

**Hospital Name:**

Lehigh Valley Hospital and Health Network

**Address:**

Cedar Crest & I-78  
Allentown, PA 18105  
(610) 402-2273

**Contact:**

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FY 2006 ED Volume: 78,662  
Growth from 2005: 3.4%  
Total Staffed Hospital Beds: 566  
Acute ED Beds: unknown  
Fast Track: No  
Clinical Decision Unit: No

**Problem to be Resolved:**

High levels of ambulance diversion

**Key Words:**

- Diversion
- Financial incentives
- Electronic bed boards

**Lessons Learned:**

The concept of centralization was important to implementing successful changes. Rather than focusing on just the ED, Lehigh Valley Hospital's management found success by centralizing admissions and bed management processes for all three hospitals in the system.

Lehigh's leadership feels that the new bed-management software that they are using has increased employee accountability, as data is now tracked more efficiently. By tying financial incentives to throughput data, Lehigh has been able to sustain the effects of these improvements.

**Reason for Change:**

Lehigh Valley Hospital and Health Network spent between 170 and 220 hours on diversion each month in 2003. Hospital leadership looked for changes and solutions that could be applied to each of the three hospitals in the organization to help reduce ambulance diversion.

**Implementation:**

Lehigh's improvement project was sponsored by the COO and chief medical officer and led by the senior vice president for nursing, vice chairman of the ED, and the vice president for operations. From the start, the project had support from senior management throughout the organization.

The focus of Lehigh's changes has been on bed management. All issues relating to bed management, including inpatient admissions, discharges, and transfers were redesigned to be handled by the administrator of public logistics/patient access and the patient logistics department.

Bed management is monitored by new electronic bed boards, which display real-time updates of the status of each bed in the hospital. Lehigh now has an average bed turnaround time of about 60 minutes, compared to the 210 minute average prior to this technology.

The software also generates reports which identify where there are bottlenecks and in what areas staff are underperforming.

Lehigh also added six new FTE positions to the transport team, who together have significantly increased the speed of notification of discharges. Discharge notification delay time has now essentially been eliminated, where it once averaged about 74 minutes.

**Results/Impact:**

In the first year after these changes were made, Lehigh decreased time spent on diversion by 30 percent. At the same time, increased efficiency allowed the hospital to increase admissions by eight percent, without adding any new beds. Patient satisfaction has also increased significantly, with Press Ganey scores going from the 30<sup>th</sup> to 98<sup>th</sup> percentile.