

CLOSING THE GAP ON THE ACTUAL NUMBERS OF LIGHTNING CASUALTIES AND DEATHS

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1. OBJECTIVES

To find out as nearly as possible how many lightning deaths and casualties occur in Colorado. At the time of an earlier study on Colorado lightning deaths and casualties, emergency room lightning visits were not available. Now that emergency room data are available for analysis, we believe we are better able to approach the actual numbers of lightning casualties.

2. BACKGROUND

The main source of data on the number of lightning casualties in the United States is National Oceanic and Atmospheric Administration's (NOAA) Storm Data. NOAA's data are based largely on newspaper clippings. Most researchers have concluded that these data underreport the actual numbers of deaths and injuries. A study of Colorado lightning casualties for the years 1988 to 1991 (Lopez et al. 1993) revealed that Storm Data underreported deaths by 28% and injuries by at least 42%. That study utilized the Colorado Department of Public Health and Environment (CDPHE) data on death certificates and the Colorado Health and Hospital Association (CHA) data on inpatients with lightning injuries.

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3. METHODS

Data for the years 1993 through 1995 were obtained from the following sources: CDPHE death certificates; CHA inpatient database; Colorado hospital emergency room databases and records. These data were compared with data for the same period from Storm Data and from newspaper clippings.

4. RESULTS

The number of lightning casualties for the years 1993 through 1995 from CHA were 100 (29 hospital inpatients and 71 emergency room visits). The numbers of deaths for the same period were 9 (confirmed by both CHA and CDPHE data). These numbers are significantly larger than numbers found in Storm Data (51 injuries and 8 deaths) and from newspaper clippings (53 injuries and 7 deaths).

5. CONCLUSIONS

We at the Centura Health Lightning Data Center have analyzed several databases in an attempt to learn how many people are injured or killed by lightning in Colorado. Until recently, the only source for the numbers of lightning casualties was NOAA's Storm Data. Lightning researchers (medical and meteorological) have utilized Storm Data believing the numbers were underreported. In an earlier study where emergency room numbers were not available, Storm Data was found to

underreport injuries by 42% and deaths by 28%. In this study we were able to obtain for the first time data on many Colorado emergency room patients, as well as inpatients and deaths. Not surprisingly, the numbers of lightning injuries are underreported by 49% (51 versus 100); the number of deaths by 11% (8 versus 9).

6. REFERENCE

Lopez R.E., R.L. Holle, T.A. Heitkamp, M. Boyson, M. Cherington, and K. Langford, 1993: The underreporting of lightning injuries and deaths in Colorado. *Bull. Amer. Meteor. Soc.*, 74, 2171-2178.