

August 2016

- ✓ *An estimated 1 million Americans sustain a burn injury each year, out of which 45,000 are hospitalized.*
- ✓ *Severe burns are one of the most complex forms of trauma injury and often require long-term rehabilitation.*
- ✓ *People with a burn injury can experience a range of physical and psychosocial concerns that can affect their ability to function.*

The Burn Model Systems Centers (BMS) Program began in 1994 and is funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), a Center within the Administration for Community Living (ACL), U.S. Department of Health and Human Services (HHS), to improve care and outcomes for individuals with burn injuries.

Currently, four BMS centers participate: University of Washington, Boston-Harvard Burn Injury Model System, University of Texas Medical Branch—Galveston, and University of Texas Southwestern Medical Center. Each center provides a coordinated and multidisciplinary system of rehabilitation care, including emergency medical, acute medical, post-acute, and long-term follow-up services to persons with burn injuries. In addition to providing direct services, these centers play a pivotal role in building the national capacity for high-quality research and treatment to improve physical, functional, and psychosocial outcomes for people with burn injuries. For BMS contact information and resources go to <http://www.msktc.org/burn>.

Research

BMS centers conduct research and contribute follow-up data to the BMS National Longitudinal Database.

- The BMS Data Coordination Center collects and analyzes data on the course of recovery and outcomes of individuals who were admitted to BMS centers for medical care. This database has information on almost 6,000 individuals with burn injuries, including data on preinjury, injury, acute care, rehabilitation, and outcomes at 6, 12, and 24 months postburn injury. In 2015 this study was expanded to include information on recovery collected from the individual every 5 years after injury.
- Several studies are currently underway. Examples include the identification of long-term survivor needs, the effect of heat intolerance on exercise and physical function, the evaluation of a web-based social skills training program, a study of transcranial direct current stimulation (tDCS) on itch and pain, measures of cardiopulmonary function and physical growth after injury, and the efficacy of hypnosis on pain and itching following a significant burn injury.

The National Institute on Disability, Independent Living, and Rehabilitation Research, Administration for Community Living, U.S. Department of Health and Human Services sponsors the Burn Model Systems (See <http://www.msktc.org/burn/model-system-centers> for more information).

Accomplishments

- Demonstrated capacity building by helping to train the next generation of burn providers to understand the long term challenges after burn injury
- Estimated the quality-of-life lost for a burn survivor with a serious injury in the United States
- Established the chronicity of a burn injury on quality of life (e.g., prevalence of postburn itching for both the pediatric and adult burn survivor)
- Established an Heterotopic Ossification (HO) risk scoring system
- Developed and validated an animal model for scar research. Studies by the BMS have established the Duroc/Yorkshire porcine model of scarring, which may lead to effective treatment/prevention of postburn scars.

Dissemination

The BMS program disseminates evidence-based information to patients, family members, health care providers, educators, policy makers, and the general public. Centers do this in a variety of ways through:

- Publications that have detailed research findings from over 20 years of NIDILRR support
- Presentations at national and international professional meetings
- Consumer factsheets (e.g., itchy skin, returning to work and school, scar management)
- Consumer quick reviews from peer-reviewed BMS publications
- Multimedia products ([Employment after Burn Injury](#))
- Outreach satellite clinics for patients living in rural areas
- Education website development to promote return to work for adult burn survivors
- Burn peer support groups

The BMS program also collaborates with the NIDILRR-funded Model Systems Knowledge Translation Center (<http://www.msktc.org/>) to promote adoption of research findings by rehabilitation professionals, policy makers, and people with burn injuries and their family members.

BMS Partnerships

The BMS program has established partnerships that serve to increase the overall impact of research, information dissemination, and training of clinicians, researchers, and policy makers. The BMS collaborates with:

- The Phoenix Society for Burn Survivors to ensure that NIDILRR-funded research addresses issues relevant to people with burn injuries
- The American Burn Association (ABA) to disseminate and share NIDILRR-funded research findings
- The Pacific Institute for Research and Evaluation to determine QALY (quality-adjusted life years) after thermal injuries
- The Safety and Health Assessment and Research for Prevention (SHARP) program to identify high-risk industries for future research and prevention efforts
- Non-Burn Model System researchers who can interrogate the BMS National Longitudinal Database

