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Epidemiology of Electrocution Death Identified by Flood-Related Surveillance During the Worst Flood Disaster in Thailand, 2011

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BACKGROUND: Flood crisis had ravaged Thailand during August-December 2011, affected over 5.1 million populations. Of 919 deaths reported, 128 died from electrocution which was unprecedented before the disaster.

This study describes causes of electrocution deaths and risk groups and prevention measures.

METHODS: A special surveillance system was established at the beginning of flood disaster to monitor causes of flood-related deaths. Data were obtained from Ministry of Interior and Forensic Department of hospitals in Bangkok, then asked health officers in flood areas to further investigate the event or we interviewed family members of the fatal cases. Definition of electrocution death was a person who died of an electric shock in Thailand's flooding area during August-December 2011.

RESULTS: Of 919 flood-related deaths, 83.4% were drowning, followed by electrocution (14.6%). Detailed information was available in 92 electrocution deaths. Median age was 47 years, male was 4 times higher than female. Seventy-seven percent died in household and 14.1% on street. Staying in capital city and neighboring provinces increased risk of electrocution deaths compared to rural provinces (RR=4.1; 95%CI=2.5-6.7). Major cause was intentional touched electric devices while body wet (36.5%), followed by staying within 1.5 meters distance from electric source (14.9%). Almost all (96%) electrocution cases did not shut off circuit breakers in houses.

CONCLUSIONS: The number of electrocution death during the great flood in Thailand 2011 was significantly high in urban cities where residents did not allow electrical authority to cut off the power. Most died in house while touching electric devices. This information was immediately communicated to public and stakeholders to design innovative and proper interventions. The number of deaths had declined followed intensive risk communication through media.

KEYWORDS: electrocution death, flood disaster, circuit breakers