

# Long-Term Outcomes of Chemical Burn Injuries: A Burn Model System National Database Study

GG Grant, BA<sup>1,2</sup>; OR Stockly, BS<sup>3</sup>; AE Wolfe, MPH<sup>3</sup>; S Wolfe, MD<sup>4,5</sup>; JC Schneider, MD<sup>3,6</sup>; CM Ryan, MD<sup>1,2,6</sup>

<sup>1</sup> Shriners Hospitals for Children®- Boston, Boston, MA; <sup>2</sup> Massachusetts General Hospital, Boston, MA; <sup>3</sup> Spaulding Rehabilitation Hospital, Charlestown, MA;

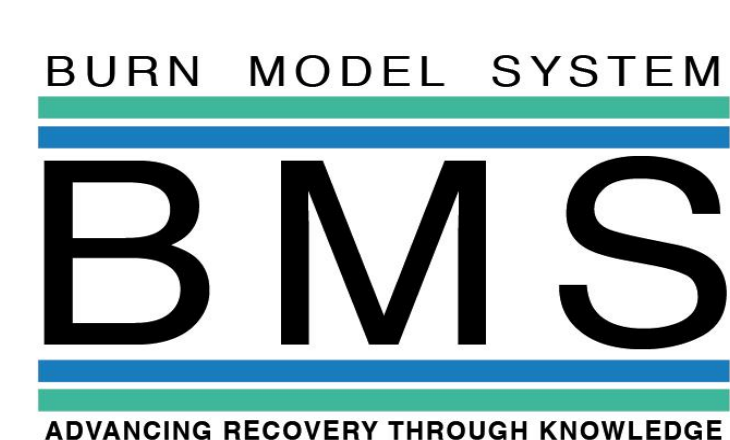
<sup>4</sup> University of Texas Medical Branch, Galveston, TX; <sup>5</sup> Shriners Hospitals for Children – Galveston, Galveston, TX; <sup>6</sup> Harvard Medical School, Boston, MA

## Introduction

- This study compares long-term outcomes between survivors of chemical and fire/flame burn injuries.

## Methods

- Demographic and clinical characteristics of adult burn survivors with chemical and fire/flame burn injuries were compared.
- Regression analyses for four outcomes were conducted at 12 and 24 months post-burn, adjusting for age, gender, race, and burn size.
- Outcomes included the Mental Health Composite Scale (MCS) and the Physical Health Composite Scale (PCS) of the Short Form Health Survey-12, the Satisfaction with Life Scale (SWLS), and employment status.



The contents of this presentation were developed under a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR #90DBPU0001). NIDILRR is a center within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). The contents of this presentation do not necessarily represent the policy of NIDILRR, ACL, or HHS and you should not assume endorsement by the Federal Government. This study is also supported by Shriners Hospitals for Children.

*Disclosure: There are no actual or potential conflicts of interest in relation to the contents of this poster.*

## Results

**Table 1: Significant differences in demographic and clinical characteristics of the study population**

	Fire/Flame Burn Injury (n=2426)	Chemical Burn Injury (n=96)
Employment status at time of burn, % (n)*		
Working	59.0% (1409)	83.9% (78)
Not-working	24.9% (702)	14.0% (13)
Retired	11.6% (277)	2.2% (2)
Circumstances of injury, % (n)*		
Employment related	13.9% (335)	56.3% (54)
Non-employment accidental	77.1% (1854)	27.1% (26)
Suspected assault	3.6% (86)	11.5% (11)
Suspected suicide	5.0% (121)	5.2% (5)
Arson	0.4% (10)	0% (0)
Disposition at discharge, % (n)*		
Own home	63.0% (1514)	87.2% (82)
Other	37.0% (889)	12.8% (12)
Burn size, mean % TBSA (SD)*	23.0% (17.4)	11.1% (13.1)
Hospital stay, mean days (SD)*	32.9 (36.3)	23.5 (39.0)
Ventilator days, mean (SD)*	5.3 (14.5)	0.6 (2.6)

\*p-value < 0.05

**Table 2: No significant differences detected in outcomes at 12 or 24 months post-burn**

Outcomes	p-value (12 months)	p-value (24 months)
Mental Health Composite Scale*	0.230	0.546
Physical Health Composite Scale*	0.360	0.253
Satisfaction with Life Scale*	0.087	0.968
Employment Status**	0.299	0.188

\*linear regression; \*\*logistic regression

## Conclusions

- No significant differences in MCS, PCS, SWLS, or employment status were found at 12 or 24 months post-burn between groups in the regression analyses.
- Effects of chemical burn injury on long-term outcomes may be difficult to detect due to the relatively small sample size of this population and limited specificity of the assessments.