From May through September of 2011, Dallas County experienced a record-breaking total of 71 days of temperatures $\geq 100^\circ$F, including 40 consecutive days $\geq 100^\circ$F, the longest number recorded for the County.

Seasonal public health efforts to prevent heat-related illnesses (HRI) have typically emphasized use of air-conditioning, limiting time outdoors, checking on elderly persons, and staying hydrated. Prevention of HRI remains challenging, however, and in 2011 the County recorded the highest number of HRI deaths (31) since 1998. The Dallas County Department of Health and Human Services (DCHHS) conducts seasonal HRI surveillance, enabling further assessment of the characteristics and contributing factors of HRI deaths in Dallas County.

The DCHHS seasonal HRI surveillance program obtains data regarding HRI cases through reports received from the county Medical Examiner’s (ME) office, hospital infection prevention offices and syndromic surveillance system databases. Emergency department visits for chief complaints related to HRI were captured from 18 area hospitals through the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE). Details regarding contributing factors of HRI deaths were extracted from ME reports. Characteristics of HRI illnesses and deaths from May through September 2011 were analyzed using SAS 9.2.

Results: From May through September 2011, 753 HRI cases were recorded in Dallas County, including 31 HRI deaths. Of the 722 HRI cases which did not expire, 75% (548) occurred in males, 9% (63) occurred in individuals who were less than 18 years old, 48% (444) occurred in individuals between the ages of 18 and 50, and 27% (216) occurred in individuals over the age of 50. Heat cramps accounted for 42% of all HRI, heat exhaustion 53%, and heat stroke 5%. The highest proportions of heat cramps (58%) and heat exhaustion (72%) occurred in persons 18 to 50 years of age. Heat stroke was most often seen in individuals over the age of 50, which accounted for 49% of the cases. Of the HRI deaths, 64% (22) occurred in males. Individuals over the age of 50 accounted for 71% (22) of the HRI deaths and persons between 18 and 50 years of age accounted for 26% (8). Most common factors contributing to HRI deaths included: 52% (16) having no air conditioner, 26% (8) having an air-conditioner but not using it, 6% (2) being involved in outdoor work-related activities, 6% (2) being left unattended in a vehicle, 3% (1) being left unattended in a vehicle and having no air conditioner, and 3% (1) being left unattended in a vehicle and having an air-conditioner but not using it.

CONCLUSIONS

Known risk factors for mortality from HRI have included persons of older ages and lack of use of air conditioning. The unexpected numbers of deaths which occurred in persons who possessed air-conditioning units, but deliberately did not use their units, emphasizes the challenges in public health prevention messaging for those at greatest risk.