COMMUNITY HEALTH NEEDS ASSESSMENT

THE REHABILITATION INSTITUTE OF SAINT LOUIS
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I. EXECUTIVE SUMMARY

The Rehabilitation Institute of Saint Louis is a 96-bed acute-rehab hospital located at 4455 Duncan Ave. in the Central West End of St. Louis City. We are a joint venture entity between HealthSouth (for-profit) and Barnes-Jewish Hospital (not-for-profit) with affiliation with the Washington University School of Medicine. We have both inpatient and outpatient services for the residents of St. Louis City and surrounding areas. We offer expertise in many rehabilitation programs and treatments designed to meet the needs of specific conditions.

The conditions we treat are:

- Stroke
- Amputations
- Arthritis
- Brain Injury
- Multiple Trauma
- Hip Fractures
- Joint Replacement
- Burns
- Neurological Disorders
- Spinal Cord Injury
- Other Orthopedic Injuries/Conditions.

Our hospital complies with local, state and federal regulations. We are accredited by The Joint Commission, a leader in determining quality and safety standards for healthcare delivery, and the Commission on Accreditation of Rehabilitation Facilities (CARF).

In addition to Joint Commission accreditation, our certified stroke program has earned Disease-Specific Care Certification from The Joint Commission. We also have disease specific Stroke Certification for CARF.

According to the Patient Protection and Affordable Care Act (PPACA) passed in March 2010, all not-for-profit hospitals are required to complete a community health needs assessment (CHNA) and implementation plan every three years. Because of the relationship between The Rehabilitation Institute of St. Louis (TRISL) and BJC HealthCare, it was determined that TRISL is required to participate in this process. As part of this process, each hospital must solicit input from those who represent the interests of the community served by the hospital, as well as those
who have special knowledge or expertise in the field of public health. We must also include in the assessment a clear definition of a community. TRISL has defined St Louis City- the city in which it is physically located, as the primary community for this CHNA.

**Reason for the Report:** To continue to improve the rehabilitation services and resources we provide for our patients and their families in the community in which we serve, we conducted a Community Health Needs Assessment (CHNA). We obtained input from various agencies in both the rehabilitation and public health settings.

**Methodology:** We started by creating a list of rehabilitation community resource groups, as well as public health experts. In being part of the BJC health group we had access to the BJC market research group to help us conduct the focus groups and provide the findings of the interviews and surveys. With these interviews we obtained a good foundation for assessing the community needs and used them to fine tune our focus.

We also used sources for data collection on Traumatic Brain Injury, Stroke, as well as on population, ethnicity, education, insurance, and social economic characteristics from additional sources. Our sources included:

- Missouri Information For Community Assessment (MICA)
- Missouri Department of Health and Senior Services Green Book
- Healthy Communities Institute (HCI)
- CDC National Health and Nutrition Examination Survey (NHANES)
- US Census Bureau
- Thompson Reuters.

**Findings**

The findings that the external group surveys revealed that the greatest needs as seen by our workgroup were:

- Access to Services
- Inadequate Health Coverage
- Education
- Transportation
- Exercise.

We looked at our patient population and found the greatest need in our two highest conditions we treat in the rehabilitation population to be:

- Stroke
- Brain Injury.
The internal workgroup looked to several sources of secondary information to validate the two areas we felt had the greatest need to validate our selections.

The internal workgroup met in two roundtable discussions to examine the external focus group interviews and looked at our own data for greatest needs among our inpatients and outpatients. They noted that the greatest gaps that we could address would be limited due to our facility size and staffing. The group looked at the programs we already offered and looked for overlaps in the data.

Our next step was to create a realistic list based on our staffing allowances, in-house expertise, current offerings and financial constraints. We created a short list of those our focus group identified and the ones we prioritized from the list as being sound and reasonable efforts that would be successful to best serve our community.

Conclusion: Based on the research from our study, our resources, expertise, and current offerings the following will be the focus of our implementation plan:

- Stroke Education & Prevention
- Brain Injury Awareness Education (caregiver/family/prevention).
II. COMMUNITY DESCRIPTION

A. Overview and Map

The Rehabilitation Institute of Saint Louis is located at 4455 Duncan Ave. in the Central West End of St. Louis City. For the purposes of this survey, the community that we serve would be defined as St. Louis City. It is approximately 62 square miles in size and has a population of about 5,157 per square mile, according to 2010 census statistics. It is bordered by the Mississippi-Missouri Confluence to the north, the Mississippi River on the east, River Des Peres on the south and St. Louis County on the west.

St. Louis City is broken down into 79 distinct neighborhoods, as pictured below in the map. The neighborhoods were once very ethnically divided but over the past 50 years those ethnic areas have changed and become more diverse in makeup.
B. Demographics

Population

In order to effectively look at the urban community we serve, we first had to look at the demographics of the region.

St. Louis City has a population of 319,294 which is about 5.5% of the state of Missouri’s total population in comparison to St. Louis County at 992,412 or about 16% of the State. St. Louis City population has been slowly declining since 2010 by about a rate of .4% over three years and is expected to continue to decline at a similar rate over the next three years, even though Missouri population is expected to increase by a total of 0.6% overall.
Our patient population varies. An estimated 50% come from St. Louis City, 12% come from St. Louis County, and 38% come from either Missouri counties beyond St. Louis County or out of state completely.

Age

The City of Saint Louis has a median age of 33.9 years which is slightly lower than Missouri’s median age of 37.0 years.

St. Louis City Age Breakdown

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5 years</td>
<td>21,089</td>
<td>6.6</td>
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<tr>
<td>5-19 years</td>
<td>56,841</td>
<td>17.8</td>
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<td>20-29 years</td>
<td>60,843</td>
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<td>30-44 years</td>
<td>65,914</td>
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<td>45-59 years</td>
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<td>60-79 year</td>
<td>39,079</td>
<td>12.2</td>
</tr>
<tr>
<td>80 years and over</td>
<td>10,840</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Source: US Census Bureau

Race and Ethnicity

St. Louis City varies greatly in racial and ethnic composition as compared to other areas in Missouri. St. Louis City is 49.2% Black/African American, 43.9% White, 3.5% Hispanic, 3.4% other. With about 50% of the city being Black/African American, health concerns increase as they seem to have higher rates of high blood pressure, diabetes, and subsequently are at a greater risk for developing strokes.
Household Income

The average household income of a St. Louis City is $34,402, which is much lower than the Missouri average of $47,202. It is also noted that approximately 26% of St. Louis City Residents according to the US Census Bureau are living below the poverty level (household income less than $15K) as compared to the much lower levels in surrounding counties and Missouri’s rate of about 14.0%. Below-poverty-level and low-income families generally have less access to
healthcare, especially preventative healthcare, and often use urgent care versus primary care when healthcare is sought.

![Annual Mean Household Income Chart]

**Annual Mean Household Income**

Source: US Census Bureau

**Education and Unemployment**

According to the U.S. Census Bureau, approximately 81.9 percent of St. Louis City residents have at least a high school education or greater in residents over age 22. At 18.1% we exceed the statewide average of 14% and the 9.6% in St. Louis County that do not have at least a high school diploma.
Subsequently lower levels of education are usually sound indicators of higher unemployment rates as well. St. Louis City has a current unemployment rate of about 9.9% compared to about 7% in St. Louis County and about 7.1% for the state.

![Education and Unemployment Chart]

Source: US Census Bureau

**Insurance Status**

People without health coverage are at risk for inconsistent and insufficient care. They often lack access to preventative care, do not have a primary care physician to coordinate care, and tend to be more ill than the insured when they do present to a healthcare professional for treatment.
Unemployment, inability to afford premiums, and recent changes in employment are just a few of the reasons that about 14% of all Missourians are uninsured, according to 2011 statistics.

**Socioeconomics**

All in all, the socioeconomics of a community greatly influence the health of a community. Education, income, unemployment, and insurance are all key predictors in assessing a communities’ health. Low-income and impoverished households tend to suffer from improper diets and have limited availability to healthcare. It was important for our research to understand the community which we serve in order to better serve it.

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**III. CONDUCTING THE ASSESSMENT**

A. Work Group Structure
The Rehabilitation Institute of St. Louis (TRISL) formed an internal CHNA Work Group of clinical and nonclinical staff to analyze primary and secondary data. The internal work group members were selected based on their background and experience in community outreach, public health, and TRISL census and admission.

The internal team included the CEO, Controller, Therapy Managers (both Inpatient and Outpatient), Marketing, Materials Management and Social Services.

B. Primary Data Collection: External Focus group

BACKGROUND

According to the Patient Protection and Affordable Care Act (PPACA) passed in March 2010, all not-for-profit hospitals are required to complete a community health needs assessment every three years. As a part of that process, each hospital must solicit input from those who represent the interests of the community served by the hospital, as well as those who have special knowledge or expertise in the field of public health. Because of the relationship between The Rehabilitation Institute of St. Louis (TRISL) and Barnes-Jewish Hospital, it was determined that TRISL is required to participate in this process.

RESEARCH OBJECTIVES

The main objective for this research is to solicit input from experts in the area of rehabilitative health and those who have a special interest in the rehabilitative population served by TRISL.

METHODOLOGY

To fulfill the PPACA requirements, TRISL obtained input from rehabilitation and public health experts. Hospital representatives created a list of community leaders who were each sent a letter (Appendix A) from former TRISL CEO, Jon McDowell, inviting them to participate in the process. Each member of the group was contacted individually by telephone to schedule and complete a 30-minute interview regarding the rehabilitative health needs in St. Louis City.

Eleven individuals from various St. Louis metropolitan area organizations were interviewed (Appendix B). Each individual was sent a worksheet to complete prior to the interview to identify their perceptions of the greatest health needs related to rehabilitation in St. Louis City, their knowledge of available resources to address these needs, and the greatest gap that exists between need and available resources (See Appendices C, D and E). The interviews took place between July 17, 2013 and August 14, 2013.

Key Findings
The transcripts of the telephone interviews were analyzed for relevant data. The following needs were identified and are listed from those most frequently mentioned to least.

The top two needs in the area of rehabilitation services are closely linked and are identified as Access to Services and Inadequate Insurance Coverage.

**Access to Services/Resources (8 mentions)**

There are many types of services that, if available to rehabilitation patients, would allow them to recover more quickly and completely, and remain in their own homes rather than needing residential care. These include:

- Intensive day treatment programs and other outpatient services
- Access to social support services that would allow them to remain at home
- Clinical staff who can effectively connect them to community resources
- Services that support caregivers who are caring for those with chronic conditions, such as stroke and Parkinson’s
- Resources for those who do not have insurance
- Vocational services for those who have had strokes and non-traumatic brain injuries (like tumors) and are over age 22
- Cognitive rehabilitation for survivors of brain injury (executive functioning, reasoning, problem solving, organizational skills).

**Inadequate Healthcare Coverage (8 mentions)**

Most insurance does not cover enough therapy sessions for a patient’s full recovery.

- Nine therapy sessions are not enough for regaining independence or returning to work.
- Maintenance services are also often not covered. It is important for patients to continue therapy, even if it seems that they are no longer making improvements. Maintenance therapy helps individuals stay independent and prevents regression.
- Insurance does not cover some equipment needed by patients in their homes.
- Insurance does not cover home health care for Medicaid patients, and as a result, they will most likely require residential care. In 2006, Medicaid also stopped covering cognitive therapy.
- There is a lack of information about what services are available for those with no or minimal insurance coverage.

**Resource Knowledge (7 mentions)**
• Patients and their families are generally lacking information about what resources are available in the community and where to find them.
• Education is needed in regard to what the hospital provides, what insurance covers, what might be needed for the patient after their hospital stay, and the resources available to them.
• Patients often do not know where to find and how to access certain resources (for example, medical specialists or financial aid for outside programs), even if they are aware that they exist.

Transportation (5 mentions)
• Patients have limited access to dependable transportation that is handicap-accessible.
• The transportation resources currently available are still difficult for patients to use regularly, especially for doctor visits and medical appointments.

Provider Education (4 mentions)
• There is a need for ongoing education regarding up-to-date evidence-based practices among medical providers about brain injury and its treatment, especially among family practitioners.
• They also need to be informed about community resources and outpatient services that are available to their patients in the community.

Support Groups for Patients and Their Caregivers (3 mentions)
• There are no known support groups in St. Louis City for rehabilitation patients.
• Patients need to have more access to support services after hospitalization, such as counseling.
• Care takers often need education about how to do those tasks that may be new to them: cooking, doing laundry, paying bills, auto maintenance.

Continuity of Care (3 mentions)
• It is sometimes difficult for patients to transition from inpatient care to the home because there is a lack of continuity.
  ➢ This may be due to a lack of effective communication between hospitals and after-care providers and/or between hospitals and patients about their instructions for continuing care and treatment.
• The links between inpatient care and outpatient resources or community services should be more formalized connections.
• For patients who are not quite ready to return to work, there is no place for them to go. There is a gap in service availability here.
Once a patient has been returned to the community, there is also a need for follow up to track any changes occur in their status and address them before further deterioration sets in.

**Patient and Family Education (3 mentions)**
- There is a need for general education about stroke and heart attack prevention, signs and symptoms that require immediate attention, and how to reduce the risk for a subsequent stroke among survivors.
- Patient and their families need additional education about the prevention and treatment of secondary conditions that may develop following a brain injury, like pressure ulcers.
- It is also important for the public to be aware about when to contact EMS rather than self-transporting to the hospital.

**Residential Care (3 mentions)**
- There is not enough residential care and accessible housing for those with traumatic brain injury.
- Group homes and transitional living options are needed, especially for those over age 22.

**Exercise (3 mentions)**
- Exercise is an important part of the rehabilitation process and more rehab-specific classes should be offered.
- Strength training is also important for those who want to learn how to drive.

**Mental Health Services (3 mentions)**
- Those who have experienced a brain injury often suffer from depression or other psychological disorders.
- There is a need for mental health professionals who understand brain injury and can effectively counsel patients on how to deal with the subsequent psychological issues they may be facing.

**Other Concerns**
- Obesity (2 mentions)
- Substance Abuse (2 mentions): May contribute to brain injury, as might the late effects of chemotherapy as a result of people surviving cancer.

**Barriers Identified**
- Cultural
- Financial

**POPULATIONS AT RISK**
Community stakeholders identified several different groups whom they felt were at higher risk of brain injury and subsequently in greater need of rehabilitation services. These included:

**African Americans:** They have higher rates of high blood pressure and diabetes, and therefore, are at greater risk of developing strokes.

- There is a concern that there are not enough programs targeted at reducing strokes among this group.
- There is also the perception that they have a higher level of mistrust of the medical community and may therefore be reluctant to seek care when it is needed.

**Elderly:** This group is at higher risk of falls, which is a major cause of traumatic brain injury.

**Children (birth – age 4) and teenagers/young adults (ages 16 – 19, or 16 – 24, depending on the source):** These groups are also considered to be at high risk for brain injuries.

**Those with dementia:** Those who suffer from this form of brain disease are in greater need of support services as are their caregivers.

**Caregivers:** These individuals may not have all of the skills they need to take care of their spouses and allow them to live comfortably at home.

**Those who are less well educated and those who have little/no insurance:** These individuals may not have the knowledge to identify what services are available or how to access them.

**HOW CAN THE COMMUNITY ADDRESS THESE ISSUES?**

Those who participated in the interviews had several suggestions as to how health care providers and community organizations could begin to address these issues.

- Create an accessible, collaborative list of community services, resources and other pertinent information and make it available to patients
  - Include transportation, support groups, counseling, housing, etc.
- Develop a more systematic way of communicating with the patients about resources outside the hospital
  - Potentially sub-contract with outside organizations to fill gaps in care after hospitalization
- Physicians should keep themselves up to date on all current brain injury knowledge in order to serve the patients better
• Create more support groups in the city for patients (specifically for those with Parkinson’s disease and their families)
• Provide education on identified issues for patients, families, and the community
• Support affordable, accessible housing for patients who are no longer in the hospital, but not ready to be independent
• Increase awareness of identified issues in the community.

WHAT ROLE SHOULD THE HOSPITAL PLAY?

When specifically asked to identify the hospital’s role in addressing these issues, area leaders had these suggestions:

Service Expansion:
• Offer cognitive therapy to survivors of traumatic brain injury in addition to physical therapy. Even though it was removed as a covered service by Medicaid in 2006, TRISL should continue to provide it as a part of charity care.
• Offer transportation services or provide information on where they might be found
• Make treatment options more easily accessible from home. Suggestions included offering home visits, developing a telehealth program, putting local branches in the community
• Offer exercise classes specifically designed for patients undergoing rehabilitation.

Community Coordination and Collaboration:
• Coordinate with other hospitals or community organizations to collaborate and streamline efforts rather than each operating in a “silo” and “reinventing the wheel.” An example might be to establish a relationship between Paraquad and the Community Practice Seating Clinic (at WUSM).
• Have TRISL staff serve on the boards of other independent living centers and community organizations to enhance the relationships between them.
• Have a Paraquad representative visit inpatients to inform them about what is available.
• Financially support the Brain Injury Association so that it can better assist their patients.
• Create a volunteer program that can connect retired health professionals with community programs to support those in rehabilitation.
• Report to the child’s school if there is a brain trauma in order to better support the child through the recovery process.
• Enhance communication between patients and providers. Make it easier to share information rather than requiring patients to repeat the same information numerous times.

Support Services:
• Offer support groups for recovering patients and their caregivers. There are no support groups for Parkinson’s patients in St. Louis city.
• Offer options for low-income or uninsured patients
  ➢ Suggestions: payment plans, learning sites for students, partner with other organizations
• Extend the Partner in Stroke program from those in an inpatient setting to those in outpatient therapy.

Education:
• Increase awareness of community resources and training about Parkinson’s disease among nurses, social workers and physicians
• Promote the month of May as National Stroke Awareness Month. Use this opportunity to educate the public and draw their attention to the signs and symptoms of stroke.
• Provide education to patients and their families about resources that might allow them to stay in their own homes
  ➢ Help patients and their families connect with resources that might allow them to remain more independent.
• Continue to do outreach, and communicate with patients in more easily understandable ways (using layman’s terms, visual images, stories, videos)
• Provide ongoing continuing education for those professionals on the front lines about community resources that are available.
C. Secondary Data Analyses

The primary sources of secondary data collection include:

- **Missouri Information For Community Assessment (MICA)** - According to the Department of Health and Senior Services, Missouri Information for Community Assessment (MICA) is an interactive system that allows the user to create and download tables, based on selected variables.

- **Healthy Communities Institute (HCI)** - Provides an online dashboard of health indicators for St. Louis City as well as the ability to evaluate and track the information against state and national data and Healthy People 2020 goals. Sources of data include the National Cancer Institute, Environmental Protection Agency, U.S. Census Bureau, U.S. Department of Education, and other national, state, and regional sources.

- **Department of Health and Senior Services** - Brain Injury Green Book A guide provided by the Department of Health and Senior Services on living with Traumatic Brain Injury.

**Brain Injury**

Brain injury occurs at every age level. Some of the most common causes are motor vehicle accidents, falls, bicycle injuries, and sports injuries. Brain injuries are often misunderstood and not only cause physical problems but also cause cognitive, emotional, and social relationship issues. The difficulties that some patients encounter can even change an individual’s personality. It is extremely hard to predict what changes will occur with a traumatic brain injury.

Common problems associated with traumatic brain injury may include:

- Motor skills: weakness or paralysis on one side of the body, balance and coordination issues, decreased endurance, muscle stiffness
- Perceptual: may have sense (smell, hearing, taste, touch, seeing) issues to fixed objects
- Memory and learning: problems with short term memory, slower and limited learning, and difficult retrieving long term memories
- Executive reasoning: reasoning, problem solving, thinking, and attentiveness.
- Speech and Language: difficulty in expressing thought or speaking clearly.
- Emotional changes: anxious, frustrated, moody, depressed

In our focus of the community needs assessment, we looked at the immediate St. Louis City residents that suffered traumatic brain injuries over a three-year period.
This data is from the same St. Louis City area over three years to denote the amount of traumatic brain injuries that occur each year from young adults to mature adults of all races.

It was noted that in 2008 and 2009 that 25-44 age group had the largest amount of brain injuries of any group but that it had decreased by 8.5% in 2010. It was also noted that the overall number had declined over this three year period in all age categories except those residents 65+.

With just under 15% of the City’s population being 65+ and with an increase of about 12% in that category, we found it important that caregiver education and awareness needed to be raised for that group most of all to prevent falls to decrease traumatic brain injury in that subgroup.

We also realized that the number in the 15-24 age group remained quite high even though it had declined by about 9% overall. We saw that there was a need for education of teens and adults to age 44 as well to help reduce the amounts of traumatic brain injuries in those age groups and to bring awareness to preventable head injuries in those demographics.

<table>
<thead>
<tr>
<th>Age</th>
<th>White</th>
<th>African American</th>
<th>Other</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
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<td>15-24</td>
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<td>25-44</td>
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<td>45-64</td>
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<td>15-24</td>
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<td>65+</td>
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<td>47</td>
<td>11</td>
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</tbody>
</table>
Stroke

We then turned our focus to a Stroke Risk Profile for the St. Louis City and County as well as Missouri State, since more than 38% of our patients came from beyond St. Louis City and County.

In the Stroke Profile for Missouri completed county by county in 2007, St. Louis City shows a higher incidence of high blood pressure, obesity, physical inactivity and a history of tobacco use as compared to St. Louis County and Missouri as a whole. A Behavioral Risk Factor Surveillance Survey (BRFSS) in 2009 reported that a staggering 78.9% of Missouri residents incorrectly answered a question about the signs and symptoms of stroke.

![Stroke Risk Factors](image)

Based on these two surveys and other information from the Behavioral Risk Factor Surveillance Survey performed in 2011 on stroke prevalence in Missourians, we determined that there is a need for stroke education, prevention, and community awareness, especially in the African-American sector of the community.

According to a National Health and Nutrition Examination Survey (NHANES) published by the CDC, African Americans tend to have higher incidences of high blood pressure, thus are generally at a higher risk for developing strokes.
### Age-adjusted percentage of persons 20 years of age and over who have high blood pressure, 2007-2010. National Health and Nutrition Examination Survey (NHANES)

<table>
<thead>
<tr>
<th></th>
<th>Non-Hispanic Black</th>
<th>Non-Hispanic White</th>
<th>Non-Hispanic Black/Non-Hispanic White Ratio</th>
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<tr>
<td><strong>Men</strong></td>
<td>40.5</td>
<td>31.1</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>44.3</td>
<td>28.1</td>
<td>1.6</td>
</tr>
</tbody>
</table>

*Source: CDC 2012 Health United States, 2011. Table 70.*

The hospitalization rate for stroke and other cerebrovascular diseases also indicates there has been no significant decrease in the hospitalization of African Americans that present with Stroke or other cerebrovascular incident over the last two decades and is still considerably higher than those of the state average and the much lower rate of the white population of St. Louis City as indicated in the trend lines below.
Stroke Profile for St. Louis City Residents

Hospitalization Rates: Stroke/other cerebrovascular disease (CVD)

Three-Year Moving Average Rates

<table>
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<th>Rate</th>
<th>Years</th>
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<tr>
<td>52</td>
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</tr>
</tbody>
</table>

Trend Analysis:

- St. Louis City White rate trend shows a statistically significant decrease.
- St. Louis City African/American rate does not show a statistically significant trend.
- Missouri rate trend shows a statistically significant decrease.

Source: MICA

Physical Activity

We also considered our current offerings for exercise classes and the high incidence of physical inactivity in St. Louis City and for rehabilitating patients. Aquatics (already offered) and a single, “Muscles in Motion” class was currently offered. We decided to investigate the potential for offering additional classes with the help of the ABC Brigade. We also discussed the future of possibly engaging both the MS Society and Parkinson’s Society to develop another offering in the future and alternating sessions. It was discussed that we had offered classes for the Parkinson’s patients in the past but there was extremely low attendance and the program was dropped.
Access to Resources/Inadequate Insurance

We discussed in great length the resources we currently offer our inpatients and outpatients. We offer brain injury and caregiver education for inpatient families as well as host several support groups that use our settings for their monthly meetings.

We know that based on our restrictive meeting areas that we could really not host any additional support groups at this time.

We do offer cognitive sessions for patients on Medicaid that are 21 years and under as referred to us by BJH as well as have a discounted self-pay rate for those without insurance for outpatient services.

We also have Partners in Stroke, a program that is offered and helps with new Stroke patients moving to the homecare setting.

Transportation

Transportation resources were also an issue because of the amounts of patients that need suitable transportation for appointments. Since about 50% of our patients are city residents and about 26% of that demographic is living under the poverty level, there is a need for affordable transportation for patients with disabilities or that are rehabilitating. Accommodations for wheelchairs or lifts are often an issue.

Many patients need a caregiver or family member for transportation, which takes them away from their jobs. We need a good resource guide for patients to access transportation for themselves that is disability-friendly, reliable, and affordable. There needs to be free/low-cost transportation options as well as full service options for all patients.

It was also discussed that we had offered transportation services for some of our need-based patients in the past using our transportation services, but the program was discontinued. We thought about maybe using the available resource to offer a low fee-based service that could maybe help fill in the gaps as well. We need more time to research costs, availability of staff, and the potential need. We decided to investigate it further as a possible future offering maybe in 2016.
IV. PRIORITIZATION OF HEALTH NEEDS

In August 2013, The TRISL internal work group took the information given by our community peers and organizations and turned to our internal resources to answer what were the most important needs we could address for the rehabilitative community. We knew that we needed to be both considerate of the staffing limitations we have while being open to the needs of the community. We asked three questions of the data presented:

1. What programs could be enhanced or modified that we already offered?
2. Knowledge of additional resources we could be using?
3. What is the greatest gap between need and available resources?

We all felt that education was a continued theme in the greatest gaps defined by the external groups. Either caregiver education or prevention/education seemed to be high on the list with our group. Stroke prevention and education stood out to all of us as well as Brain Injury education. We also thought physical inactivity for patients once they left was a big issue and thought addressing the need for rehabilitating patients needing exercise was important. Transportation was often a resource needed as well.

Next, we decided to move to the secondary data for verification.

In order to prioritize needs, our internal work group looked at the greatest gaps in need from our focus group, external sources (Appendix E) and the secondary data.

We prioritized the needs by creating a list of the top five needs based on the responses from the interviews.

- Access To Services
- Inadequate Health Coverage
- Health Education/ Prevention
- Transportation
- Exercise.

In our work group discussions we chose education as our most important goal. We recognized that stroke and brain injury are the two groups to focus on in respect to our rehabilitation population. We saw that in 2012 and 2013 so far 25% of our total patient population came to us with Stroke or cerebrovascular diagnosis code. We had also seen an increase from 15% to 16% in brain injury patients from 2012 to current 2013 numbers.

Based on our expertise and resources, we chose two areas that we could address effectively with the resources and staffing we have:

- Stroke education /prevention
- Brain injury awareness education.
V. IMPLEMENTATION PLAN

A. COMMUNITY HEALTH NEEDS THAT TRISL WILL ADDRESS
   a. Community Health Need: Brain Injury Prevention and Caregiver Education

Rational:

Approximately 14,000 Missourians are taken to emergency rooms with a traumatic brain injury annually.

- Data indicate that youth age and 15-24 and the 25-44 are trending higher because of physical activity and are at higher risk than other age groups.
- Data indicate that those 65+ are at greater risk of traumatic brain injury from falls and has seen significant growth in a smaller demographic.
- There is a continuing need for education to reduce and understand the long-term effects of traumatic brain injury.

Program goal

To prevent traumatic brain injury and increase knowledge level of care givers.

Program objectives

1. To increase brain injury prevention knowledge level by 15% at the end of each educational session among all ages in St Louis City.
2. To increase knowledge level of those who provide care to brain injured patients by 15% at the end of each educational session.

Action plan:

- Offer a free education series for caregivers of traumatic brain injury patients.
- Offer caregiver talks to those caring for 65+ populations on the importance of preventing falls.
- Work with OASIS and/or skilled nursing partners to create brain injury prevention class for caregivers.
- Set-up at least four “Think First” talks to school age children in the St. Louis City annually. Include both elementary and high school audiences.
- Set-up pre- and post-test for all education talks/series to insure level of knowledge about brain injury care and/or prevention is met.

Outcome: Reduce brain injury and increase knowledge among care takers.
Outcome measurement: The pre-test result will be compared to the post-test score to analyze changes in the knowledge level of participants.

b. Community Health Need: Stroke Education/Prevention

Rational:

• In 2009 an estimated 78.9% of all Missourians did not recognize the signs/symptoms of stroke
• Data indicates that those 65+ are at greatest risk for stroke.
• There is a continuing need for education to reduce stroke prevalence especially in African Americans and those who have limited access to health/preventative care.

Program goal: To promote stroke education and prevention.

Program objective: At the end of each session, program participants’ knowledge level will increase by 20%.

Action Plan:

• Use the Month of May as Stroke Awareness month offering blood pressure checks and provide literature/resources on the signs/symptoms of stroke and stroke prevention information for outpatients, visitors, community and staff.
• Work with OASIS to provide talks on stroke signs and symptoms and healthy lifestyle changes for prevention.
• Continue support of the ABC Brigade in supporting stroke survivors and aiding in stroke education/prevention by aiding with Strokes for stroke, Stampede for stroke, and their annual trivia night.
• Work with ABC Brigade to offer at least one community prevention event out of house in 2015.
• Working with Washington University School of Medicine (WUSM) on joint neuro-rehabilitation seminars for caregivers (see Appendix F).
• Set up pre and post-test for all education talks/series to insure level of knowledge about brain injury care and/or prevention is met.

Partners:

• ABC Brigade
• OASIS
• WUSM.

Outcome: Stroke prevention
Outcome Measurement: Each participant will receive pre- and post-test at the beginning and end of the session. The two results will be analyzed to determine if there is an improvement in the knowledge level.

B. COMMUNITY HEALTH NEEDS TRISL WILL NOT ADDRESSED

Access to Resources/Inadequate Insurance

Being an entity that is half for-profit and half non-profit and having limited resources, we chose not to address this community need. We do however offer a reduced fee for outpatient services for those without insurance on a self-pay basis. We also offer charity cognitive therapy visits for brain injury patients for those that are 21 years of age and under as referred to us by BJH. We also have resources such as Paraquad visit with our spinal cord injury inpatients before discharge to aid with additional community resources that are available to them. We also have a Partners in Stroke support group that is available for both inpatient and outpatient stroke patients.

Transportation

Being an entity that is half for-profit and half non-profit and having limited resources to service our inpatient clients we decided we already provide what we can to address appropriate transportation needs for our targeted area. We provide transportation for inpatient needs to go out to physician appointments as well as have developed a comprehensive list of transportation alternatives for disabled and rehabilitating patients for patients and caregiver who need to seek alternate transportation. (See Appendix F)

Exercise/Physical Activity

Being an entity that is half for-profit and half non-profit and having limited resources to service our inpatient clients, we decided we already provide what we can to address affordable, safe, exercise classes that can continue beyond regular therapy visits or if recommended by physician and/or therapist. We have limited space to offer community programming and currently offer a low-cost alternative for rehabilitating patients and work with the ABC Brigade to offer scholarships for those not being able to afford the class sessions. We offer Aquatics and Muscle In Motions classes that have a small fee to cover some of our expenses but the charge is low and does not cover fully our costs to provide the service.
VI. SPECIFIC INPUT FROM THE JEFFERSON COUNTY HEALTH DEPARTMENT

Health Department Representative: Nina Key
Title/Department Name: Representative, Adult Brain Injury Program

Source of Need Information: Telephone interview

Identified Need #1: Transportation for those with brain injuries
Identified Need #2: Mental health services for those coping with brain injuries
Identified Need #3: Residential care for those with traumatic brain injury
Identified Need #4: Substance abuse prior to brain injury
APPENDIX A

12 July 2013

Dear ______:

As a valued member of our community advisory board, you are aware of how much we value your participation and engagement with our facility. It is always important for us to reach out to leaders, such as yourself, to obtain input and feedback as a way to improve the health and well-being of the patients we serve.

We are now required, by the Patient Protection and Affordable Care Act (PPACA), to obtain this feedback in a more formal and structured way. The PPACA requires all non-profit hospitals to conduct a community health needs assessment every three years. Because of our affiliation with BJC Healthcare, the Rehabilitation Institute is required to comply with this requirement as well. As a result, we are seeking your feedback and guidance about the rehabilitative needs of the St. Louis community.

Your input will be critical to ensure that voices are fully heard from various organizations and facets of our community. In order for us to capture your input, we are requesting the opportunity to conduct a short telephone interview with you sometime in the next two weeks. We have attached a very short survey with only three questions, which we would like you to think about and complete before we conduct the telephone survey. The survey should only take about 20 minutes of your time.

These interviews will provide our hospital with vital information that will be used in the development of our community health needs assessment and corresponding strategic implementation plan, all of which will be shared with you once complete. We hope you will be able to participate.

We appreciate your consideration of our request. You will be contacted very soon in order to schedule the interview. Thank you for all that you do on behalf of the rehabilitation community of St. Louis.

Sincerely,

Jon McDowell
President
The Rehabilitation Institute of St. Louis
APPENDIX B

PARTICIPANT ROSTER

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Organization</th>
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<tbody>
<tr>
<td>1</td>
<td>Michelle Brooks</td>
<td>American Parkinson Disease Association</td>
</tr>
<tr>
<td>2</td>
<td>Suzanne Carron</td>
<td>National MS Society, Gateway Chapter</td>
</tr>
<tr>
<td>3</td>
<td>Maureen Cunningham</td>
<td>Brain Injury Association of Missouri</td>
</tr>
<tr>
<td>4</td>
<td>Donna Gunning</td>
<td>Center for Head Injury Services</td>
</tr>
<tr>
<td>5</td>
<td>Robin Hamann</td>
<td>American Heart Association</td>
</tr>
<tr>
<td>6</td>
<td>Kathleen Howard</td>
<td>ABC Brigade</td>
</tr>
<tr>
<td>7</td>
<td>Dee Jay Hubbard</td>
<td>Stroke Visitation Program</td>
</tr>
<tr>
<td>8</td>
<td>Nina Key</td>
<td>Jefferson County Dept of Health and Sr Services</td>
</tr>
<tr>
<td>9</td>
<td>Elizabeth Szydlowski</td>
<td>MO Division of Vocational Rehabilitation Services</td>
</tr>
<tr>
<td>10</td>
<td>Carla Walker</td>
<td>Occupational Therapy Performance Lab (WUSM)</td>
</tr>
<tr>
<td>11</td>
<td>Althea West</td>
<td>Home Care Assistance</td>
</tr>
</tbody>
</table>
APPENDIX C

REHABILITATIVE NEEDS ASSESSMENT WORKSHEET

1. In your opinion, what are the three top health needs or challenges related to rehabilitation services that exist within the St. Louis city population?

1.)

2.)

3.)

2. To your knowledge, what resources are currently available in St. Louis city for addressing each one of them? Who/what organization is trying to address them?

1.)

2.)

3.)

3. In your opinion, where is the largest gap between an existing rehabilitation need and available services?
APPENDIX D

AVAILABLE RESOURCES

**Transportation**
Call-A-Ride
MS Society will help provide transportation to outpatient therapy appointments

**Exercise**
Muscles in Motion (TRISL)
Paraquad

**Housing**
Paraquad

**Home Health**
Partners in Stroke

**Support Groups**
Life After Stroke – support group for caregivers
Parkinson’s disease Foundation – support group for caregivers

**Outpatient Services**
ABC Brigade
Barnes-Jewish Hospital
Paraquad
Saint Louis University Physical Therapy
Washington University Community Practice
Washington University Physical Therapy

**Education**
ABC Brigade
Parkinson’s Association
Brandon’s Smile (St. Louis County – to increase awareness of pediatric stroke)
Brain Injury Association (for professionals)

**Financial Assistance**
ABC Brigade
American Parkinson’s disease Association
APPENDIX E

FEEDBACK ON GREATEST GAPS BETWEEN NEED AND AVAILABLE RESOURCES

• Inadequate insurance coverage for patients
  ➢ Therapy does not cover cognitive therapy and too few sessions are covered
• Physicians who have a thorough understanding of brain injury
• Help for families in caring for the patient and understanding the injury
• Education for the public regarding signs and symptoms of injury or trauma
• Dependable transportation for patients
• Follow-up care when discharged from the hospital
• Home health rehabilitation services
• Access to rehabilitation services outside of St. Louis City
• Lack of social supports to assist with Activities of Daily Living (ADLs) and help maintain a patient’s independence at home
• Public education:
  ➢ The signs and symptoms of stroke, heart disease, heart attack
  ➢ The importance of using EMS versus self-transporting
TRANSPORTATION RESOURCES

• Missouri
  o Reduced Rate/Free Options
  o Metro
    ▪ Call-A-Ride
      • 888-652-3617
      • Discounted price for senior and disabled St. Louis City and County residents; Wheelchair lift available
      • Must complete application/approval process before 1st trip
      • Wheelchairs must be approved by ADA prior to transporting
        o ADA will pay for Call-A-Ride to transport to office to inspect w/c
        o ADA: 314-982-1510
      • Mon-Fri 4am-midnight
    ▪ Bus System
      • 314-982-1498
      • Serves St. Louis City and County
  o OATS
    ▪ 314-894-1701 or 800-201-6287
    ▪ Serves St. Louis, St. Charles, Franklin, and Jefferson County residents ($3 round trip within home zipcode, $6 outside of home zipcode); wheelchair lift available
    ▪ Mon-Fri 10-1
    ▪ Reduced rates provided to 60+ without Medicaid; also Medicaid provider
    ▪ **Funding source does not currently cover rehab, therefore rates are $43.00 per round trip 0-10mi, $57.00 round trip 11+ mi
  o St. Andrew’s Senior Solutions
    ▪ 314-726-5766
    ▪ Provides transportation services to St. Louis Metro Area. Drivers pick up, remain at appointment, and take home.
    ▪ $20 per hour + $0.70 per mile.
  o St. Louis Area Agency on Aging
    ▪ Serves St. Louis City residents 60+ or 18-59 with a disability (MUST receive SSD if under 60!)
    ▪ 314-612-5918 or 877-612-5918
    ▪ Available 8-3; 1 day notice required for scheduling
      • Bevo: 314-352-0141
      • Carondelet: 314-752-5085
      • Five Star/Arsenal: 314-664-1008
      • Grand Oak Hill: 314-865-5530
      • Northside: 314-652-9946
      • Wesley: 314-385-1000
  o County Older Resident Program (CORP)
    ▪ 314-615-4516 or 314-615-4559
- Free to St. Louis County residents 60+
  - Mon-Fri 8-5; needs 48-72 hr notice to schedule
- Shepherd’s Center of Webster/Kirkwood, Inc.
  - 314-961-2661
  - Serves residents 55+ of zip codes 63119 and 63122 for medical appts only
  - Must register in advance to receive services; needs 1 week notice for scheduling
  - Donations accepted
- Logisticare
  - 866-269-5927
  - Provides medical transportation to Medicaid patients at no cost; outpatient therapy appointments do not qualify
  - Transportation arranged through participating provider; needs 3 days notice to schedule
- Older Adult Community Action Program (OACAP)
  - 314-442-3151
  - Free to seniors in University City (donations accepted); wheelchair lift available
  - Tues/Thurs 10-1:30 for grocery shopping, 4-7 for dinner
- STAR Program
  - 636-978-3306
  - Provides transportation services at no charge to residents of St. Charles County.
  - Must be 62 or older and have no other means of transportation. In-home assessment of transportation needs required.
- Delta Independent Living Center
  - 636-926-8761 ext. 246
  - Free to senior and disabled residents of St. Charles, Lincoln and Warren county
- iTNSt.Charles
  - 636-329-0888
  - Average charge is $10. $60 individual or $75 family yearly membership fee required. Personal account is then set-up so that transactions not necessary at the time of the ride. Scholarship option available for low-income riders.
- Disability Resources Association
  - Serves residents of Jefferson County who are disabled
  - (636) 931-7696
  - Disabilityresourcesassociation.org
- St. Charles Area Transit
  - Serves within St. Charles city limits
  - 1 day notice for scheduling; wheelchair lift available
  - $0.25 for 62+; $0.50 for under 62
- Senior Resident’s Transportation Services (FLERT Bus)
  - 314-839-1776
- Free to Florissant residents 60+ and under 60 with a disability with Golden Age (from city hall) pass within Florissant city limits
- Available Mon-Fri 8-3:30; 1 day notice for grocery store, 5 days notice for Doctor appt.
- Wheelchair lift available; advance notice required

- City of Maryland Heights Dept of Human Services
  - 314-738-2599

- Berkeley Senior Citizens Club
  - 314-524-3313
  - Free to disabled and 55+ Berkeley residents to trips within 10 mile radius; Wheelchair lift available
  - Tues/Thurs for doctor appts; Fri for grocery shopping
  - Must complete application prior to first trip; needs 1-2 day notice to schedule

- Brentwood Magic Bus
  - 314-963-8678
  - Free to disabled and 55+ Brentwood residents; Wheelchair lift available
  - Mon-Thurs. 8-3:30

- Bridgeton Community Center
  - 314-739-5599
  - Free to disabled and 60+ Bridgeton residents; Wheelchair lift available
  - Mon-Fri 8-2:30; needs 1 day notice to schedule

- Jennings Senior Center
  - 314-388-1164
  - Free to Jennings residents (donations accepted); charges do apply to out-of-town trips
  - Wheelchair lift available
  - M-F 9-4, Sat 9-2; needs 1 day notice to schedule

- Private Pay Options
  - Express Medical Transportation
    - 314-781-6400
    - Serves all metro area; Wheelchair lift available
    - Provides stretcher van and wheelchair van, and ambulatory transportation services
  - St. Louis County Cab Company
    - 314-991-5300
    - Serves St. Louis City and St. Louis County; available 24 hrs
  - Richardson Transportation
    - 314-725-9111
    - Serves all of the metro area
    - Service available 24 hrs
    - Wheelchair lift available; advance notice required

- Allen Cab Company
  - 314-241-7721
Services St. Louis City and St. Louis County
  o Laclede Cab Company
    ▪ 314-652-3456
    ▪ Serves all metro area
  o Harris Cab
    ▪ 314-371-7111
  o Top Notch Transportation
    ▪ 314-776-3903
    ▪ Available 6am-8pm 7 days/wk; 1 day notice required for scheduling
    ▪ Wheelchair lift available
  o A-Trans (by Abbott)
    ▪ 1-800-792-7433
    ▪ Provides stretcher-van services
  o Van Paralift
    ▪ 314-781-6400

Illinois
  o Reduced Rate/Free Options
  o Madison County Transit/ACT
    ▪ 618-931-7433
    ▪ Provides transportation to persons with a disability. Patients must personally apply. Medicaid provider.
    ▪ Wheelchair lift available.
  o Alternative Transportation System/ATS
    ▪ 618-239-0749
    ▪ Serves parts of St. Clair County
    ▪ $3.50 per way
    ▪ Must apply for services before services can be provided; must be ADA approved.
    ▪ Wheelchair lift available.
  o Monroe Randolph Transit District
    ▪ 617 South St. Louis Street
    ▪ Sparta, IL 62286
    ▪ 1-877-443-9087
    ▪ Medicaid Approved
  o Faith in Action
    ▪ 618-692-0480- serves Edwardsville residents
    ▪ 618-344-8080- serves Collinsville, Caseyville, Maryville and State Park residents
    ▪ 618-877-9020- serves Granite City,Pontoon Beach, Madison, and Mitchell residents
    ▪ Provides ambulatory medical transportation free of charge.
  o Christian Homecare Services
    ▪ 618-537-2636
Serves Lebanon, Mascoutah, Belleville, Shiloh, O’Fallon, Fairview Heights, Swansea, Trenton, Alhambra, Freeburg, New Baden, New Athens, Cahokia, and Dupo
Provides free (donations greatly appreciated!) transportation for medical appts (including to St. Louis), grocery shopping, pharmacy pick-up, etc.
Reservations must be made 3-7 days prior to appt.

- **Senior Services Plus**
  - 618-465-3298 x106
  - Serves residents 60+ of Alton, Godfrey, Bethalto, East Alton, Wood River, Hartford, Roxana, South Roxana
  - Suggested donation of $2.50 per way
  - Reservations must be made 7 days in advance for St. Louis appts

- **Clyde C. Jordan Senior Center**
  - 318-293-6700
  - Provides free transportation to residents 60+ East St. Louis, Belleville, Cahokia, and Fairview Heights (donations accepted)
  - Available M-F 9-1; reservations must be made 3 days in advance
  - Wheelchair lift available

- **American Cancer Society**
  - 618-288-2320
  - Provides transportation to medical appointments for people with cancer.

- **Beacon of Belleville**
  - 618-222-8824
  - Provides free transportation to Belleville, Swansea, Shiloh, Fairview Heights, and O’Fallon residents (donations accepted)
  - DOES NOT PROVIDE SERVICES TO ST. LOUIS

- **First Transit**
  - 1-877-725-0569; 1-866-503-9040
  - Prior approval service for IPA patients.

- **Helping Hands**
  - 7012 West Main St.
    Belleville, IL 62223
  - 618-239-9900 (ph)
  - 1-800-205-0052 (ph toll free)
  - 618-239-9800 (fax)
  - Provides ambulatory and wheelchair van transportation.
  - Accepts IL Medicaid.

- **Central Illinois Taxi**
  - 618-271-9100
  - Accepts IL Medicaid

- **Best**
  - 618-876-3034- Linda
  - 618-876-3035 (fax)
• Provides ambulatory transportation only.
  • Accepts IL Medicaid.
  
  o Area Medi Van
  ■ 618-637-6535
  ■ Wheelchair lift available
  ■ Accepts IL Medicaid
  
  o Express Medical Transport (EMT)
  ■ 618-345-4000- Donna
  ■ 618-345-4009 (fax)
  ■ Serves all metro area; Wheelchair lift available
  ■ Provides stretcher van and wheelchair van, and ambulatory transportation services
  ■ Accepts IL Medicaid
  
  o Private Pay Options
  o Express Medical Transport (EMT)
  ■ 618-345-4000- Donna
  ■ 618-345-4009 (fax)
  ■ Serves all metro area; Wheelchair lift available
  ■ Provides stretcher van and wheelchair van, and ambulatory transportation services
  
  o Top Notch Transportation
  ■ 314-776-3903
  ■ Available 6am-8pm 7 days/wk; 1 day notice required for scheduling
  ■ Wheelchair lift available
  
  o A-Trans (by Abbott)
  ■ 1-800-792-7433
  ■ Provides stretcher-van services
  
  o Van Paralift
  ■ 314-781-6400
REHABILITATION RESEARCH DAY
ADVANCES IN NEURO REHABILITATION

PROVIDED
IN COLLABORATION WITH
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
DEPARTMENT OF NEUROLOGY
PROGRAMS IN PHYSICAL AND OCCUPATIONAL THERAPY
&
THE REHABILITATION INSTITUTE OF ST. LOUIS
TRISL is hosting the 5th Annual Research Conference on Saturday, December 7, 2013. This year’s conference will focus on Neuro Evidence Based Rehabilitation and Virtual Reality Training. Continuing education credits are available for PT (.6 hrs), OT (.65 hrs), SLP (.6 hrs), RN (.6) and Physician CME (.6 hrs).

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<tr>
<td>8:00</td>
<td>Welcome</td>
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<td>8:15</td>
<td>Welcome</td>
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<td>8:15</td>
<td>Stroke Rehabilitation: Optimizing Treatment to Improve Patient Outcomes</td>
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<td>New Developments in the Evidence Base for Aphasia Rehabilitation</td>
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<td>Morning Break</td>
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<td>Rehabilitation Update: Parkinson Disease</td>
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<td>11:30</td>
<td>Finding What’s Left: Evidence-Based Rehabilitation Spatial Neglect</td>
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<td>12:30</td>
<td>Lunch (TRISL Café)</td>
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<tr>
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<td>Brain Imaging and Stroke Recovery</td>
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<tr>
<td>3:15</td>
<td>Closing / Completion of Course Evaluations</td>
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