

Model Systems for Burn Injury Rehabilitation: Facts and Figures

March 1997

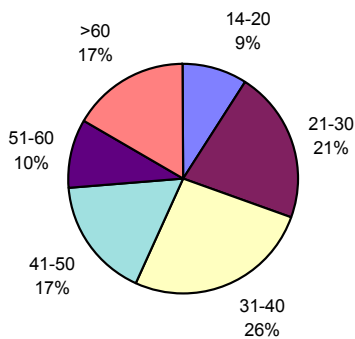
The three centers participating as Model Systems for Burn Injury Rehabilitation began collecting data on May 1, 1994. Data presented here were collected through February 1, 1997 and include 637 patients. In order to be eligible for the study, a burn patient must be seen at a Model Systems burn care facility within seventy-two hours of injury. Model Systems participants must be fourteen years of age or older, must consent to follow-up for at least two years, and must meet the American Burn Association criteria for a major burn injury (either a burn of at least 20% of total body surface area (TBSA), an electrical burn, a hand burn, second and third degree burns over more than 10% TBSA in patients over 50 years old, second and third degree burns with serious threat of functional or cosmetic impairment, third degree burns greater than 5% TBSA, inhalation injury, circumferential burns of the extremity or chest, and any burn with associated injuries).

General Demographics

Age

The mean age at injury for persons in the Model Systems is forty-one years old. The breakdown of patients by age groups is shown below in Figure 1. The largest number of patients (26%) were ages 31-40 at the time of injury, with the second largest group (22%) being ages 21-30 when injured.

Figure 1: Age at Injury



Gender

Nearly eighty percent (78.9%) of all patients in the Model Systems are male. When analyzed by age groups, the gender distribution varies from a low of sixty-three percent male in patients over 60 years old to a high of eighty-six percent male in the 14-20 year old age group.

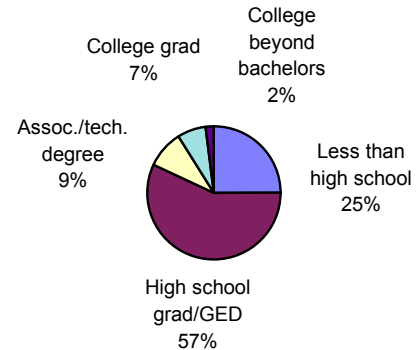
Employment Status

Over half (56%) of patients were working prior to their burn injury. Thirty-two percent reported not being employed at time of injury, while the remaining twelve percent were retired or homemaker/caregiver.

Education Level

The distribution of highest level of education attained is shown in Figure 2 below. Over half (57%) of the Model Systems patients have received a high school diploma or GED. Twenty-five percent have less than a high school education. The remaining eighteen percent have some level of schooling beyond high school.

Figure 2: Education Level



Marital Status

The majority of patients (55%) were single when their injury occurred. Forty-one percent were married, while the remaining four percent indicated having a partner or significant other.

Residence

Most patients (66%) lived in a house at the time of their burn. Twenty-two percent lived in an apartment; seven percent were in a mobile home. Almost three percent were homeless at the time of injury. Less than one percent were in an institution when the burn occurred.

Alcohol or Drug Use at Time of Injury

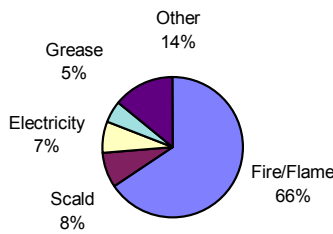
Oftentimes injuries are associated with substance abuse. For nearly ninety percent of Model Systems patients, alcohol and drug tests were done at admission. Fifteen percent tested positive for alcohol use while twelve percent tested positive for drug use.

Burn Demographics

Primary Etiology of Injury

Fire/flame was by far the most common cause of burn for the Model Systems patients, with sixty-five percent having fire or flame injuries. Scalds were the next most common cause, accounting for eight percent of burns. Electricity was the cause of the burn in seven percent of patients. Etiologies are shown in Figure 3. The Other category in the figure consists of grease (5%), flash (5%), tar (2.5%), chemical (1.5%), skin disease (<1%), and other causes (<1%).

Figure 3: Primary Etiology of Burn Injury



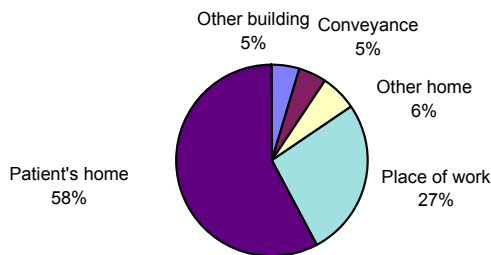
Indoor/Outdoor Location

Fifty-eight percent of burns occurred indoors in an enclosed space, increasing the probability of suffering an inhalation injury.

Geographic Location

The breakdown of geographic location where the burn occurred is shown in Figure 4 below. Over half (58%) of the patients in the Model Systems were burned in their own home. More than a quarter (27%) of the burns occurred at work.

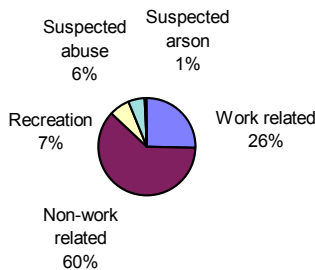
Figure 4: Where Injury Occurred



Circumstances

Twenty-six percent of all burns were work-related. Seven percent of burns occurred during recreational activities. Abuse was suspected in six percent of patients. The remaining sixty percent were also not related to employment and did not involve either abuse or recreational activities. These percentages are shown below in Figure 5.

Figure 5: Circumstances of Injury



Etiology by Location

When primary etiology of burn injury is broken down by where the injury occurred, one sees a different distribution of cause of burn than shown above in Figure 3. Of burns occurring at work, only thirty-five percent involved fire or flame while twenty-five percent involved electricity. For burns occurring on an automobile, train, or plane

(conveyance), seventy-three percent were a result of fire or flame while contact with a hot object accounted for twelve percent of conveyance-related burns.

Severity of Injury

When measuring the severity of a burn injury, one needs to consider factors such as total body surface area burned, whether skin grafting was required, and whether an inhalation injury occurred. These measures for Model Systems patients are shown in Table 1. The mean total body surface area burned for all patients is twenty-one percent. When broken down by type of burn, those with electrical burns had a mean TBSA burned of eleven percent, those with hand burns only that were not associated with electricity had a mean of two percent TBSA burned. Ninety-two percent of patients required grafting on some area of their body. Having an inhalation injury significantly limits survival from a burn; fifteen percent of these patients suffered an inhalation injury.

| Table 1: Measures of Severity of Injury | number | std. dev. |
|--|--------|-----------|
| Mean Total Body Surface Area Burned | 21% | 18.6 |
| All electrical burns | 11% | 10.5 |
| Non-electrical burns exclusively to hands | 2% | 2.1 |
| All other burns | 23% | 18.9 |
| Percent of Patients Requiring Grafting | 92% | |
| Percent of Patients with Inhalation Injury | 15% | |

Forthcoming Facts and Figures

The next Facts and Figures sheet will include information on psychosocial and functional measures at discharge as well as information on these measures at six-month follow-up.

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