Immediate and One Year Survival of Sudden Death Victims in Southern New Jersey: 1996-2000

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Introduction
Most studies report the sudden death (SD) survival to hospital discharge. We analyzed a one year survival and neurological outcomes in Southern New Jersey in 1996-2000.

Methods
We used the database of mobile intensive care units for the total numbers of SD, response time and initial survival. For each initial survivor (to hospital admission), we searched the UB-92 database for the date of hospital discharge, and diagnoses codes (ICD-9-CM 348.1) for anoxic brain injury. We used New Jersey State death registration and Internet based datasets (http://www.ancestry.com and http://ssdi.genealogy.rootsweb.com/) for the date of death.

Results
Overall, there were 1597 cases of SD. Not found were 26 people (1.63%).
Initial survival ranged between 15% in 2000 and 19% in 1997. Survival to hospital discharge, taken as a percent of the initial survivors, decreased from 44% in 1997 to 22% in 2000. In relation to all SD victims, survival to discharge decreased from 7.2% to 2.4%, respectively. On discharge from the hospital 19% to 50% of people had the diagnosis of anoxic brain damage.
In patients with ventricular fibrillation, survival to discharge was 41% in 1996, 46.7% in 1997, 40.7% in 1998, 37.5% in 1999 and 17.4% in 2000. The response time increased from 6.6 minutes to 8.1 minutes. Correlation coefficient between in-hospital survival and response time was = 0.73. Percent of people discharged with neurologic damage increased from 38% to 50%.
Patients who survive to discharge, have good chances to survive to one year (76%).
Initial survival was 29.2% in shockable and 7.5% in non-shockable rhythm (p<0.001).
Survival to discharge was 11.3% versus 1.6%, and survival to one year was 9.6% versus 0.7%, respectively (p<0.001 for all).
Overall, neurologically favourable one year survival rate was 2.3% of all SD victims.

Conclusions
One year survival of SD victims without neurologic deficits is low. In South Jersey the survival rate did not improve over the five years studied. Not only initial (pre-hospital) mortality, but also "delayed" (in-hospital mortality) increases with increase of response time.
Additional data and new strategies may result in improvement of these outcomes.