



## If You Have Pneumonia, Which Emergency Department Will Give the Timeliest Care?

A team at Emory University School of Medicine looks at the care provided by two Atlanta hospital EDs

### SUMMARY

A team at Emory University School of Medicine analyzed selected data for pneumonia patients treated at two Atlanta hospital emergency departments (EDs) serving disparate economic and ethnic populations.

The purpose was to determine if the two groups of patients received the same level of care and, if not, to identify barriers to equivalent performance by the EDs. The team conducted the study in 2008–2011 using records of patients previously treated over a 16-month span.

The two hospitals were Grady Memorial Hospital and Emory University Hospital. Both are teaching facilities for the medical school and, thus, draw from the same physician pool. However, Grady is a large public safety-net institution with many poor, minority, and uninsured patients while Emory has a broader mix of patients and payers.

For the comparison, the team used pneumonia treatment metrics reported by [Hospital Compare](#), a consumer-oriented website of the federal Centers for Medicare & Medicaid Services (CMS). Time lapse from diagnosis to antibiotics was the key metric examined.<sup>1</sup>

The team analyzed the medical charts of 182 pneumonia patients treated by the Grady ED and 183 pneumonia patients seen at the Emory ED. They randomly selected the Grady patients to represent the approximate payer mix of the hospital's service population and matched with Emory patients similar in age, gender, race, triage score, and provider.

### Unmet Study Goals

The ED pneumonia comparison was the first part of what was designed to be a two-part study. The team had planned to use additional data from the same two EDs to examine

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<sup>1</sup> This particular metric has since been dropped from Hospital Compare, according to a study team member.

the potential impact of *pay for performance*<sup>2</sup> on safety-net hospitals—hence RWJF’s original title for the project (“Understanding the impact of pay for performance on safety net facilities”).

The team was concerned that the introduction of pay for performance could cause safety-net hospitals to shift their limited resources away from conditions not subject to financial incentives but, nevertheless, prevalent in underserved populations (such as HIV infection, schizophrenia, sickle cell anemia, and hypertension).<sup>3</sup>

This second part of the research plan was not accomplished, the result of difficulties collecting necessary hospital/patient data within the allotted project time period. Grady was particularly challenging. At the time of the study, the hospital used paper charts and stored them offsite, making data collection a longer process than expected, according to the team. Grady now has an electronic medical record system.

## Findings

In November 2011, the team reported the following to RWJF:

- The Emory University Hospital ED performed significantly better than the Grady Memorial Hospital ED on measures of pneumonia treatment despite the hospitals’ use of the same physician pool. Towards the end of the study, the team identified improvements in Grady’s performance.

Time to triage, time to bed, time to see nurse and physician, time to X-ray, and time to antibiotics were all significantly longer at Grady.

Elaborating in an interview, Leon L. Haley, MD, MHSA, chief of emergency medicine for the Grady Health System, an associate professor at Emory, and one of the study’s principal investigators, provided the following information:

- The two hospitals differ in ways that affect patient care. For example, Grady Memorial has many more patients than Emory, and its patients have more complicated social determinants of health.
- Some Grady patients came to the ED with complaints and symptoms not associated with pneumonia, resulting in a delayed diagnosis and missed time-to-antibiotics target.

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<sup>2</sup> Pay for performance is a strategy to improve the value and quality of health care. While implemented systems vary in details, the essence is that providers receive compensation based on how well they meet targeted performance measures.

<sup>3</sup> At the time the study was designed, there was a proposal to utilize the Hospital Compare metrics in pay-for-performance programs, according to Leon H. Haley, MD, MHSA, one of the study’s principal investigators. However, he states that CMS has since moved away from such an approach.

“We had people coming in with very different complaints, such as foot pain, but were later found to have pneumonia too,” Haley says.

## Lessons Learned

1. Conduct dry runs of data collection before launching a study involving paper charts. While the researchers anticipated data collection would be challenging, a test run would have given them a clearer sense of the specific problems they faced at Grady. (Report to RWJF)
2. Also, be prepared for weaknesses in data warehouses of electronic medical records. The researchers found that much of the electronically collected data had to be verified, often through individual chart reviews. (Report to RWJF)
3. Scale a research project to the time and funds available to complete it. The team had to abandon the pay-for-performance component of its proposed study because of insufficient time and resources. (Project Co-Director/Haley)

## Funding

RWJF supported the project from December 2008 through August 2011 with a \$196,918 grant as part of a \$6.2 million initiative, *Targeted Solicitation on Quality Improvement and Performance Measurement*, which ran from July 2008 through July 2015. See the [Program Results Report](#) on projects related to performance measurement and its effect on disparities in quality of care. Other projects in the initiative are covered in separate Program Results Reports.

## Afterward

The study’s findings have helped improve the timeliness of care at Grady, according to Haley. “We have been able to improve because the study showed us where the differences were in the two hospital settings, and we were able to address those differences,” he says.

“The two hospitals are more equivalent in the Hospital Compare metrics now than they were when we conducted the study.”

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