

NIDRR Model Systems for Burn Injury Rehabilitation

Adult Facts, Figures and Selected Outcomes

University of Washington, University of Texas Southwestern, Johns Hopkins University, Galveston Shriners Burns Hospital
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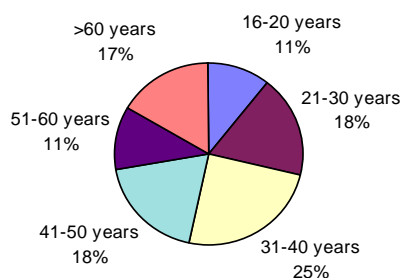
Since May of 1994, five burn centers have participated as Model Systems for Burn Injury Rehabilitation funded by the National Institute of Disability and Rehabilitation Research (NIDRR) in the Department of Education. Four Model Systems are currently collecting data, and the University of Colorado Health Sciences Center contributed data from 1994 to 1997. Each center collects data on both adults and children, although the largest contributor of subjects under 16 is the Galveston Shriners Burn Hospital. Data presented here were collected through August 2005 and include 3305 adult patients who visited one of the four current Burn Model Systems clinical centers. To be eligible for the study, Model Systems patients must consent to follow-up for at least two years, and must meet the American Burn Association criteria for treatment at a Burn Center.

Demographics

Age

Of the total combined burn population, 66% are adults (16 and older), and 34% are children (under 16). The mean age at injury for adult subjects (16 and older) is 43 years.

Figure 1: Age at Injury



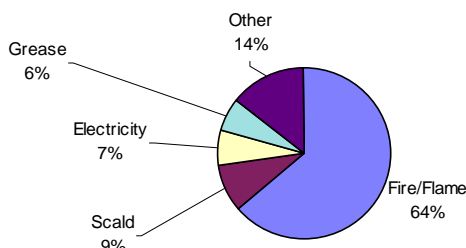
Gender

Seventy-five percent of all adult subjects in the Model Systems are male.

Primary Etiology of Injury

A chart displaying the most common burn etiologies is shown in Figure 3. The 'Other' category in the figure consists of flash burns (4.5%), contact burns (3.6%), tar burns (1.6%), chemical burns (2.3%), skin disease (1.7%), and other causes (<1%).

Figure 3: Primary Etiology of Burn Injury



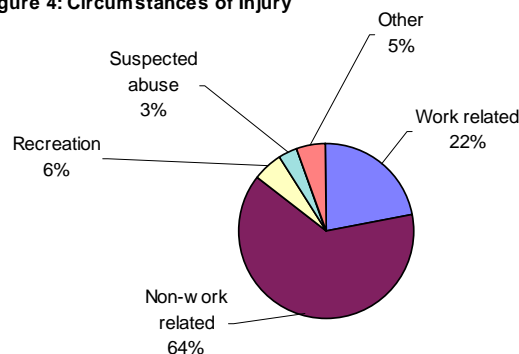
Alcohol or Drug Use at Time of Injury

Some burn injuries are associated with substance abuse. For 55% of the adult Model Systems patients, alcohol and/or drug tests were conducted upon admission. Thirty-two percent of those tested were positive for either drugs, alcohol or both. Of those tested for alcohol, 21% were positive and of those tested for drugs, 19% were positive.

Circumstances

Patients whose injuries were classified as 'non-work related' made up the majority of the adult subjects. Percentages are shown below in Figure 4.

Figure 4: Circumstances of Injury



Severity of Injury

When measuring the severity of a burn injury, one needs to consider factors such as total body surface area burned (TBSA), whether or not skin grafting was required, and whether the patient suffered an inhalation injury. The mean TBSA for all adult patients is 22%, and of all burn etiologies, skin disease had the highest mean TBSA (43%). Table 1 lists the mean and standard deviation for TBSA by burn etiology. Seventy-four percent of adult patients required grafting on some area of their body (this calculation excludes patients surviving fewer than 3 days). Burn patients sustaining inhalation injuries have a significantly reduced chance of survival than those without inhalation injury. Fifteen percent of the adult Model Systems patients suffered an inhalation injury.

Total Body Surface Burned (TBSA)

	Mean
All Burns	22%±20
Fire/Flame	27%±20
Flash	23%±15
Scald	16%±16
Chemical	16%±15
Electrical	12%±13
Grease	10%±9
Tar	9%±8
Contact with Hot Object	6%±8
Skin Disease	43%±33
Abrasion	13%±13
Frostbite/Cold	6%±2

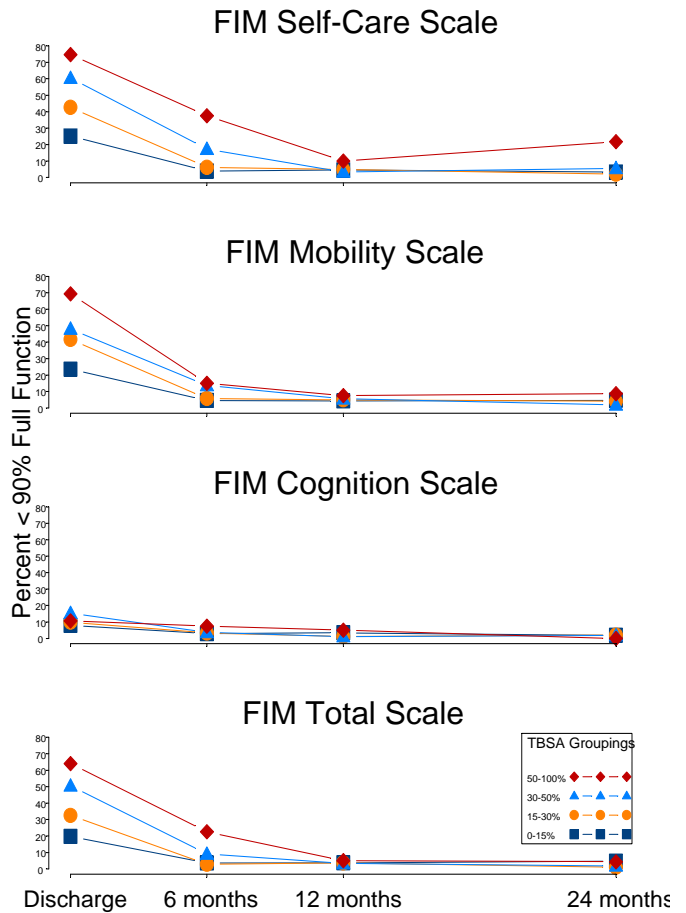
Other	10%±14
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Physical Functioning (as measured by the FIM®)

It has been reported by Kowalske, K., Holavanahalli, R., Esselman, P., Ksiazek, K. at the Annual Meeting of the American Burn Association in 1998 that functional impairment post burn can be measured and tracked using the FIM® which correlates with severity of burn, age, ICU and Rehabilitation days. Although the FIM® is not an ideal tool, FIM items, particularly bathing, dressing, and climbing stairs may be useful for quantifying current functional level and the extent of recovery within the first 6 months.

Demographic, Injury, Behavioral and Selected Prior Health Status Measure Distributions for Adult Burn Patients at Various Follow-up Times.

	D/C	6-Mth	12-Mth	24-Mth
Characteristic	Mean	Mean	Mean	Mean
N	1570	778	674	391
Age	40.7±16	40.6±15	41.1±15	42±16
%TBSA	18.5±16	19.1±16	19.2±17	19.4±17
% Grafted	8.6±11	10.4±12	10.5±13	11.4±14
Trips to OR	1.7±2	1.8±2	1.8±2	1.9±2
Male	77.9	77.6	76.4	78.0
Inhalation	10	9.5	10.8	8.7
Hand Burn	67.6	67.2	67.5	67.8
Head/neck Burn	50.0	51.5	51.2	51.4
TBSA Group				
Small	54.1	53.6	54.4	55.0
Medium	28.1	27.1	25.4	25.2
Large	13.0	14.2	14.0	13.9
Severe	4.8	5.2	6.2	5.9



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