

# Significant regional variations exist regarding proximity to burn centers

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Although nearly 80 percent of the U.S. population lives within 2 hours by ground or helicopter transport to a verified burn center, there is substantial state and regional variation in geographic access to these centers, according to a study in the October 28 issue of *JAMA*.

More than 500,000 burn injuries occur in the United States each year, causing approximately 4,000 burn-related deaths, according to the American Burn Association. In addition, more than 40,000 patients are admitted to hospitals each year for treatment of burn injury. The authors write that the delivery of optimal burn care to these patients is a resource-intensive endeavor requiring specialized equipment and experienced personnel, and that these resources are typically available only at dedicated burn centers. They add that timely access to a burn center may benefit patients. The current distribution of burn centers relative to geographic area and population is unknown, according to background information in the article.

Matthew B. Klein, M.D., M.S., of the University of Washington, Seattle, and colleagues conducted a study to estimate the proportion of the U.S. population living within 1 and 2 hours by ground or helicopter transport of a burn care facility, evaluating state, regional, and national access. The researchers compiled and analyzed information from the 2000 U.S. census, road and speed limit data, the Atlas and Database of Air Medical Services database, and the 2008 American Burn Association Directory.

The researchers found that in the U.S. in 2008, there were 128 self-

reported burn centers, including 51 verified burn centers (verified by the American Burn Association, in which the quality of burn care provided at a center is assessed and confirmed). A total of 782 helipads and 804 helicopters served these centers. Nationally, about 25 percent of the U.S. population lived within 1 hour by ground transport of a verified center; 46.3 percent lived within 2 hours; and 67.7 percent lived within 4 hours by ground transport of a verified burn center.

"By air transport [helicopter], 53.9 percent and 79.0 percent of the population lived within 1 and 2 hours, respectively, of a verified center, and 75.3 percent lived within 1 hour and more than 96.4 percent lived within 2 hours of any self-reported center," the authors write. They add that one-third of the U.S. population must be transported by air to reach a verified burn care center within 2 hours.

The researchers also found that there was significant regional variation in access to verified burn centers by both ground and rotary air transport. "The greatest proportion of the population with access was highest in the northeast region and lowest in the southern United States," they write.

"The variation in baseline geographic access rates found in this study may be an influential predictor of optimal regionalization strategy. For states and regions with a relatively high baseline rate of access, the best strategy for improving access and reducing time to definitive care may involve optimization of air and ground emergency medical service systems. For states and regions with a relatively low baseline rate of access, the best strategy may involve construction or verification of new regional burn care facilities."

"While the optimal distribution of burn centers relative to population and area remains to be determined, these data provide important information about population access that may be used to guide resource allocation in burn care," the authors conclude.

More information: *JAMA*. 2009;302[16]:1774-1781.

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