

# INJURY UPDATE

A Report to Oklahoma Injury Surveillance Participants\*

May 31, 2012

## Heat-related Deaths in Oklahoma, 2011

In the United States, approximately 400 people die each year from extreme heat and 200 additional deaths occur with heat as a contributing factor. Heat-related illness includes conditions resulting from hyperthermia. These conditions range from heat cramps and heat exhaustion to heat stroke. Hyperthermia is a condition in which improper thermoregulation causes the body's temperature to increase. In the cases where hyperthermia was listed as a contributing factor, cardiovascular disease was the number one cause of death. Numerous factors inhibit the body's ability to cool itself during extremely hot weather. High humidity prevents sweat from evaporating quickly, subsequently preventing the body from quickly releasing heat. Other conditions that can limit the body's ability to regulate temperature include advanced age and young age (children ages 0-4), obesity, dehydration, fever, poor circulation, heart disease, sunburn, prescription or illicit drug use, and alcohol use.

According to data from the Oklahoma Office of the Chief Medical Examiner, 33 heat-related deaths occurred in Oklahoma from May to September 2011. Persons ranged in age from 3 to 91 years of age; the average age was 52 years. Deaths increased with increasing age. Eighty-two percent of persons were male and 18% were female. Among males, 67% were age 45 and older; 26% were age 65 and older. Among females, half of the deaths were among those 65 and older (Figure 1). Seventy-three percent of persons were white, 9% African-American, 9% Hispanic, and 9% Native American.

For cases with a known date of injury (26), the number of cases peaked during the week of July 31 to August 6. The weekly average high temperatures in central Oklahoma ranged from 77°F in May to 109°F in August (Figure 2).

Figure 1. Heat-Related Deaths by Age and Sex, Oklahoma, 2011

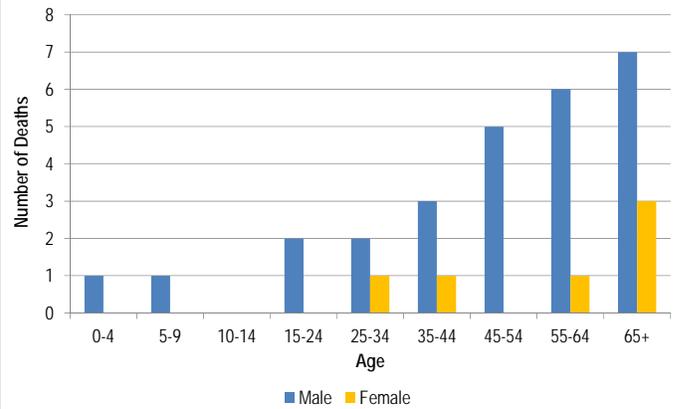
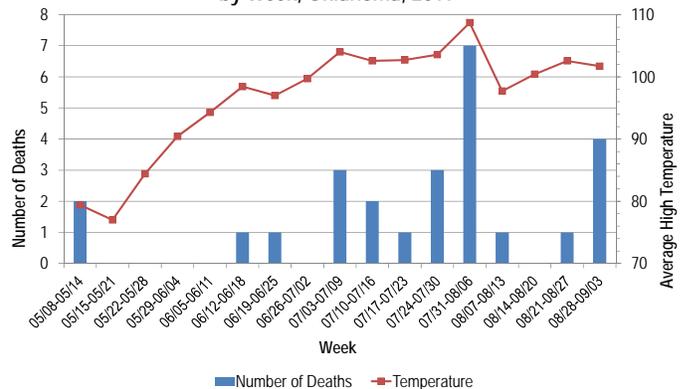


Figure 2. Heat-Related Deaths and Average High Temperatures\* by Week, Oklahoma, 2011



\*The average high temperature for the week was used for Norman, OK, because it is centrally located.



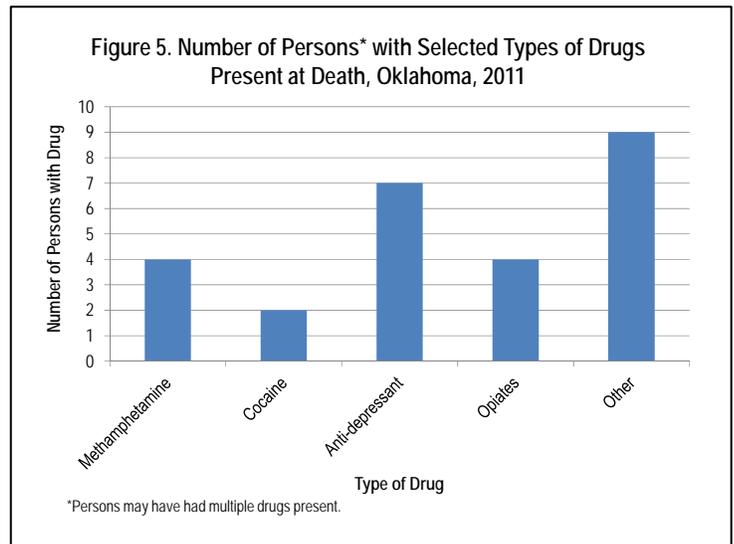
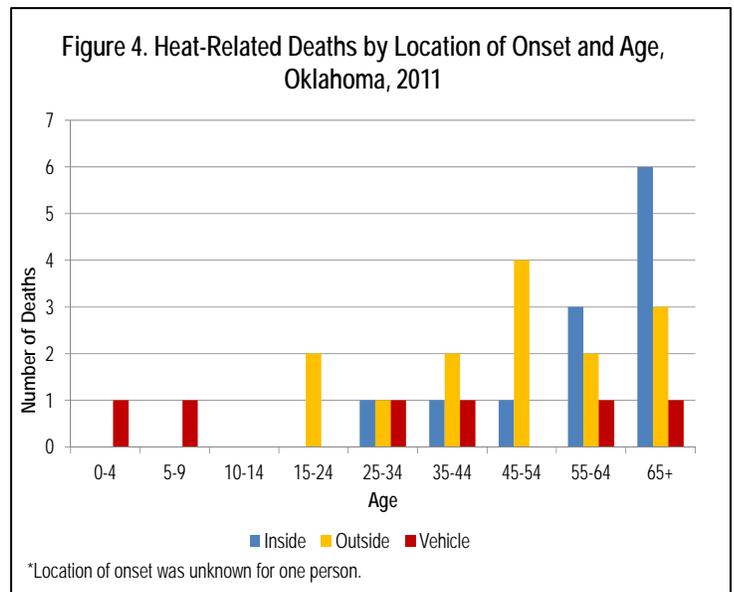
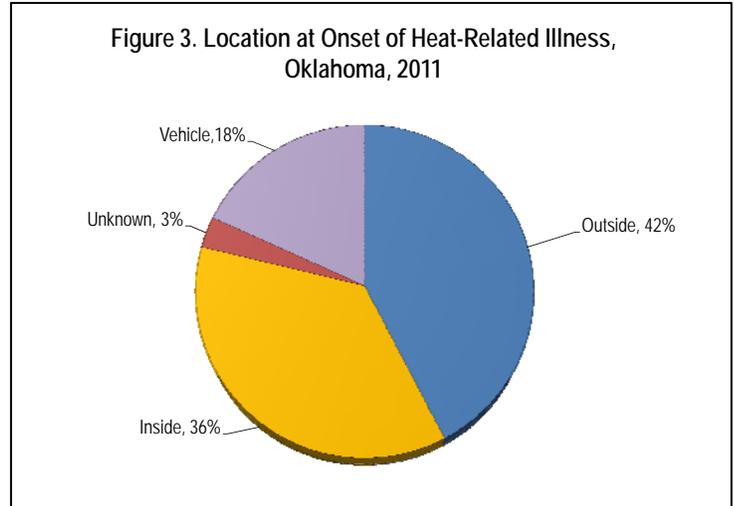
\*The INJURY UPDATE is a publication of the Injury Prevention Service, Oklahoma State Department of Health. This and other IPS information may be obtained from the Injury Prevention Service, Oklahoma State Department of Health, 1000 N.E. 10th Street, Oklahoma City, OK 73117, 405-271-3430 or 1-800-522-0204 (in Oklahoma). IPS publications are also available at <http://ips.health.ok.gov>.

The location at onset of the heat-related injury was known for 32 cases. Forty-two percent were outside at onset of injury, 36% were indoors, and 18% were in vehicles (Figure 3). Five deaths were work-related. Two persons died while incarcerated. The majority (53%) of persons 55 and older were inside at the onset of injury (Figure 4).

Overall, 30% of persons tested positive for medications and/or illicit drugs (Figure 5). Chronic illnesses were present in 18 (55%) cases. Most of these people had more than one chronic illness. The most frequently occurring illnesses were hypertension (11), diabetes (8), and chronic obstructive pulmonary disease (5). Mental illness was present in 6 (18%) cases. According to body mass index (BMI) scores, 48% of adults who died were overweight or obese, 29% were normal weight, 10% were underweight, and the BMI was unknown for 13%. Oklahoma and Tulsa Counties recorded the highest number of deaths followed by Cleveland County (Figure 6).

**CASE BRIEFS**

- A child was found in the trunk of the family car after he had been missing for quite some time. It was unknown how long the child had been in the trunk.
- A middle-aged male working at a drilling rig site became sick. He went to a shaded area and collapsed. Paramedics were called and transported him to the emergency room where he died.
- A middle-aged female had been sunbathing. Her husband went to check on her and found her unresponsive. Paramedics were called and she was pronounced dead at the scene.
- An older adult male had been complaining of nausea and weakness to a family member. The family member was unable to contact him and called police to conduct a welfare check. Police found the decedent in his bed. There was no air conditioning in the residence.
- An older adult female had been complaining of dizziness, but would not allow her family to call paramedics. Paramedics were eventually called and found her in bed. The air conditioning in the residence had been broken for a week. Multiple fans were at the residence, but it was unknown whether or not they were being used.





# HOT as an OVEN!

**NEVER** leave a child alone in a car—  
*even for a minute!*



Outside Temperature

91°F

Inside Vehicle  
Temperature

110°F

Within 5 Minutes

## 49 children died from heat exposure last year in the U.S.

- Dial 911 immediately if you see an unattended child in a car. EMS professionals are trained to determine if a child is in trouble.
- A car is not a babysitter – Never leave a child unattended in a vehicle, even with the windows slightly open.
- It is against the law in Oklahoma to leave your child unattended in a vehicle.

## Routines and distractions have caused people to mistakenly leave children behind in cars.

- Place an item that is to be carried from the car, such as a cell phone, purse, briefcase, or gym bag, on the floor in front of the child in the back-seat. This triggers adults to see children when they open the rear door and reach for their belongings.
- Be especially careful if you change your routine for dropping off children at daycare. Have a plan with your daycare if your child is late that you will be called within a few minutes.
- Set your cell phone or Blackberry to remind you to drop your child off at daycare.
- Set your computer calendar program, such as Outlook, to ask, “Did you drop off your child at daycare today?”

## Prevent trunk entrapment.

- Teach children not to play in any vehicle.
- Lock all vehicle doors and trunk after everyone has exited the vehicle—especially at home.
- Keep keys out of the reach of children.
- Check swimming pools, vehicles and trunks first if a child goes missing.



Oklahoma State  
Department of Health  
Creating a State of Health

Provided by: The Injury Prevention Service