

Burn Incidence and Treatment in the US: 2000 Fact Sheet

Burn Incidence

Estimate: **Over 1 million burn injuries per year.** Trend: The incidence of burn injury in the United States has declined significantly from the 2 million annual injuries estimated in the first report of the National Health Interview Survey (NHIS), drawn from 1957-61 data. As of the early 1990's, the rate of reportable burn injuries in the U.S. had declined from about 10/10,000 to 4.2/10,000. Sources: An estimate of total burn incidence is extracted and made available every 8-10 years by the National Health Interview Survey (NHIS) from data collected in its ongoing health survey of a sample of American households. The last NHIS estimate of 1.129 million burns is drawn from 1991-93 data.

Fire and Burn Deaths

Estimate: **4,500 fire and burn deaths per year.** This total includes an estimated 3,750 deaths from fires and 750 from motor vehicle and aircraft crashes, contact with electricity, chemicals or hot liquids and substances, and other sources of burn injury.

Since the respective role of flame and smoke in fire deaths is often not determined by autopsy, "burn" death totals cannot be distinguished from those which result from smoke poisoning.

Trend: Fire and burn deaths in the United States declined about 50% from 1971 to 1998. Since the U.S. population grew 25% during that period, the decline in the death rate was over 60%.

Sources: Annual survey of fire departments by the National Fire Protection Association; (to 1997) annual Vital and Health Statistics reports of the National Center for Health Statistics (to 1994).

Hospital Admissions and Emergency Department Visits

Estimates: **45,000 hospitalizations per year, about half to 125 specialized burn treatment centers and half to the nation's 5,000 other hospitals.** 700,000 annual emergency department visits @1.2 per injury. (Burn center hospitals average 200 burn admissions a year, other hospitals less than five.) Trend: Total acute hospitalizations resulting from burn injury have declined 50% since 1971. The decline partly reflects fewer repeat hospitalizations during acute treatment and more accurate coding. Burn center admissions meanwhile have doubled, increasing their share from 13 to 50% of all burn patients. Since emergency departments have only been surveyed since 1992, the outpatient burn trend is not yet clear.

Sources: Hospital admissions: National Hospital Discharge Survey (1995-98 data); Agency for Health Care Policy and Research (1990-93 HCUP-II data); DRG Handbook (1996 data). Burn Center Admissions: American Burn Association (1991 admissions data). Emergency Department visits: National Hospital Ambulatory Medical Care Survey (1992-95 data). Injuries represented in Emergency Department Visits: National Medical Expenditure Survey (1987 data).

Severity of Burn Injuries

Estimate: **The average size of a burn injury admitted to a burn center is about 14% of total body surface area (% TBSA).** (1991-93) Burns of 10% TBSA or less account for 54% of burn center admissions, while burns of 60% TBSA or more account for 4% of admissions. About 6% of burn center admissions do not survive, most of whom have suffered severe inhalation injury in fires.

Trend: Since 1965, the proportion of burn center admissions with burns of 10% TBSA or less has more than doubled, from 26% to 54%, while large burns (60% TBSA or greater) have declined from 10% to less than 4% of total admissions. This trend reflects both an absolute decline in large burn injuries and increasing recognition of the importance of specialized facilities and experience in treating significant burn injuries of all sizes.

Sources: A survey of 28 burn centers contributing data to the American Burn Association burn patient registry (1991-93); data from the National Burn Information Exchange (1965-85.)

Burn Classifications

There are three different kinds of burns:

? First degree or superficial burn

Sunburn is a typical superficial burn. A superficial burn is usually red and blanches (turns white) if you press on it. Superficial burn do not produce blisters, and damage only the top (or epidermal) layer of skin. A first degree burn heals by itself in three to six days. Hospitalization is required only if fever, dehydration (not enough fluid in the body) or controllable pain develops. First-degree burns are not included in calculations for burn size. Burn size is called the total body surface area or TBSA.

? Partial thickness burn

These burns involve the entire epidermis (top layer of the skin) and some portion of the dermis (second layer of the skin). Partial thickness burns are often broken down into two separate types: superficial partial-thickness burns or deep partial-thickness burns. Superficial partial-thickness burns cause blistering and are painful. Under the blister, they are red and moist. They heal within three weeks with minimal cosmetic defects (you wouldn't notice the scars with a casual look). There is usually only a change in the skin color, or pigmentation. Deep partial-thickness burns are dry and may appear ivory or pearly white. They require longer than three weeks to heal and usually produce severe hypertrophic scarring. A skin graft is usually recommended for deep second degree burns.

? Full thickness burn

A full thickness burn destroy the epidermis (first layer of the skin) and dermis (second layer of the skin). They are dry, with a dark brown or leathery appearance. Most deep partial-thickness burns and ull thickness burns larger than 3 centimeters in diameter are best treated with early excision (removal of dead tissue), immediate skin grafting, and long-term use of compression garments to minimize hypertrophic scarring.