

# Disparities in Trauma Care Access Raise Concern

*Data on quality of care, financing, and manpower should be used to guide the needed improvements.*

BY CHRISTINE KILGORE  
Contributing Writer

Findings from a national study of access to trauma centers vividly illustrate what many have suspected—some Americans have access to large numbers of trauma centers, while others have access to none.

Now, say leaders in emergency medicine, it's time to collect even more data and look more earnestly at how trauma care can be improved—not only by modifying the often politically driven placement of centers and transport, but also by examining and acting on issues of quality of care, financing, and manpower.

"This is very much a tip-of-the-iceberg analysis. [Access to trauma centers] is a huge issue, and it's important to get [these data] out there," said Gregory Luke Larkin, M.D., immediate past chair of the American College of Emergency Physicians' Trauma and Injury Prevention Committee. Hopefully, the analysis will generate momentum in looking at access and other related issues, he added.

"It should be just the beginning of a conversation about trauma care," said Dr. Larkin, professor of surgery, emergency medicine, and public health at the University of Texas Southwestern Medical Center at Dallas. "And it should give permission for folks to talk about it at a national level," as well as within states, he said.

The investigators of the cross-sectional study, published last month in the *Journal of the American Medical Association*, found that almost 70% of all U.S. residents had access to a level I or level II trauma center within 45 minutes, and that approximately 84% had access within 60 minutes.

While almost 43 million of these residents—most living in urban areas—had access within an hour to 20 or more level

I or II centers, almost 47 million—most in rural areas—had no such access to any centers.

Only 8% of rural residents—compared with 73% of suburban populations and 89% of urban populations—had access to level I and level II centers within 45 minutes. The percentages increased to 24%, 86%, and 95% when the time parameter was 60 minutes, the investigators reported (*JAMA* 2005;293:2626-33).

## Beyond the Obvious

The study reveals much of "what we all knew intuitively," said Jon R. Krohmer, M.D., medical director of Kent County EMS in Grand Rapids, Mich., and the ACEP liaison to the American College of Surgeons' Committee on Trauma.

It's significantly "innovative," however, because the data sources are new and because investigators evaluated access in terms of population, as opposed to land area only. The researchers also measured access in terms of "prehospital time"—the time from receipt of an emergency call to hospital arrival—as opposed to distance or pure "transport time," Dr. Krohmer said.

The investigators mainly used the January 2005 Trauma Center Inventory verified by the ACS Committee on Trauma, and the January 2005 version of the Atlas and Database of Air Medical Services.

"The study points out very graphically that there are areas that are potentially overserved, and areas that aren't served at all," said Dr. Krohmer, an attending physician at Spectrum Health and medical director of Kent County EMS, both in Grand Rapids, Mich.

So, would a level I trauma center ever be built in Big Piney, Wyoming? "That's the million-dollar question," he said. "And that's why this study should be the basis for future studies on quality of care and outcomes.

"We've asked, for instance, what is a

minimal or acceptable patient volume to support a level I center? And right now, we don't have good answers," Dr. Krohmer said.

## Accessing Solutions

In their comments, the investigators question whether the access of some Americans to multiple trauma centers may be excessive, and whether "appropriate limits" on the number of centers could increase patient volumes and thus improve the quality of care—questions that both Dr. Krohmer and Dr. Larkin said are good ones.

The authors also emphasize the finding that 27% and 28% of U.S. residents had access—within 45 and 60 minutes, respectively—to level I and II centers by helicopter only.

"This, and the fact that base helipads are more moveable ... makes them appealing as modifiable components of the trauma system," wrote Charles C. Branas, Ph.D., an epidemiologist at the University of Pennsylvania, Philadelphia, and his associates.

National leadership on trauma care issues should also be better funded and more extensive, though "at this point, states need to get their systems (better) developed," Dr. Branas told ACEP NEWS. States also need to make or strengthen arrangements for border crossings for day-to-day trauma care, he and his associates wrote.

Approximately 2%-3% of U.S. residents had access to level I and II trauma centers only via the centers and helicopters of neighboring states, the study showed. Most of the standardized interstate agreements for sharing resources, however, concern mass casualty incidents rather than

day-to-day trauma care, the investigators said.

Dr. Larkin said he agrees that more "well-institutionalized" interstate arrangements are needed. He said he worries, on the other hand, that the potential of helicopters—which he said are now too often "big billboards for hospitals"—will be overstated and used as part of a cookie-cutter approach to solving access discrepancies.

He would rather see investigators and policymakers pair the new data on access with epidemiologic data—looking, for instance, at where motor vehicle crashes (the most common cause of trauma) occur most frequently.

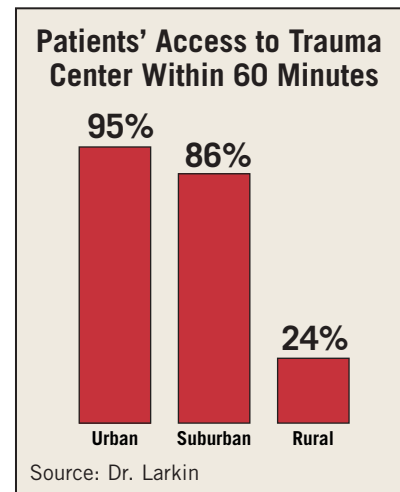
"I hope people don't misread the data and assume it's the last word on trauma care," said Dr. Larkin. "There is a whole host of other issues that need to be addressed."

These include the issue of financing trauma care, a significant portion of which goes unpaid for, and issues of manpower and varying "densities" across

the country of board-certified trauma surgeons and emergency physicians, he said.

Dr. Larkin emphasized that there's "a pretty big difference between level I and level II centers." He advised paying more attention to access within 45 minutes than to access within the 60-minute time frame, since—as the investigators also point out—the so-called golden hour cutoff is supported by little scientific evidence and is probably too long.

Because the study excluded pediatric trauma centers and did not stratify access by age, the findings understate the access problems faced by the younger population, Dr. Larkin noted. "Trauma," he said, "is the most common cause of death in the first four decades." ■



## Nonacute ED Patients Do Not Lengthen the Stay for Others

BY JEFF EVANS  
Senior Writer

NEW YORK — The notion that people who come to the emergency department with a less-than-acute health problem are an important cause of overcrowding there is probably not true, Michael J. Schull, M.D., reported at the annual meeting of the Society for Academic Emergency Medicine.

Administrators, politicians, researchers, and physicians often blame low-acuity patients for worsened emergency department (ED) crowding. Plans to reduce ED overcrowding include diverting ED patients with health problems that are not acute to places such as fast-track emergency care centers or primary care clinics.

But it is unknown if non-acutely ill or injured patients are actually responsible for extended lengths of stay for patients with more acute conditions, said Dr. Schull, an emergency physician at the Institute for Clinical Evaluative Sciences at Sunnybrook and Women's College Health Sciences Centre, Toronto.

With his colleagues, Dr. Schull analyzed the assumption that patients with less urgent health problems contribute to ED overcrowding by reviewing consecutive 8-hour intervals in an administrative data set that included all visits to all high-volume EDs in Ontario during 2002-2003.

Overall, the investigators analyzed 4.1 million visits to 110 EDs (16 teaching and 94 community) that had patient volumes ranging from 13,000 to 81,000 per year.

He classified ED patients as in need of acute care if they were admitted to the hospital; at the other end of the spectrum were patients who, arriving at the ED under their own power, were considered not in need of acute care; they received a score of 4 or 5 on the Canadian Triage & Acuity Scale, and were later discharged. All other ED patients were deemed to have health problems in medium need of urgent care.

A patient's entire length of stay in the ED was credited to the 8-hour interval in which he or she arrived, even if the stay extended into the next interval.

Dr. Schull did not find that the EDs were able to reduce

the collective length of stay of patients with medium or highly acute problems when fewer patients with non-urgent problems were present.

For every new patient with a non-acute problem, the combined length of stay for patients with medium and highly acute problems increased by only 0.6 minutes.

Each new patient with a highly acute medical problem increased the total length of stay for others with urgent or moderately acute problems by 7 minutes.

"Those [times] are really meaningful when you think of it in terms of what the actual arrival rates of these patients are," he added.

During a typical 8-hour interval, a median of 16 new low-acuity patients arrived at an ED, resulting in an average increase in the length of stay of medium- and high-acuity patients of 9.7 minutes (4% increase), which is not clinically significant, Dr. Schull said.

A median of three new high-acuity patients arrived at an ED during the 8-hour interval, increasing the mean length of stay of medium- and high-acuity patients by 21 minutes (9%). ■