

NIDRR Projects

## Research in the New Millennium

### UCHSC Burn Model System Data Coordination Center (BMS/DCC)

University of Colorado Health Sciences Center (H133A020402) led by Dennis C. Lezotte, PhD. Theresa San Agustin, MD, Project Officer.

Abstract: The BMS/DCC is a data management and analytical support facility for Burn Model Systems clinical and outcomes research projects. The project offers support in four important areas: project management, data management, analytical support, and dissemination. Support is provided in developing appropriate integrated systems to affect national data collection, project management, data coordination, technical support, collaborative clinical projects, scientific conduct, scientific publication, and effective dissemination. The UCHSC BMS/DCC continues to accumulate and integrate a central repository of data from the Model Systems to enhance their abilities to make sentinel statements and change the way burn injury rehabilitation is done. In addition the DCC provides and coordinates statistical support among the clinical and statistical groups from each Burn Center and is prepared to expand this support, adding several new protocols and/or clinical studies where appropriate.

Find out more at: [mama.uchsc.edu/pub/nidrr](http://mama.uchsc.edu/pub/nidrr)

### Johns Hopkins

#### University Burn Injury Rehabilitation Model



#### System Baltimore Regional Burn Center

(H133A020101) led by James A. Fauerbach, PhD. Theresa San Agustin, MD, Project Officer.

Abstract: This project tests interventions targeting three common postburn secondary complications affecting health and function: generalized deconditioning, muscle atrophy, and acute stress disorder. Testing the effectiveness of these interventions holds promise for improving the health and function of burn survivors as well as enhancing their options for workplace and community reintegration. The JHU-BIRMS projects include: testing the efficacy of its augmented exercise program in rehabilitating people with generalized deconditioning, testing the efficacy of enhanced cognitive-behavioral therapy in treating individuals with acute stress disorder and preventing the development of chronic posttraumatic stress disorder, and developing a new measure that quantifies the degree of social stigmatization experienced by burn survivors and its impact on emotional adjustment and integration into the workplace and the community.

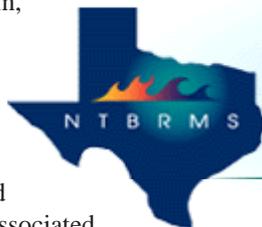
Find out more at: [www.jhbmc.jhu.edu/brbc/birms](http://www.jhbmc.jhu.edu/brbc/birms)

### North Texas Burn Rehabilitation Model System (NTBRMS)

The University of Texas Southwestern Medical Center (H133A020104)

led by Karen Kowalske. Theresa San Agustin, MD, Project Officer.

Abstract: This grant conducts five research projects: (1) barriers to return-to-work following major burn injury; (2) long-term outcome following major burn injury; (3) outcome following deep, full-thickness hand burns; (4) the evolution over time of burn-associated neuropathy; and (5) the socioeconomic determinants of disability in individuals with burn injury. Clinical collaboration is the hallmark of



the burn team, which includes individuals from several institutions who work together seamlessly, as well as collaboration with rural care providers through rural clinics and a biannual seminar. Research collaboration occurs locally with the surgeons and academic computing staff, and nationally with the other model systems. Find out more at: [www.swmed.edu/ntbrms/welcome.htm](http://www.swmed.edu/ntbrms/welcome.htm)

### Pediatric Burn Injury Rehabilitation Model System, University of Texas Medical Branch (H133A020102) led by David Herndon, MD. Theresa San Agustin, MD, Project Officer.

Abstract: This program conducts independent and multi-center projects focusing on evaluating and improving the rehabilitation provided to the burned child, striving to decrease disability and improve reintegration into society. The project continues longitudinal assessments of patients, expanding the database that includes measures of cardiopulmonary function, physical growth and maturation, bone density, range of motion, activities of daily living, scar formation, reconstructive needs, and measures of psychosocial adjustment. This data is used to identify areas that require improvement and provide functional outcome measures that can be used in the evaluation of treatment methods. Research activities include: (1) a multi-center project assessing the efficacy of the long-term administration of oxandrolone in the treatment of burn injury with endpoints of improved strength, lean body mass, bone density, and growth; (2) improving rehabilitative outcomes for children by instituting and evaluating major

modifications to current treatment for children with large burns; (3) evaluating the use of pressure garments in controlling scar following burn injury; (4) a multi-center study evaluating the relationship between treatment, injury, patient characteristics, and patient outcome in those patients sustaining full thickness hand burns; and (5) evaluating acute stress disorder and posttraumatic stress disorder, including its occurrence, predictive elements, and efficacy of treatment.

### University of Washington Burn Injury Rehabilitation Model

System, University of Washington (H133A020103) led by Loren H. Engrav, MD. Theresa San Agustin, MD, Project Officer.

Abstract: This model system conducts five research projects: (1) A New Approach to the Etiology of Hypertrophic Scarring: develops an increased understanding of hypertrophic scarring. (2) Effect of Virtual Reality on Active Range-of-Motion During Physical Therapy: uses distraction via immersive virtual reality as an adjunctive non-pharmacologic analgesic. (3) Determination of Reasons for Distress in Burn-Injured Adults: identifies reasons behind a burn survivor's distress at various time-points after hospital discharge. (4) Barriers for Return to Work: identifies specific barriers to return to work for burn survivors in collaboration with JHU-BIRMS. (5) Acute Stress Disorder Among Burn Survivors: evaluates the effectiveness of cognitive-behavioral therapy, relative to a non-directive, supportive therapy control group, and a national comparison sample in reducing the prevalence of post-traumatic stress disorder diagnosis and symptom severity.

Find out more at: [faculty.washington.edu/engrav/index.html](http://faculty.washington.edu/engrav/index.html)

RehabWire for September highlights the work of the Burn Injury Model Systems and burn injury research published in the last year.

## Selections from REHABDATA

Carrougher, G. J., et al. (2003) **Comparison of patient satisfaction and self-reports of pain in adult burn-injured patients.** *Journal of Burn Care & Rehabilitation*, 24(1), 1-8. Accession Number: J45113.

Abstract: Study compared patient self-reports of procedural and background pain with treatment goals and overall satisfaction with pain management plans in adult burn-injured patients. The majority of patients perceived that no pain during wound care was an unrealistic goal. Patients with the highest levels of burn care pain reported the lowest level of satisfaction.

Martin-Herz, S. P., Patterson, D. R., Honari, S., Gibbons, J., Gibran, N., Heimbach, D. M. (2003) **Pediatric pain control practices of North American burn centers.** *Journal of Burn Care & Rehabilitation*, 24(1), 26-36. Accession Number: J45116.

Abstract: Article reports results of a survey on pediatric pain control practices, pain assessment methods, and perceived treatment efficacy for patients treated in North American burn centers. All respondents indicated that they used opioid analgesics for wound care with pediatric patients of all ages. The most frequently used background pain medications were intravenous morphine, acetaminophen with codeine, and acetaminophen alone. Areas that warrant further study, including outpatient pain management, pain assessment, and the use of pharmacologic and nonpharmacologic adjuvants are discussed.

McGwin, G., Cross, J. M., Ford, J. W., Rue, L. W. **Long-term trends in mortality according to age among adult burn patients.** *Journal of Burn Care & Rehabilitation*, 24(1), 21-25. Accession Number: J45115.

Abstract: Article describes mortality rates according to age among adult patients admitted to a regional burn center between 1973 and 1997. Mortality rates were compared over time among 3 age groups: 18-34, 35-54, and 55 and older. Over the 25-year period, the proportion of patients in each age group and the type of burns remained consistent. The average total body surface area burned declined steadily from 31.6 percent in the 1970s to 18.2 percent in the late 1990s. The mortality rate for all patients in all age categories declined from 25.3 percent to 8.6 percent during the study period.

Trees, D. W., Ketelsen, C. A., Hobbs, J. A. (2003) **Use of a modified tilt table for preambulation strength training as an adjunct to burn rehabilitation: A case series.** *Journal of Burn Care & Rehabilitation*, 24(2), 97-103. Accession Number: J45327.

Abstract: Describes 4 case studies involving the use of a modified tilt table that allows patients with significant burn injuries to perform weight-bearing exercises. In case 1, a patient with extensive burns and severe deconditioning used

the table primarily for closed-chain strengthening until he was able to support his own body weight in standing. In case 2, a patient with burns and a left above-knee amputation used the table to increase strength in the unaffected leg. In case 3, involving a patient with burns and cognitive impairment, the table was used to provide a controlled environment in which the patient could participate in weight-bearing exercises. In case 4, the table was used as a desensitization technique to begin graded weight bearing on a foot with severe burns and amputated toes. The modified tilt table allowed each patient to progressively strengthen their lower extremities at levels they could tolerate.

Heimbach, D. M., et al. (2003) **Multicenter postapproval clinical trial of Integra dermal regeneration template for burn treatment.** *Journal of Burn Care & Rehabilitation*, 24(1), 42-48. Accession Number: J45117.

Abstract: Study examined the safety and effectiveness of Integra Dermal Regeneration Template to treat deep excised wounds of the skin resulting from burn injuries. The Food and Drug Administration requested a postapproval study to determine the infection rates associated with Integra use. Integra was applied to fresh, clean, surgically excised burn wounds. Within 2 to 3 weeks, the dermal layer regenerated, and a thin epidermal autograft was placed. The incidence of invasive infection was 3.1 percent and the incidence of superficial infection was 13.2 percent at Integra-treated sites. Neither type of infection was associated with increased mortality rate. The comparatively low infection rates support the safety of Integra in the treatment of burn wounds.

Austin, K. G., Hansbrough, J. F., Dore, C., Noordenbos, J., Buono, M. J. (2003) **Thermoregulation in burn patients during exercise.** *Journal of Burn Care & Rehabilitation*, 24(1), 9-14. Accession Number: J45114.

Abstract: Study assessed the ability of burn patients to regulate their body temperature before and after exercise in the heat. Three patients with third-degree burns on 30 to 40 percent of body surface area (BSA), 3 patients with burns on 60 percent or greater BSA, and 2 unburned subjects exercised on a cycle ergometer for 1 hour at 75 watts in an environmental chamber set at 35 degrees centigrade and 60 percent relative humidity. Results showed that patients with burns on 60 percent or greater BSA experienced only a moderate rise in rectal temperature and heart rate and their responses were similar to those of unburned subjects.

Burn Facts from the Model Systems: 68% of burn injuries are to adults, 32% are to children; 73% of children are not under supervision. For adults, 23% of all burns are work related and 6% of burns in children are suspected to be from child abuse.

Burn Fact Sheets and other publications are available from the Burn Model Systems/Data Coordinating Center at [mama.uchsc.edu/pub/nidrr/](http://mama.uchsc.edu/pub/nidrr/)