

**Hospital Name:**  
Miami Valley Hospital

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2006 YTD ED Volume: 95,878  
Growth from 2005: 1%  
Total Staffed Hospital Beds: 698  
Acute ED Beds: 57  
Fast Track? No  
Clinical Decision Unit? No

**Problem to be Resolved:**  
High diversion hours

**Key Words:**

- Forecasting
- Peak-level staffing
- ED visits
- Diversion

**Lessons Learned:**  
By aligning staffing with demand, Miami Valley Hospital was able to speed the process of moving an admitted patient from the ED to an inpatient unit.

**Reason for Change:**

A common misconception is that ED visits are random and unpredictable, and therefore one cannot plan for such visits. However, ED leadership at Miami Valley Hospital recognized that not only is it possible to observe trends in ED visits, it is a necessary component to effectively running an ED. Specifically, an ED manager should have a method of predicting both walk-in and ambulance arrivals by hour of the day for each day of the week, as well as ED admissions. Forecasting such information allows one to properly schedule staffing.

**Implementation:**

Miami Valley Hospital used Microsoft Excel to track data and observe trends; so that they could predict future ED visits. At first they just looked at demand in the ED, but then looked at the overall hospital's demand and workload numbers. They also forecast scheduled surgeries, elective inpatients, and patients who originally came to the facility as outpatients but who were admitted. Because the ED does not operate entirely on its own, but rather is affected by each other department in the hospital, it was necessary to look at demand in a variety of areas in order to truly understand what was going on in the ED.

After ED leadership examined the data and had a good understanding of ED demand, they made a number of changes to the ED staff to properly use what they had learned. Two of the most effective changes were to increase the clerical staff and patient care technicians responsible for transferring patients out of the ED and putting in place a new interactive voice response telephone system, which notified staff when a patient was discharged from a specific room. This change alone reduced the bed turnaround time to a couple of minutes, down from five or six hours.

**Results/Impact:**

When this initiative was started in 2002, Miami Valley Hospital diverted ambulances away from its ED 2,010 hours throughout the year. In 2003, they were able to reduce diversion to 860 hours, and further to 792 hours in 2004, despite facing a greater patient volume.

After changing ED staffing to better correspond with actual ED demand, the average length of time from when a decision to admit a patient is made until that patient is in an inpatient bed decreased from three hours to 1.7 hours.

Miami Valley Hospital recognized that the ED does not operate in a vacuum, but rather interacts with other departments constantly. Hospital leaders feel that if they had not considered data for the entire facility, but instead just looked at the ED, the results of this

project would have been quite different. Instead of improving throughput and reducing diversion hours, the ED might have faced greater constraints to patient throughput and diversion hours might actually have increased.