibiting the movement of patients from the ED to inpatient beds—have been identified as causes of ED throughput issues resulting in long wait times.<sup>9</sup>
- Up to two-thirds of patients who utilize the emergency room for non-emergent conditions report having a regular source of medical care at a physician’s office.<sup>10</sup> Many patients prefer to use hospital emergency departments due to their 24-hour, 7-day a week walk-in, no appointment necessary convenience—especially if they are unable or unwilling to take time off work to see a physician.<sup>11</sup> Patients perceive the ED as a provider of high-quality care, staffed by skilled clinicians with access to all of the hospital’s advanced clinical capabilities. The lack of incentives for primary care delivery, as well as the lack of disincentives to use ER services for non-emergent conditions, has also been identified as a factor in the use of emergency rooms for non-emergent conditions.<sup>12</sup>
- Far from perceiving emergency departments as money-losers, hospitals have little financial incentive to discourage ED use by privately insured and Medicare patients—including for non-emergent cases.<sup>13</sup> Since EDs must maintain equipment and personnel to handle whatever comes through the door (i.e. natural disasters and terrorist attacks) the incremental cost of one additional visit to the ED can be quite low. Medicare and privately insured patients accounted for 59% of the total volume and 60% of the volume increase in ED utilization between 1995 and 2008 versus only 15% of the total volume and 9% of the volume increase for the underinsured. It’s the privately insured and Medicare beneficiaries who are driving much of the increase in ED utilization.
- Groups who use the ED most frequently—children under Age 1, seniors greater than Age 75, nursing home residents, the homeless, and Medicaid/SCHIP beneficiaries—constitute less than a third of total ED visits, with the privately insured and Medicare making up the other two-thirds. The most frequent users of hospital emergency rooms are those with complex physical and mental health issues, who are covered by Medicare and/or Medicaid, and who use the ED to supplement rather than substitute other care they’re receiving elsewhere.<sup>14</sup> Across age groups, Medicaid patients incur the highest average charges of any payer category, reflecting the greater complexity of their health issues.<sup>15</sup> Because many urgent care centers cannot meet Medicaid contracting requirements or survive on Medicaid reimbursement, Medicaid patients may be left with few *convenient* alternatives to primary care other than the ED.

<sup>5</sup> National Hospital Ambulatory Medical Care Survey: 2010 Emergency Department Summary Tables (Table 4: Wait Time at Emergency Department Visits, United States, 2010).

<sup>6</sup> Centers for Disease Control and Prevention, <http://www.cdc.gov/nchs/data/nhsr/nhsr007.pdf>

<sup>7</sup> Pitts, Stephen R., et. al, “Where Americans Get Acute Care: Increasingly It’s Not At Their Doctor’s Office,” *Health Affairs*, Vol. 9, No. 1, pp. 1-10 (September, 2010).

<sup>8</sup> Jones, Spencer S., “A multivariate time series approach to modeling and forecasting demand in the emergency department,” *Journal of Biomedical Informatics*, 20 February 2008.

<sup>9</sup> 2010 Emergency Department Pulse Report: Patient Perspectives on American Health Care, Press Ganey Associates, 2010.

<sup>10</sup> Cunningham, Peter, “The Use of Hospital Emergency Departments for Nonurgent Health Problems: A National Perspective,” *Medical Care Research and Review*, Vol. 52, No. 4, pp. 453-474 (1995).

<sup>11</sup> California HealthCare Foundation, *Overuse of Emergency Departments Among Insured Californians*, October, 2006.

<sup>12</sup> Potentially Avoidable Emergency Room Use, Washington State Hospital Association, February, 2011.

<sup>13</sup> Nonurgent Use of Hospital Emergency Departments, Statement of Peter Cunningham, Ph.D., Before the U.S. Senate, Center for Studying Health System Change; May 11, 2011.

<sup>14</sup> DeLia, Derek, et. Al. “Emergency Department Utilization and Capacity,” Robert Wood Johnson Foundation, Research Synthesis Report No. 17, July, 2009.

<sup>15</sup> Emergency Room Use, Washington State Hospital Association, October, 2010.

## **Conclusion**

Based on the published academic research, it's clear that many suburban hospital emergency departments like those in North Dallas rely on a steady flow of insured patients, who use the ED for low-acuity conditions during business hours despite primary and urgent care being available. The good news is that by educating these patients about the availability and benefits of urgent care—extended operating hours, lab and x-ray capabilities on-site, skilled clinicians, lower co-pays and shorter wait times—many patients who chose the ED today are available for conversion to urgent care. The key is successful marketing of the urgent care center as the facility most appropriate for minor episodic medical conditions.