



# Annual Review

2018

## Mission:

Founded as a Christian ministry of healing, Baylor Scott & White Health promotes the well-being of all individuals, families and communities.



### Annual Review 2018

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### Cover Photo:

Baylor Scott & White Institute for Rehabilitation's Outpatient Therapy clinic at The ST&R showcases an advanced model of an anti-gravity treadmill - used by professional sports teams and one of only a half dozen available in the Dallas-Fort Worth Metroplex. This device enables patients with lower extremity injuries to strengthen muscles and work on their walking or running pattern without the stress of typical weight-bearing exercises.

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Amy J. Wilson, MD

## A message from Amy Wilson, MD, medical director

Getting to zero harm in healthcare is a journey, not a destination. The contributors to potential harm are sometimes simple and basic, yet other times are complex, multifaceted and interwoven. Achieving sustained improvement requires healthcare providers to constantly keep an eye on the ball. As our organization considered opportunities to make meaningful contributions to a culture of safety, we found ourselves time and time again looking at transitions of care and, more specifically, how health literacy impacts these transitions. What happens when a patient does not understand the discharge instructions? What are the consequences when a caregiver is confused about a patient's medications?

The figures are staggering. The National Assessment of Adult Literacy (NAAL) estimates that only 12 percent of the U.S. population is considered "proficient" in health literacy. "Problems with health literacy can impact all people, especially those experiencing chronic illness and disability. Making the information we give and teach our patients and their families understandable is essential for diminishing the disparity, reducing complications and improving the quality of the care we deliver," says Randi Dubiel, DO, director of traumatic brain injury services at Baylor Scott & White Institute for Rehabilitation.

I hope that you will peruse our article outlining our efforts around health literacy thoughtfully as you consider how this topic might impact your own organization or care setting. We are proud of our progress, from educating our clinical staff on health literate communication styles to revamping our educational materials in health literate language. We have merely scratched the surface thus far with much work left to do, but we are committed as an organization on the journey to zero harm.

## Addressing the Health Literacy Needs of Patients and Families



As an innovator in rehabilitation care, Baylor Scott & White Institute for Rehabilitation (BSW Rehab) has made a commitment to address patient and family health literacy to lessen the burden of complex healthcare delivery. Health literacy is considered the degree to which patients have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Understanding and addressing health literacy is integral to a clinician's ability to deliver high-quality, patient-centered care in the rehabilitation setting. With clinical factors such as increased patient acuity and reduced length of stay, delivering education to patients and family members is becoming increasingly challenging, yet remains a critical part of BSW Rehab's approach to care. As such, BSW Rehab as an organization has taken on the challenge of systematically implementing evidence-based recommendations from the National Institutes of Health, Agency for Healthcare Research and Quality, Institute of Medicine, Centers for Disease Control and Prevention, and the Department of Health and Human Services to address patient and family health literacy.

Initially, clinicians at BSW Rehab established a health literacy workgroup to layout a framework to address the "Attributes of a Health Literate Organization" outlined by the Institute of Medicine. Key components to facilitate this approach include obtaining leadership buy-in; staff training on the role of health literacy in patient care; strategies for clinicians to confirm patient understanding of health information; and designing easy to understand written and spoken communication.

*"Identifying opportunities for us to improve our ability to translate complex treatment into clear and easy to understand education is very important for our patients and families."* – Fabian Polo, PhD, MBA

To identify the primary areas of the health literacy need at BSW Rehab, clinicians completed a self-assessment tool developed by the Agency for Healthcare Research and Quality. This tool assessed the clinician's perception

of how health literacy principles were integrated into all areas of practice and identified areas of need. "Identifying opportunities for us to improve our ability to translate complex treatment into clear and easy to understand education is very important for our patients and families," notes Fabian Polo, PhD, MBA, president of BSW Rehab. "They are provided with a lot of critical therapeutic and medical education during inpatient rehabilitation, and since the majority will be returning home and assuming responsibility for their own care, it's critical that there is good comprehension."

The health literacy workgroup collected self-assessments from 207 clinical staff members and the results indicated a need for **(1)** clearly written education materials, **(2)** patient and family input when developing education materials, and **(3)** health literacy awareness training. "The self-assessment gave us a clear picture of what we needed to do to function as a health literate hospital. To comprehensively execute these recommendations, we recognized the importance of partnering with patients, families, and professional organizations," stresses David Smith, PT, MBA, chief executive officer at BSW Rehab – Dallas.

### Patient Centric Education Materials

To ensure clinicians have clearly written educational materials to provide to patients and caregivers, staff at BSW Rehab specializing in stroke and traumatic brain injury education partnered with patients, caregivers, and Health Literacy Media, a professional organization that specializes in developing visually engaging, easy to understand health resources for healthcare providers. "After meeting one of the project managers from Health Literacy Media at the Health Literacy Research Conference, we thought it would be a great opportunity to collaborate. While our team members have excellent clinical knowledge and training, they aren't proficient in best practices to create health literate materials, and finding the time to update these materials is challenging

with their clinical requirements," explains Simon Driver, PhD, director of research. The collaboration yielded two health literate, graphically appealing, and informative education books that both patients with traumatic brain injury and stroke helped to write and design. The education books cover topics ranging from etiology of the diagnosis to strategies on how to better manage recovery at home – all at a seventh grade reading level. "We're very proud of the education books," says Molly Trammell, PT, senior physical therapist on the stroke team. "The fact that our stroke education book was nominated for the national ClearMark Award and was acknowledged by The Joint Commission as an exemplary health literate education tool is validation of the patient-centric materials we are creating."

### Clinician Health Literacy Awareness Training

Staff health literacy training has also been initiated by Merri Leigh Johnson, director of the physical therapy residency program, and Anne Woolsey, a clinical research coordinator, who developed a health literacy workshop that is delivered to all nursing staff across all BSW Rehab inpatient hospitals. "The workshop includes education on the definition of health literacy, the impact and prevalence of low health literacy, and strategies to promote learning including Teach-Back and Ask Me 3," adds Merri Leigh Johnson. "These approaches both help patients and/or their families understand their care." Additionally, an online "Health Literacy Basics" education module was developed for clinicians, therapists and nurses.

The impact of the team's work has broadened as clinicians have partnered with other hospitals as part of the Dallas-Fort Worth Hospital Council Health Literacy Coalition. With innovative strategies in place, buy-in from staff and support from the executive team, health literacy will continue to be at the forefront of all aspects of care.

## Rehabilitation Restores Quality of Life for Cancer Patients



Baylor Scott & White Institute for Rehabilitation (BSW Rehab) provides cancer rehabilitation, from diagnosis through survivorship or palliative care, including acute care, inpatient rehabilitation care, outpatient care, and home health. Although many people may not realize that rehabilitation is a part of a patient's cancer care, it is often a critical component of treatment for addressing issues such as pain, lymphedema, decreased range of motion, trouble swallowing, speech problems, and diminished physical functioning.

Donna Kaufhold, MBA, OT, director of acute care and rehabilitation services at BSW Rehab, learned firsthand the importance of oncology rehabilitation when her mother was diagnosed with salivary gland cancer and became a patient, progressing through the entire continuum of cancer treatment and cancer rehabilitation. After having her salivary gland removed and mandible reconstructed after radiation, she had physical therapy and speech therapy in the acute care setting. She progressed to the outpatient setting for continued speech therapy, lymphedema management, and specialized oncology therapy to address mobility

and activities of daily living. "These programs give patients back their ability to live," Ms. Kaufhold says.

Her mother's care plan relied in part on BSW Rehab's "prehab" programming. Before patients with head and neck cancer undergo chemotherapy, radiation, or surgery, the care team employs a protocol consistent with National Comprehensive Cancer Network guidelines that may include evaluations for speech therapy, physical therapy, and occupational therapy, and educating patients about what to expect during treatment and rehabilitation. "It has made an enormous difference in the care of patients," says Julia Cameron, MOT, OTR, CLT, LANA, center manager at a BSW Rehab outpatient clinic. "Their expectations are more realistic, and they are more comfortable entering the treatment plan."

Each treatment plan is based on the individual needs and goals of the patient and is created in collaboration with the patient's other healthcare providers. BSW Rehab provides cancer rehabilitation at 48 of its outpatient therapy clinics by 95 therapists who specialize in cancer rehabilitation through the ReVital Cancer Rehabilitation program.

Ashley Lightner, PT, DPT, CLT, ReVital program director, recalls the story of a 93-year-old patient with head and neck cancer: "His daughter was afraid he would fall, so we helped him with walker training and safety. We discovered he wasn't eating or drinking like he should have been due to his fear of choking, but he hadn't told his physician. We alerted his physician, so this could be addressed with a formal swallow evaluation. His physician's understanding of the role of oncology therapy in his care plan in turn helped prevent a decline in function that could have led to falls or hospitalizations." This is one of many examples of interdisciplinary teams helping a patient without sending him or her to the hospital, thus underscoring how an individualized, patient-centered therapy approach can improve patient care and outcomes while preventing unnecessary healthcare utilization.



### Palliative Care and Legacy Work

The continuum of cancer rehabilitation care may include palliative care. Palliative care may be end-of-life care or may be focused on managing symptoms and providing patients with strategies to help improve their quality of life. For example, a patient whose ability to speak is limited by a tracheostomy tube may experience anxiety, depression, or a loss of control, and may be helped by strategies such as relaxation exercises or non-medicinal pain management.

If a patient is near the end of life, the cancer rehabilitation care team may help with legacy work, the creation of tangible items to give to family and friends. As a gift to one family, the members of the care team put their thumbprints and signatures on a picture of a tree, and the family was so appreciative that they displayed the tree at the patient's funeral. For many families, a tangible item is a powerful way to remember their loved one and help them cope with their grief.

The ReVital Cancer Rehabilitation program is grounded in the recognition that a cancer diagnosis and treatment impact every aspect of a person's life and that specialized oncology therapy is crucial to help patients return to their physical, occupational, social, and spiritual priorities as soon as possible. "Everything we can do to prepare them and their family about what to expect improves their quality of life, so they can get back to being a person and not just a patient," says Abigail Smith, PT, MPT, clinical manager of inpatient therapy services. "Their goals are our goals, and living well beyond cancer is our life's work."

# BSW Rehab's Rehabilitation Care Expands into Central Texas



In 2018, Baylor Scott & White Institute for Rehabilitation (BSW Rehab) expanded its service area into central Texas for the first time. The expansion represents the continued relationship between Baylor Health Care Systems (BHCS) and Select Medical that began in April 2011, when BHCS partnered with Select Medical, one of the leading providers of post-acute services in the United States, in an effort to expand care in the post-acute rehabilitation area. The success of this joint venture in North Texas, along with the 2013 merger of BHCS and Scott & White Healthcare into Baylor Scott & White Health (BSWH), laid the groundwork for the current engagement in the central Texas market.

“As the rehabilitation arm of Baylor Scott & White Health, we wanted to expand our expertise and services to the central Texas market,” says Fabian Polo, PhD, MBA, president of BSW Rehab. BSW Rehab acquired a rehabilitation hospital in Lakeway, Texas, and began operations as Baylor Scott & White Institute for Rehabilitation - Lakeway on June 26, 2018. On July 1, 2018, Select Medical’s 16 freestanding outpatient physical therapy clinics and BSWH’s six outpatient

physical therapy clinics in Central Texas were acquired by BSW Rehab to facilitate the care continuum for central Texas patients.

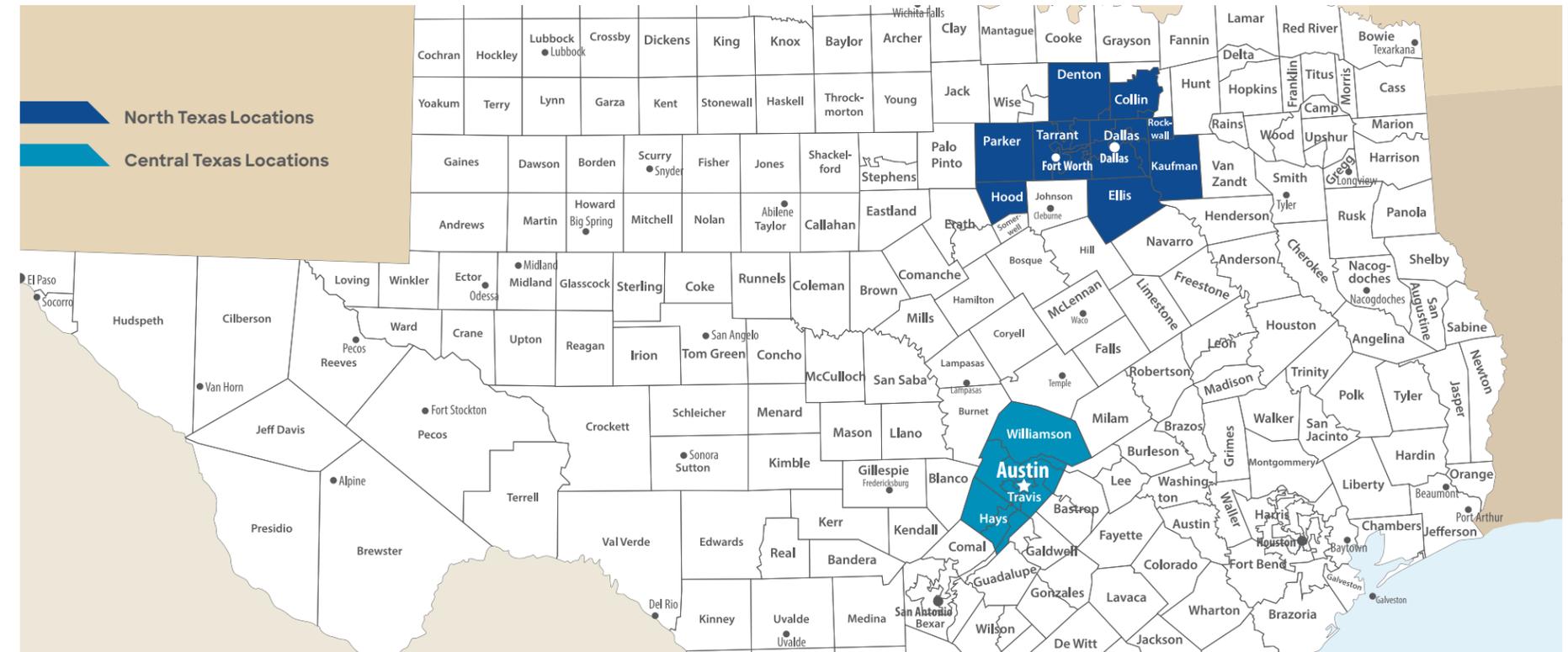
This expansion has enabled BSW Rehab to serve an additional 900 new inpatients and 13,000 new outpatients per year. “This allows us to leverage our strength and expertise across not just our inpatient hospitals but also our outpatient clinics,” Dr. Polo says. “Our goal is to provide the highest value care to the markets we serve.”

On the inpatient side, BSW Rehab leaders expect that the expansion into central Texas will enable BSW Rehab to better serve the neuro population and provide patients after stroke, spinal cord injury, traumatic brain injury, and other neurological conditions with high-quality care that leads to better outcomes at a lower cost. On the outpatient side, the expansion has created a larger footprint for BSW Rehab, with more options for physicians to refer patients to conveniently located BSW Rehab clinics. “Our goal is to bring high-quality therapy services close to where people live and work because outcomes improve when patients find rehabilitation

care convenient to access,” says P.J. Gillard, PT, and vice president of outpatient therapy.

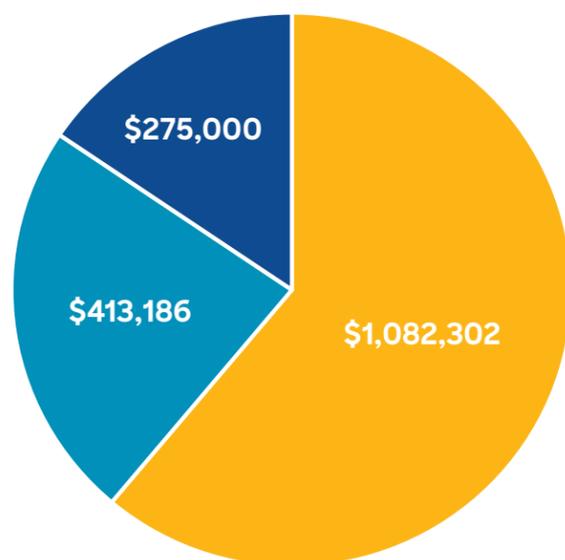
BSW Rehab leaders were confident in their ability to achieve an effective expansion based on the organization’s success in the Dallas-Fort Worth metroplex since 2011. “Our organizations have come together and showed great success since 2011,” says Gillard. “This year, we took 22 clinics and blended their cultures to become one unit with a shared vision and leadership structure. The team has been great and everyone has embraced this expansion.”

Patients are already benefiting from the expansion of BSW Rehab and its expertise that emphasizes the importance of post-acute care in a patient’s journey to recovery. As one patient wrote to the organization’s leaders, “I want to thank you for my wonderful recent experience at your rehabilitation hospital. All employees showed a caring team spirit, and I am very impressed with their professionalism. We are fortunate to have these employees at Baylor Scott & White Institute for Rehabilitation in Lakeway, Texas.”



## Research Fact and Figures

### BSW Institute for Rehabilitation 2018 Funding Portfolio \$1,770,488



2019 Federal Funding  
2019 PCORI Contracts  
2019 Foundation



### 5 Federal Grants supported by the National Institute on Disability, Independent Living, and Rehabilitation Research

1. Building an Evidence Base for Weight Loss Strategies among those with Chronic SCI – 2018-2021 – Grant # 90IFRE0022 (PI Grobe)
2. Efficacy of an Evidence-Based Lifestyle Intervention for People Following Stroke – 2018-2021 – Grant # 90IFRE0021 (PI Driver)
3. Project WOWii: Developing and Testing a Web-Based Intervention to Promote Exercise Among Those with Spinal Cord Injury – 2015-2019 – Grant # 90IF0106 (PI Grobe)
4. North Texas Traumatic Brain Injury Model System – 2017-2022 – 90DPTB0013 (PI Driver)
5. Characterization and Treatment of Chronic Pain after Moderate to Severe Traumatic Brain Injury – 2018-2023 – Grant # 90DPTB0017 - (site PI Driver)

### 2 Contracts with the Patient-Centered Outcomes Research Institute

1. Improving Transition from Acute to Post-Acute Care following Traumatic Brain Injury – 2017-2022 – Contract # 1604-35115 (site PI Driver)
2. Comparison of Sleep Apnea Assessment Strategies to Maximize TBI Rehabilitation Participation and Outcome – Contract # CER-1511-33005 – 2016-2019 – (site PI Dahdah)

### 2 Craig H. Neilsen Foundation Grants

1. Impact of Contextual Factors on Nutrition and Weight Gain over 12 Months after Spinal Cord Injury – 2018-2020 – Grant # 541948 (PI Grobe)
2. Enhancing peer mentoring to promote independence and community participation after rehabilitation – 2018-2019 – (PI Grobe)

### 46% increase in federal and external foundation funding from 2017

### Publications

Driver S., Reynolds M., Woolsey A., Callender L., Prajapati PK., Bennett M., Kramer K. (2018). Impact of a Community-Based Healthy Lifestyle Program on Individuals With Traumatic Brain Injury. *Journal of Head Trauma Rehabilitation*.

Hamilton, R., Kirshblum, S., Sikka, S., Callender, L., Bennett, M., Prajapat, P. (2018). Sacral examination in spinal cord injury: Is it really needed? *Journal of Spinal Cord Medicine* (DOI: 10.1080/10790268.2017.1410307)

Dahdah, M., Bell, K., Lequerica, A., Merfeld, A. (2018). Effectiveness of Cognitive Behavioral Therapy for Treating Insomnia in Healthy Individuals and those with Brain Injury. *The Brain Injury Professional - Sleep Disorders and Traumatic Brain Injury Special Issue*. (DOI Pending)

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Brown, R., Tang, X., Dreer, L., Driver, S., Pugh, M., Martin, A., McKenzie-Hartman, T., Shea, T., Silva, M., Nakase-Richardson, R. (2018): Change in body mass index within the first-year post-injury: a VA Traumatic Brain Injury (TBI) model systems study, *Brain Injury*, DOI: 10.1080/02699052.2018.1468575

Rachal, L., Swank, C., Trudelle-Jackson, E., & Driver, S. (2018). Reliability and clinical feasibility of measuring dual-task gait in the inpatient rehabilitation setting following traumatic brain injury. *Physiotherapy Theory and Practice*, 1-7. doi:10.1080/09593985.2018.1474305

Reynolds, M., Driver, S., Bennett, M., Patel, S., Rainey, E., Warren, A., Dutton, G. (2018). Examining the relationship between obesity and mental health outcomes among individuals admitted to a level I trauma center. *Clinical Obesity*. doi: 10.1111/cob.12264

Hart, T., Driver, S., Sander, A., Pappadis, M., Dams-O'Connor, K., Bocage, C., Hinkens, E., Dahdah, M., Xinsheng, C. (2018). Traumatic brain injury education for adult patients and families: A scoping review. *Brain Injury*, 1-12. doi:10.1080/02699052.2018.1493226

Reynolds, M., Driver, S., & Bennett, M. (2018). The social network – using social media to support individuals with traumatic brain injury participating in a pilot study weight-loss program. *Brain Injury*, 1-5. doi:10.1080/02699052.2018.1496480

Agtarap, S., Carl, E., Reynolds, M., Roden-Foreman, K., Bennett, M., Rainey, E., Powers, M., Driver, S., Warren, A. (2018) Caregiver expectations of recovery among persons with spinal cord injury at three and six months post-injury: A brief report. *The Journal of Spinal Cord Medicine*. DOI: 10.1080/10790268.2018.1508953

Wang, W., Macaulay, W. (2018) Opioids vs nonopioids for chronic back, hip, or knee pain. *The Journal of the American Medical Association*.

Dubiel, R., Callender, L., Dunklin, C., Harper, C., Bennett, M., Kreber, L., Auchus, R., Diaz-Arrastia, R. (2018) Phase 2 randomized, placebo-controlled clinical trial of recombinant human Growth Hormone (rhGH) during rehabilitation from traumatic brain injury. *Frontiers in Endocrinology, section Neuroendocrine Science*.

## Brain Injury Research



### Developing an evidence-based approach to promote a healthy lifestyle

The brain injury research team, led by Simon Driver, PhD, director of rehabilitation research and Ginger Murchison Endowed Chair for Traumatic Brain Injury at Baylor Scott & White Institute for Rehabilitation (BSW Rehab), is conducting innovative research investigating approaches to promote a healthy lifestyle for people following a traumatic brain injury (TBI) and stroke. Dr. Driver is currently principal investigator on two federal grants funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) that involve modifying and assessing the efficacy of an evidence-based healthy lifestyle intervention (90DPTB0013; 90IFRE0021), called the Diabetes Prevention Program Group Lifestyle Balance (GLB). The GLB is a 12-month self-management intervention that improves physical activity and healthy eating behaviors and has been demonstrated to reduce an individual's risk of diabetes. "Weight gain is a significant health issue faced by people with TBI and stroke, so physical activity and healthy eating behaviors

can play an important role in people's health and function," notes Dr. Driver. "Our brain-injured patients' health can be extremely complex, so identifying approaches that meet their unique needs and reduce their risk of chronic diseases such as diabetes, metabolic syndrome, and heart disease are greatly needed. The funding we were awarded by NIDILRR provides us with an invaluable platform to systematically develop and disseminate an evidence-based approach to weight-loss to specifically meet the needs of people with TBI and stroke."

### Newly-funded grant focused on weight loss after stroke

Dr. Driver began work on the recently-awarded three-year grant from NIDILRR (90IFRE0021) in October 2018 that involves modifying the GLB program for people post stroke and then testing the efficacy of the adapted intervention. "The GLB is recognized by the Centers for Disease Control and Prevention (CDC) as an evidence-based approach to diabetes prevention and is eligible for CMS reimbursement, but the program has not been tested directly with people after stroke,

so we're excited to have funding to strengthen the science for this population," explains Dr. Driver. The research team is convening an advisory board of clinicians, community organizations, researchers, caregivers, and individuals who have had a stroke to provide feedback on the curriculum and how it could be modified to meet the unique needs of people following stroke. This group of stakeholders also will support the development of a dissemination plan to get the program into the community. "Our stakeholders were key to identifying the need for the project, and we're thrilled that we're able to continue partnering with them on the program modifications and delivery," adds Driver. "With their input and support, we are confident we will be able to address the healthy lifestyle needs of people post-stroke living in our community." Investigators will enroll 66 people to complete the program over the next three years.

### North Texas Traumatic Brain Injury Model System

Since 2002, BSW Rehab, in a unique collaboration with University of Texas Southwestern Medical Center, has made up the North Texas Traumatic Brain Injury Model System, one of 16 centers nationwide designated as a Model System of care for patients with TBI. The TBI Model System (TBIMS) grant (90DPTB0013) is competitively funded by NIDILRR and recognizes BSW Rehab as a national leader in rehabilitation research and clinical care, providing a high level of comprehensive inpatient specialty rehabilitation services through eventual re-entry into community life. Randi Dubiel, DO, director of the TBI program at BSW Rehab and co-investigator of TBIMS, highlights the importance of the link between clinical practice and research because of the TBIMS project. "Functional recovery after TBI can be a complex process that is best managed with expert rehabilitation care," says Dr. Dubiel. "By being a part of the TBIMS program, not only are we able to offer comprehensive specialized care to our patients and their families, but we can provide them the opportunity to participate

in cutting-edge research projects. It is through such research that we are able to modify our existing clinical programs to help our patients receive optimal resources to achieve the best clinical outcomes."

### Using mobile apps to support a healthy lifestyle

As part of the current funding cycle (2017-2022), the research team led by Dr. Driver, who serves as the project director, is examining if integration of a mobile app into the GLB program can support weight loss and boost participant motivation. "When we pilot tested the GLB program, our participant's compliance decreased as the in-person sessions went from weekly to monthly. People told us they sometimes forgot to follow a healthy diet and be physically active because they weren't spending as much time with the coaches." While people lost a significant amount of weight during the program (10 pounds or 5 percent of their body weight), the rate of weight loss decreased over the 12-month program, with the majority of change occurring in the first three months when participants met weekly with a lifestyle coach.

Participant feedback played a critical role in helping the research team find ways to improve the GLB and keep people engaged with the program. "Our participants and stakeholders told us they wanted more contact with the lifestyle coaches – to motivate and remind them to be active and eat healthy food," notes Dr. Driver. "So, we developed a mobile app with the help of people with a TBI that we hope will help with program engagement and result in even greater weight loss."

The research team is also examining the impact of participation on biomarkers (A1C, lipid panel, waist circumference), functional outcomes (tests of walking speed and duration) and psychosocial outcomes (self-efficacy, depression).

## Improving patient health through TBIMS collaborative projects

BSW Rehab researchers also are collaborating with investigators from other Model Systems across the United States.

Investigators are part of a newly funded grant that involves collaborating with eight other TBI Model System centers and one Veterans Administration (VA) TBI center on a study that aims to characterize and understand the treatment of chronic pain after TBI. The five-year observational cohort study will identify the types of pain people with TBI face, the impact of pain on daily life, and gaps in treatment practices by clinicians who treat co-morbid pain after TBI. Investigators hope the study findings will help clinicians target the treatment of pain for people after TBI.

Other projects include examining the relationship between physical activity, cognition, and secondary conditions that can occur in the first-year post-injury, the impact of health literacy on health-related outcomes, and a novel problem-solving training intervention for care partners after TBI. “The common goal across all of these projects is to identify approaches to maximize patient recovery – be it directly with the patient or by supporting their care partners who are so important to recovery,” explains Dr. Driver. “The fact we are able to complete these multi-site collaborative projects allows us to pool resources and expertise to maximize the impact of our work.”

## Updates on other TBI funded research

Drs. Driver and Dubiel are in the second year of the Brain Injury Rehabilitation Improving the Transition Experience (BRITE) project funded by the Patient-Centered Outcomes Research Institute (PCORI). The study, a collaborative project among five other TBI Model System sites, involves patients with TBI and

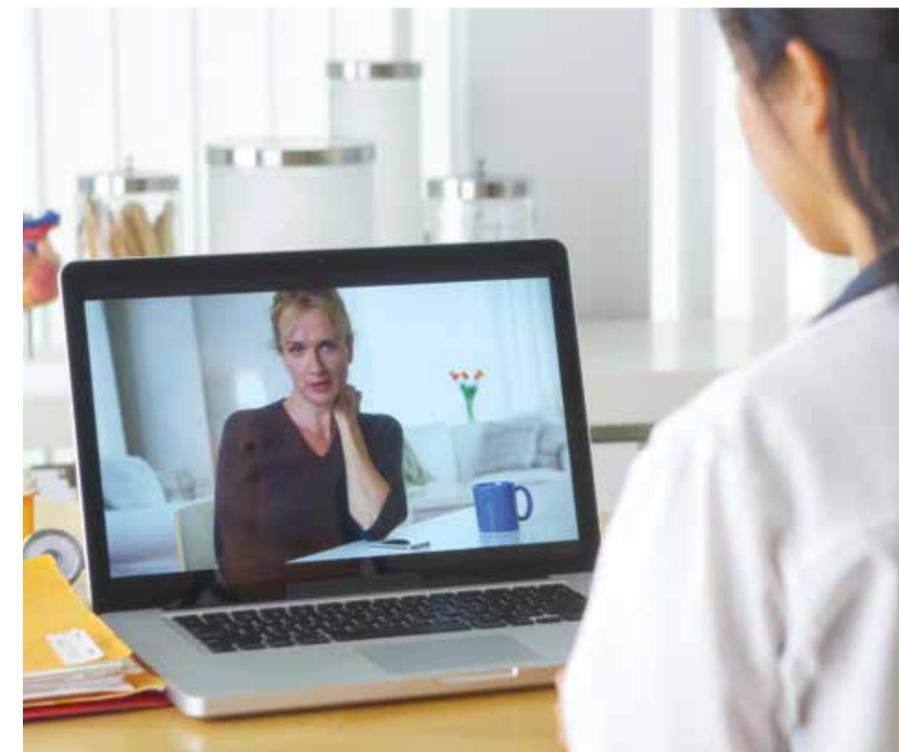
caregivers being randomized to one of two groups **(1)** standardized discharge care, which includes advice and referral sources, or **(2)** standardized discharge care with a TBI care manager (TCM), who coordinates care and provides resource facilitation via telephone. The intervention started in February 2018 with over 75 patients and caregivers from BSW Rehab enrolled.

The TCM begins working with patients and caregivers within the first week post-discharge, and their meetings occur via phone or video conference for up to 12 scheduled calls within the first six months post-discharge and then on an as-needed basis. During each contact, the TCM leads patients and caregivers through a structured needs assessment to determine unmet needs in key domains of function, helps prioritize and address needs, and facilitates resources (i.e., follow-up appointments, transportation, housing, scheduling, and insurance). The main goal of the study is to discover how enhancing the transition from the hospital to home after injury can improve the lives of people with TBI, the lives of their families, and better support other healthcare clinicians. “Following moderate to severe TBI, patients can require hospitalization for many days, weeks, and even months,” notes Dr. Dubiel. “There is a great need for ongoing support of patients and caregivers after they leave the hospital following TBI, as they move from a very structured and supportive system to home life. The transition can be overwhelming, chaotic and complicated leading to unnecessary and avoidable challenges for survivors and those caring for them. We’re hoping to change that by helping the transition home with the help of skilled case managers who can offer assistance in navigating the recovery journey.”

During the intervention, TCMs use motivational interviewing and other engagement strategies to complete the needs assessment and build trust and rapport with patients and caregivers. Motivating patients to work toward their goals in the weeks and months following discharge offers unique challenges including their caregivers’ return to work, grief, and other reintegration concerns. Maria Cole, MPH, LMSW, TCM at BSW Rehab notes, “My most important role is ensuring that patients with TBI and their caregivers have a voice in their recovery journey and help them connect with the services that they need.”

BSW Rehab and Marie Dahdah, PhD, site principal investigator, is in the third and final year of the PCORI funded study: Comparison of Sleep Apnea Assessment Strategies (C-SAS) to Maximize TBI Rehabilitation Participation and Outcome, a collaborative project among the Veterans Administration (VA) and six TBIMS inpatient rehabilitation facilities. This comparative effectiveness study compares sleep apnea screening methods, traditional risk factor questionnaires (e.g., STOPBang), and actigraphy to identify TBI survivors at high risk for sleep apnea, as diagnosed via Level 1 Polysomnography (PSG). Further, this study compares the sensitivity of Level 1 PSG compared with portable Level 3 PSG in diagnosing sleep apnea. The expectation is that both types of PSG will be equivalent, therefore increasing patient/consumer access to diagnosis and treatment via Level 3 PSG.

“As of November 6, 81 TBI survivors have enrolled in this study. Of those 81, we have successfully completed 58 PSGs with two more scheduled,” reports Amber Merfeld, MPH, site study coordinator. “This study has contributed uniquely to the body of literature surrounding sleep apnea,” says Dr. Dahdah. “We have already demonstrated that sleep apnea is three times more prevalent, on average, in our inpatient TBI population compared with the general population. By diagnosing patients early in their medical rehabilitation, we expect to see improvements in cognition, energy, participation in rehabilitation,



and rehabilitation outcomes. More importantly, earlier diagnosis has allowed us to facilitate earlier treatment referrals in conjunction with the medical team.” Dr. Dahdah adds, “We’ve discovered associations with increasing age, weight, and predictors of oropharyngeal obstruction. Combining this data with the TBIMS longitudinal data will provide insight into the impact of sleep apnea on recovery and outcome after TBI that could ultimately lead to a new line of sleep research and interventional trials.”

## Spinal Cord Injury Research Expands



Baylor Scott & White Institute for Rehabilitation's (BSW Rehab) portfolio of funded research in spinal cord injury (SCI) research has increased substantially since 2016 when Katherine Froehlich-Grobe, PhD, was hired as associate director of research. In 2018, BSW Rehab received three new SCI-focused grants, under the direction of Dr. Froehlich-Grobe. These funds will allow BSW Rehab to conduct two different innovative research studies to address cardio-metabolic health of those with SCI, and a third grant targets improving clinical care by enhancing the organization's existing peer mentoring program.

"Understanding and reducing cardio-metabolic risk for individuals with SCI has been a growing concern of healthcare professionals who work with SCI patients," says Dr. Froehlich-Grobe. "Physical inactivity due to SCI, along with potentially limited access to home and community environments, often leads to increased body fat, as well as obesity-related chronic conditions such as glucose intolerance, diabetes, high blood pressure and dyslipidemia." A two-year pilot study funded by the Craig H. Neilsen Foundation (grant #541948) will allow

researchers at BSW Rehab to meet with 60 individuals with SCI three times during the course of the study: before they discharge from the rehabilitation hospital, at six months, and at one year post-discharge. During each meeting, researchers will assess physical changes



Emmett Pryor and Kathi Eteaki - GLB-AIM program participants

in weight, waist circumference, blood pressure, fasting glucose, lipid profile and resting metabolic rate of the individuals. Changes in their physical activity levels and access to kitchen appliances in their homes also will be

recorded. "The evidence that we will gather from this study can help us target nutrition education and intervention earlier in their injury," notes Seema Sikka, MD, director of SCI research and quality. "Our hope is that it will prevent weight gain and obesity among our SCI population."

A second study funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR, grant #90IFRE0022) will examine the combined effects of three specific evidence-based approaches to support behavioral changes of SCI patients that promote weight loss. The BSW Rehab study team, led by Dr. Froehlich-Grobe, will investigate the effectiveness over 13 weeks of weight loss by providing portion-controlled meals using enhanced self-monitoring, and adapting the Group Lifestyle Balance Adapted for individuals with Impaired Mobility program (GLB-AIM) to address the needs of people with SCI. The team hypothesizes that combining these approaches into a single multi-component program will help researchers identify whether these different approaches successfully used with the general population can also help those with SCI to achieve weight loss that will reduce their risk of chronic diseases. "Many of my patients need to lose weight and have asked me in the past if I know of a good weight loss program," notes Rita Hamilton, DO, director of SCI. "Unfortunately, there really aren't any programs that I can refer them to that understand patients with SCI or have a scale

accessible for this population." One exciting component of the study is that two individuals living with SCI and who successfully lost weight in the initial study of GLB-AIM program - Kathi Eteaki and Emmett Pryor - will be hired by BSW Rehab to deliver the new program.

A third grant was also awarded by the Craig H. Neilsen Foundation (grant #581754) to improve community participation and independence of BSW Rehab SCI patients through enhancing and expanding its existing SCI peer-mentoring program. "Many of our BSW Rehab patients want to participate in our ongoing program such as Support Challenge Inspire group meetings, where they can connect with other people with SCI," notes Lea Goad, BSW Rehab - Dallas recreation therapist, who led efforts to apply for funds to expand the current program. "But these patients live too far to make the drive, or do not have access to transportation." The one-year grant allows BSW Rehab the opportunity to: **(1)** provide six of the current volunteer peer mentors to be paid up to 10 hours a week to establish a six-month mentoring relationship with BSW Rehab's SCI patients; **(2)** purchase tablets that can be loaned to BSW Rehab patients living outside the Dallas-Fort Worth Metropolitan area to access BSW Rehab's monthly peer support program and to allow virtual connectivity to their peer mentor; and **(3)** establish an online resource for SCI patients for use after they discharge from BSW Rehab.

### BSW Rehab Peer Mentors



Richard Singleton



Makeia Williams



Chad Hebel



Dawn Brewster



Brian Shaner



Helena Sparling



Ashley Barnes

## Virtual Care for Neonates



The development of innovative programs to support fragile neonates is one of the most important priorities of Baylor Scott & White Institute for Rehabilitation (BSW Rehab). In providing neonatal therapy for Baylor Scott & White Health (BSWH), a healthcare system that includes 48 hospitals, many of them in the sprawling Dallas-Fort Worth Metroplex, ensuring that neonates receive care at the most appropriate facility can be challenging. Transferring these patients among hospitals is often stressful for them and their families: a long ambulance ride can be traumatic for a fragile neonate and moving them away from their communities can disrupt their ability to feed and bond with parents, which is critical to their ability to thrive.

*“The most important benefit of this innovative program is how patient-centric it is.” – Dr. Hull*

The need for innovation developed when a neonate was unable to discharge from one of the BSWH community hospitals because he was having trouble feeding and

potentially required a gastrostomy tube placement, a procedure his parents preferred to avoid. The neonatal therapy team with the expertise needed to care for the patient was at Baylor University Medical Center (BUMC), 45 miles away. Team members involved in the patient’s care—including Sandra Carroll, OTR, CLC, CNT; Kim Ellis, PT, MSPT, MSE; Brian Hull, PT, DPT, MBA; Donna Kaufhold, MBA, OT; and Molly Richards, MS, CCC-SLP—wondered whether there was a way they could consult with the BUMC team without subjecting the patient to a hospital transfer, which would require a long ambulance ride and separation from his family (including two neonate siblings). “We thought, there is telemedicine—why can’t we do something similar?” recalls Donna Kaufhold.

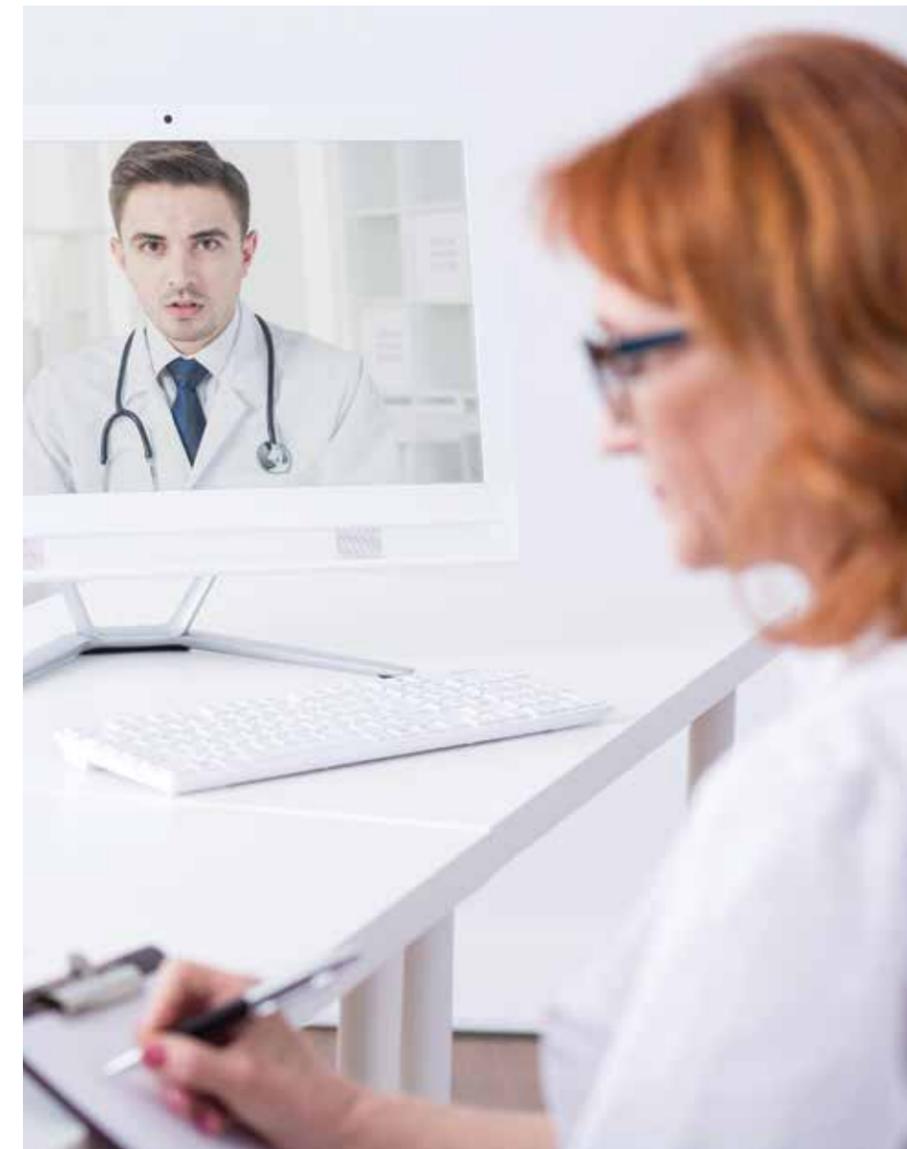
Telementoring was the team’s solution. Members of the interdisciplinary care teams at both hospitals used secure videoconferencing to view and assess the patient over several days and discuss potential treatment plans, in real time. With telementoring, the team was able to improve the baby’s ability to eat and eventually send him home without performing a gastrostomy tube placement.

“The most important benefit of this innovative program is how patient-centric it is,” Dr. Hull says. “We were able to keep the baby as close to the parents as possible, preventing the G tube placement. The baby’s swallowing problems were managed, and he was able to thrive. A secondary benefit is cost savings—these two neonatal teams were able to work together to save the unnecessary costs of transfers. So, these teams came together with their expertise and improved care on multiple fronts.”

To develop the telementoring program and ensure it was compliant with HIPAA, team members worked closely with members of the BUMC stroke team, who had expertise in the use of telemedicine, as well as representatives from legal, compliance, and information technology departments.

*“Our hopes are that telementoring will become the new normal and will allow an expert level of care no matter the geographic location of the patient.” – Sandra Carroll, OTR, CLC, CNT*

Eventually, the team plans to expand the telementoring program to additional hospitals first within, and then outside of the BSWH network. “We are excited to see the impact this program will have as we begin to replicate this model throughout the North and Central Texas regions,” Ms. Carroll says. “Our hopes are that telementoring will become the new normal and will allow an expert level of care no matter the geographic location of the patient.”



## Patients Find Healing Through Community Support Groups and Programs



Many of Baylor Scott & White Institute for Rehabilitation's (BSW Rehab) staff embrace its mission: Founded as a Christian ministry of healing, Baylor Scott & White Health promotes the well-being of all individuals, families and communities. By providing specific programs, as well as supporting and partnering with various organizations that provide outreach to the community, BSW Rehab helps former patients access the resources they need during their journey to recovery.



At the Dallas campus, patients with spinal cord injury (SCI) can participate in the Support Challenge Inspire program that provides monthly meetings, guest speakers, and outreach through RISE adaptive sports events and other activities.

Led by Lea Goad, a recreational therapist at BSW Rehab - Dallas and a former patient herself after suffering a spinal cord injury as a teen, Support Challenge Inspire offers patients a needed resource for managing day-to-day activities such as grocery shopping. For her efforts in building Support Challenge Inspire



into the popular resource for current and former patients that it has become, Ms. Goad received the 2018 Community Service Award from the Dallas-Fort Worth Hospital Council Foundation, an organization made up of all of the major healthcare organizations in the DFW Metroplex.



Another SCI-focused support group – The Christopher and Dana Reeve Peer Mentorship Program – connects volunteers from the community with inpatients who have spinal cord injury. Mentors, many of whom are former patients, provide support and encouragement during the recovery process.

Mountain High Camp, a unique five-day camping event for adults with brain injury, is another organization that BSW Rehab supports. About a dozen therapists, nurses and physicians invite 60 survivors of traumatic brain injury and their families to a camp in Red River, New Mexico, for picnics, games, dancing, fishing, church services, shopping, fellowship, and other activities. Founder Charlotte Wilson, a former BSW Rehab - Dallas employee, says the experience is both healing and inclusive for campers. "The campers will say 'thanks for letting me feel normal for five days.'"

BSW Rehab - Dallas also hosts a community and after-hours exercise program. For a nominal fee, community members can access the large aquatics center with trained staff to support them in their fitness needs and goals. The after-hours program is free for patients who can use therapy equipment under the supervision of trained technicians.



Walk and Roll with Walk with a Doc is an exercise monthly program that gets SCI patients and community members out for strolls with physicians and other staff members. BSW Rehab - Dallas was the first healthcare organization in the country to add the "and Roll" for wheelchair-bound patients into the national program.

For her efforts in helping SCI patients in and outside of the hospital, Rita Hamilton, DO, director of the SCI program at BSW Rehab - Dallas, received the Association of Spinal Cord Injury Professionals James J. Peters Distinguished Service Award at its 2018 annual conference (pictured with Jeff Johns, MD, ASCIP President). This award is provided to those who demonstrate outstanding leadership on a national level through developing high quality programs and impacting individuals with spinal cord injury.



In addition to these programs and partnerships at its Dallas campus, BSW Rehab offers community outreach programs at its Frisco hospital. A neuro support group, which is run by former patients, meets monthly, while inpatient support groups are offered every weekend. The inpatient groups are led by two former patients, a traumatic brain injury survivor and a stroke survivor, who discuss their personal stories and experiences as a way to let patients know what they and their caretakers might expect during recovery. A third former patient teaches physics through Legos to help patients with fine motor skills



Douglas school in Parkland, Florida, through its event, Creating Kindness Rocks. Led by Rachel Hazzi, a recreational therapist at BSW Rehab – Frisco and former student at Stoneman Douglas, the patients painted rocks that were sent to the students at the school to help spread a message of hope. The project helped patients work on their creative abilities and fine motor skills while giving back to the community.



and focused attention, while a fourth is a former plastic surgeon who offers a more clinical perspective.

Staff and patients at BSW Rehab – Frisco’s Day Neuro clinic wanted to show their support of Stoneman

BSW Rehab – Frisco also offers a rotating physical fitness series featuring chair yoga and boxing. The boxing class is led by a three-time traumatic brain injury survivor, who works with patients in either sitting or standing positions to help them with reach and balance.

This past year, BSW Rehab – Frisco hosted the National Stroke Association Comeback Trail, a national run/walk celebrating the physical, mental, and spiritual journey of stroke recovery. The organization doubled the number of participants and tripled the donations for this event.



BSW Rehab – Fort Worth staff organized an ice cream social to raise money for the Alzheimer’s Association – North Central Texas Chapter’s Longest Day event. The hospital was one of several locations throughout Fort Worth for participants to stop off at to bring awareness to the cause.

Giving back to the community is also embraced by the Outpatient Therapy area of BSW Rehab. Many of its individual clinics hold events within their communities such as BSW Rehab – Midlothian in its annual Franks for Firefighters.

BSW Rehab staff also came out to support the annual Memorial Day event – Carry



the Load – which raises support and awareness of veterans’ sacrifices. Participants walk across the country over a three day period – many wearing heavy backpacks to symbolize them “carrying” a former comrade who may not have survived – and end the walk in Dallas’ Reverchon Park.

Over the Christmas holidays, all of the outpatient therapy clinics collected toys from patients and families to support a local TV station’s annual toy drive. This year,



BSW Rehab – Outpatient Therapy donated nearly 2,000 toys to the cause and were recognized on the station’s live news broadcast.



Each year, BSW Rehab selects a charity to support through its IMPACT awards program. The 2018 recipient was the Adaptive Training Foundation, an exercise gym for injured veterans and others who have suffered debilitating injuries. ATF’s focus is to support and challenge athletes to reach previously unimagined goals. This year’s program raised nearly \$6,000 by BSW Rehab staff in support of ATF.



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