

CASE STUDIES ON THE ...

Interdisciplinary Team Approach

By **Kimberly Paetzold**, Editor

*W*hat is an interdisciplinary team approach to recovery? An interdisciplinary therapy team

approach to rehabilitation draws from two or more therapy disciplines – integrating them together in the pursuit of recovery. This approach develops a greater understanding of an individual's complex and wide-ranging issues following a traumatic brain injury, and more importantly, the therapy results are greater than the sum of each discipline implemented individually.

To illustrate the advantages of this approach, we have documented four Rainbow client rehabilitation stories focused on each person's therapy. The stories are unique, but the results of combined therapies and an integrated team approach yielded superior results in each of the following cases.

Case Study #1 - Betty Korte

February 2007 – Betty is an independent, vibrant 73-year-old, married to Ralph, the man she loves and her second husband of 35 years. She has three children, three grandchildren and three great grandchildren. But on February 11, her life changed drastically when she was in a car accident that left her injured with multiple fractures. After receiving acute care, Betty transferred to an inpatient rehabilitation center close to home. After weeks of therapy, she was having a very difficult time getting out of bed, was wheelchair bound and unable to progress in physical therapy sessions. She felt ill and had completely lost her self-confidence. Her lack of success caused an extreme amount of anxiety and her first response to therapy quickly became, "I can't do that."

After two months of unsuccessful treatment, Betty's case manager felt she needed a change. She wanted



her to try Rainbow's "interdisciplinary team approach" to therapy. As it turned out, receiving therapy with a professional team focused on meeting her unique needs was exactly what Betty needed.

Betty did not have a brain injury, but she did have serious orthopedic issues, severe pain and medical conditions, including colitis. Marianne Knox, the admission coordinator assigned to Betty's case, met with Betty and her husband, Ralph. Marianne evaluated Betty and produced a plan of care based on her assessment, medical records and Betty's physician prescription. After selecting Rainbow's NeuroRehab Campus as the appropriate treatment center and residential home, her therapy team was assigned – physical therapists,

"After receiving treatment for pain, Betty felt better and could participate in therapy. When clients have varied needs, the interdisciplinary team approach becomes invaluable."

Gaurav, Rainbow OT

occupational therapists, a Rainbow case manager and nurses.

For someone who is neurologically intact and has not incurred a brain injury, the treatment process can be less complex. Eliminating the need for adaptive cognitive strategies allowed Betty's therapy team to strategically focus on improving her range of motion, overall strength, stability and balance. This became Betty's daily rehabilitation.

As Betty worked with her therapists, she grew to trust them, and her confidence increased, translating into a more positive outlook. There was regular communication between her therapists on a daily basis and formal monthly team meetings. When Betty was tired or in pain, her therapists would

communicate that information, and Betty would receive pain management following the therapy session. If necessary, therapies would be rescheduled later in the day, enabling her to rest. *"We cater to our clients' needs or issues,"* stated Gaurav Rainbow, an occupational therapist. *"If Betty needed a break or pain management, such as a hot pack, ice pack or pain medication, that need was communicated to nursing. After receiving treatment for pain, Betty felt better and could participate in therapy. When clients have varied needs, the interdisciplinary team approach becomes invaluable."* Within a short period of time, Betty grew stronger and was able to handle back-to-back therapy sessions.

On September 27, only four months after admitting to Rainbow, Betty was ready to go home. Unfortunately, she had to wait until her house renovations were complete, but when her home received a passing grade, her discharge was quick.

When Betty arrived at Rainbow's NeuroRehab Campus, she needed assistance to stand and was unable to ambulate. When she left, she was able to walk with a cane and could handle almost all of her daily living tasks independently. The Rainbow team is always grateful to see clients progress and return home. Betty is well on her way to complete independence, and more importantly, she is happy with her outcome.

Case Study #2 - Tom Chadwick

March 1987 – Thirteen-year-old Tom Chadwick stepped out of his school bus and was struck by a car. He incurred a severe traumatic brain injury and initially did not have funding for rehabilitation services. It would be years before funding became available, and during that time, Tom lived with his parents.

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Betty Korte is a vibrant woman in her 70s.

Her hobbies include working in her yard and frequenting garage sales and flea markets. Betty has three children, three grandchildren, and three great grandchildren. She and her husband, Ralph, have been married for over 35 years.

Betty feels that she progressed very well at Rainbow and is delighted to be home again following her four months of therapy. She thanks her treatment team for helping her through the rehabilitation process.

"I would recommend this place to anyone," she says of Rainbow's NeuroRehab Campus.

"The staff will help you in any way.

They are very kind to their patients.

I'm very appreciative to have come out on my own two feet."





Pictured above: Occupational therapist Kathy (right) working with Tom

Tom's current therapies at a glance ...

The overall goal of Tom's treatment team is to help him achieve the greatest degree of independence possible given his current physical, behavioral and cognitive abilities.

Mental Health Therapy

Tom and his mental health specialist are seeking to improve his mood stability, lower anxiety, and maintain proper behaviors. Through Rainbow's behavioral programs and his sister's follow through at home, Tom's outbursts have decreased as he's learning to manage his emotions.

Occupational Therapy

The focus of Tom's occupational therapy is building residential independent-living skills. Tom is working on activities that include bank transactions, creating grocery lists, going grocery shopping and following recipes cards while cooking.

Recreational Therapy

Tom and his recreational therapist have been working to increase his strength and stamina while exercising. Tom is becoming more flexible to changes in the order of his exercise routine. He is also learning to operate the equipment – treadmill, bike and strengthening machines. He enjoys swimming on a weekly basis as well.

Rainbow Group Activities

Tom attends many group activities while he is at Rainbow. These activities include woodshop, mat group (for physical therapy) and community outings. These groups are designed to help Tom and other clients discover new activities they enjoy and experience a sense of accomplishment.

Speech Language Pathology

Reading comprehension and interpretation of information printed on maps and home care products has been one component of Tom's speech therapy over the past months. He and his speech language pathologist practice listening and information-gathering skills during phone conversations. They are also working to help Tom establish eye contact with others during face-to-face conversations.

In 1994, his mother passed away and Tom's father became the primary caregiver. In June of 1998, Tom was admitted to Rainbow. It was the first formal therapy he had received in more than 10 years following his brain injury.

During this time, Tom suffered from seizures almost every other day. He was extremely thin and had very little stamina. In February of 1999, he was sent for a Wada test, which examines language and memory on one side of the brain at a time. This was done to assess his candidacy for surgical relief for his seizure disorder. Deemed a good candidate in June of 2000, Tom underwent a right anterior temporal lobectomy. This surgery was successful and substantially reduced his seizure activity.

After his surgery, Tom began to make great strides in therapy and rehabilitation as a whole. He was better able to focus, pay attention and voice his needs. He had increased learning retention, memory and physical tolerance. Unfortunately, his increased awareness had a negative side effect – Tom easily became agitated and irritable. There was a noticeable decline in his emotional tolerance and an increase in verbal outbursts. Sometimes, he would become extremely angry, and it was difficult to identify the triggers of these episodes. Rainbow's mental health specialists discovered that with Tom's newly acquired awareness, he perceived many circumstances as injustices and felt he deserved to be the center of attention at all times. If he wasn't, he acted out.

According to Kathleen Sobczak, Tom's former case manager at Rainbow, "Tom was overwhelmed by too much auditory and visual stimulation, causing him to become distracted by his own thoughts. Tom couldn't figure out why he had such negative emotions – he couldn't put his finger on what was making him upset."

In addition to his behaviors, Tom was not receiving the support he needed at home. Living with his father, he was given little opportunity to work on his newly acquired skills. According to Tom's

it's easier to do it myself." Tom's father was also struggling with health issues. With increased awareness and lack of consistency from therapy to home, Tom found it very difficult to control his temper. It became essential that the therapy team work together to help him overcome his negative behaviors and bring his family on board so he had consistency.

How Tom, his therapy team and family put it all together ...

In January 2007, Tom's sister Lori assumed responsibility for his care. She moved in with Tom after their father passed away. This caused a great disruption in his daily routine. Rainbow's mental health specialists implemented anger management sessions and worked with Tom to accurately identify signs of anger along with appropriate coping skills. In addition, Tom's sister began to restrict TV and video games when he had outbursts. One technique his therapists used was to play to Tom's strengths – since he found satisfaction in helping others, his team realized that asking him to assist with a task would also help him cope with anger.

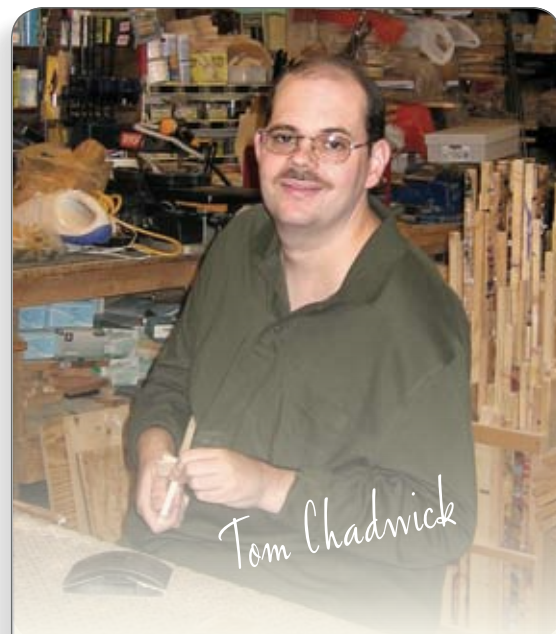
Lines of communication

The communication between the treatment team and family is critical to success and is handled formally through focus meetings – but there is also a tremendous amount of informal communication. Depending on what therapies are planned daily, Tom's therapists pass along critical information to make sure each session is successful. He also has a rehabilitation assistant (Raena) that personally works with him. She knows when Tom is heading toward an outburst or when Tom needs additional assistance. In addition, Tom's family wants the therapy team to call whenever something happens so that his rewards and restrictions are reinforced at home. *"The family has been phenomenal in trying to reinforce the*

reward system at home that we use during therapy," said Kathleen Sobczak. *"This has been crucial to Tom's success."*

One of Tom's biggest gains has been to follow his own schedule, which he worked on with speech language pathologists (SLPs). *"Prior to his surgery, Tom was on complete and utter autopilot,"* said Angie McCalla, SLP. *"When he first came to Rainbow, he would not even enter a room by himself. He would stand at the threshold near the door and rock back and forth until you physically moved him forward. Now, Tom can handle his own schedule."* Tom has made huge gains in handling social situations and is now able to initiate quality interactions with his peers.

Tom still gets frustrated but is better able to control his outbursts. Transition and flexibility are still difficult concepts for him to grasp and his therapy team continuously makes minor adjustments so he slowly becomes accustomed to change. As he faces new challenges, the support of his therapy team and his family's consistency at home will continue to be vital. For now, Tom's active therapy is continuing, and with consistent programming, he is continuing to make substantial rehabilitation gains.



Tom Chadwick's warm and friendly personality has made him a joy for therapists to work with. During the course of his treatment, his therapists introduced him to several activities that he enjoys including cooking, woodshop, swimming and bowling. Bowling has quickly become one of his favorite pastimes, and he eagerly anticipates weekly outings with Rainbow's recreational therapy group.

In his free time, Tom watches TV and listens to music. Among his favorites TV shows are "Wheel of Fortune" and "MASH."

Tom lives with his aunt, his sister Lori and her boyfriend, Steve. The family has two miniature Schnauzers named Mia and Hannah that Tom adores. Tom's sister has worked closely with Tom's treatment team to reinforce what he is learning in therapy at home. Her involvement and support have greatly added to his success.



Case Study #3 - Jake Kepler

August 2004 – Jake Kepler was 19 years old when he was involved in a rollover car accident. For two days, he was suspended by his seat belt upside down until he was found and transported to the hospital. He had trauma to the head and a soft-tissue injury across his entire abdomen.

Jake was admitted to Rainbow after a two-week hospital stay to receive occupational, physical, speech and mental health services. Rainbow's mental health specialists thought he had ability to successfully rehabilitate, but Jake was not committed to treatment – he just wanted his physical wounds to heal. After three months of therapies and medical treatment, Jake left Rainbow's program.

Jake kept in touch with his mental health counselor at Rainbow and decided to again try rehabilitation for a second time. Jake admitted to Rainbow and his therapy had a completely different focus, no longer concentrating on wound care and medical treatment. He needed a very structured program to move forward with rehabilitation. The structured environment in Rainbow's Residential Program was very different from what Jake was accustomed to, and he wasn't ready to commit. After only two months, he signed out against medical advice.

Again, Jake kept in touch with his Rainbow mental health counselor and reported having problems related to his brain injury. He couldn't multi-task or concentrate and was surprised at how hard it was to perform in his work environment. In 2006, Jake received information about Rainbow's Garden City Apartment Program and wanted to come back to Rainbow. This program is structured to support individuals with brain injuries while living with their family or loved one. Jake liked the idea of receiving supports while living with his girlfriend, but the Rainbow team did not think he was ready for this level of independence. They told him he needed to learn how to maintain a job and appropriately structure free time before he could handle this level of independent living. In March of 2007, Jake re-admitted to Rainbow. This time, he was committed to advancing through the rehabilitation process.

Jake's original neuropsychological evaluation documented cognitive deficiencies, especially memory. Joe Welch, a Rainbow behavioral analyst assigned to Jake's therapy team, didn't think that assessment matched what Jake demonstrated during therapy. He thought Jake could be successful in advancing to independent-living skills. According to Joe, *"He [Jake] didn't think he was skilled. But, bottom line, Mr. Kepler stepped up to every challenge this therapist put in front of him, building his confidence on his own."*

Jake worked on anxiety issues, memory problems and scheduling in his speech-therapy sessions. Since he never kept any kind of schedule, it was very hard for him to plan his days. But with a lot of tenacity and hard work, Jake is now able to hold down a job at a local grocery store. He secured this position with the help of vocational and occupational therapists. Before he was offered the job, Jake went to two interviews. During therapy sessions, he practiced interview questions followed by skill-building sessions. According to Kerri Torzewski, speech language pathologist, *"Jake learns through repetition. He was really worried about starting his job at the grocery store, so we visited the store before his start date and went through various tasks such as how to read tags and what to expect. We did this to decrease his anxiety."*

According to Julie Slauterbeck, Rainbow vocational specialist, *"I told Jake that he is smarter than he thinks. He suffers from a lack of confidence, so working at job where he's able to excel is a real confidence builder. Jake still needs to learn how to reduce his anxiety and set some good goals. I believe that he will continue to excel, but he needs a lot of support, praise and reassurance that he is doing a good job. We, his therapy team, have become his supportive family."*

His interdisciplinary team feels it will take additional structured counseling and programming along with speech, occupational and vocational therapy before Jake is ready for his next step toward independence. In the meantime, his goal to live with his girlfriend is alive and well, and he is working hard along with the support of his interdisciplinary team to build independent-living skills.



Twenty-two-year-old Jake Kepler is a young man with a bright future. After re-admitting to Rainbow in March 2007, Jake was determined to become an independent young adult. *"I relied on my mom and dad and grandma to support me,"* he said. *"I don't want to do that anymore. Rainbow is helping me become independent."*

Jake has successfully maintained a job at a local grocery store and recently moved to Rainbow's apartment program. He enjoys nature and taking walks in the woods. He aspires to one day become a landscape designer and has plans to take classes in the future.





Jake's current therapies at a glance ...

Jake recently moved from a residential home into a Rainbow apartment, another step forward in his goal to achieve independent living. Jake has performed well at Rainbow and is enjoying more freedom and more responsibility. He requires minimal supervision and is working toward independently accessing the community and Rainbow's programming.

Levels Program / Mental Health Therapy

Jake has successfully completed the second stage of Rainbow's Levels Program, which helps clients graduate to more independent environments as they progress in their rehabilitation. By continuing to cooperate fully with rehabilitation staff, follow residential rules and appropriately manage himself socially, Jake graduated to level three and paved the way for his therapist to recommend his transition to the less-structured apartment environment.

Occupational Therapy

Currently, budgeting and money management are Jake's primary focus in occupational therapy. He and his therapist have set savings goals, and Jake has consistently paid his personal bills. Because of the level of independence he has achieved in meal preparation, planning and grocery shopping, his therapist has discontinued this area of his therapy. He will continue to participate in the cooking group at the apartments.

Speech Language Pathology

Jake and his speech language pathologist are working to improve his memory and his written, verbal and auditory comprehension skills. During sessions, Jake will practice reading passages from a magazine and answer questions afterward. They also work on math story problems based on time and money management. Jake also developed a budget plan to open a savings account.

Vocational Therapy

Jake recently began working at a grocery store four days a week, organizing and maintaining the shelves. His vocational therapist is mentoring him on many work-related skills including overall consistency, communication, attention to task, following guidelines and appropriate work interactions. His therapist notes that he is doing very well managing this new role.

Case Study #4 - Renee Darga

November 2002 – Renee was a high school senior living in Rogers City, Michigan, when she was involved in a serious motor vehicle accident. During the collision, Renee was thrown from the backseat into the front of the car. She was extricated from under the dashboard by rescue workers and taken to Alpena General Hospital. Her Glasgow Coma Scale measured just four, indicating she had incurred a severe traumatic brain injury. After a total of five months in three different hospital settings, Renee was admitted to Rainbow in March of 2003.

When Renee began her rehabilitation, she was completely dependent on staff for all her needs. She could not sit or hold her head straight, and her right arm and leg were essentially nonfunctional. She had limited muscle control, was unable to feed herself and could not communicate. Renee's prognosis was bleak – her treating physician said she would not rehabilitate. She would not go to college, live independently or even be able to care for her own basic needs. According to her neuropsychological evaluation, Renee had severe cognitive deficits.

That was a very difficult time for her parents, and the prognosis was a big hurdle for her interdisciplinary therapy team. Though doctors must provide a realistic picture, nobody can accurately predict the future. Renee's treatment team immediately began intensive physical, occupational and speech therapy.

It didn't take long for Renee to become the perfect example of interdisciplinary team success. Initially, she received co-treatments, which are simultaneous treatments by two therapy disciplines used to optimize therapy outcomes. There was carryover between therapies to produce consistency throughout her regimen. Renee thrived with this structure.

How Renee progressed ...

Since her arrival at Rainbow almost five years ago, Renee's therapy gains have been substantial. When she began physical therapy (PT), her therapists began with rolling and fully supported sitting, then independent sitting. About three months after her admission to Rainbow, Renee had tendon-release surgery. This was an important step in her recovery because she could now progress to standing during her therapy sessions. Another surgery would later follow to provide her with increased ankle movement.

Renee also received neuro-dynamic therapy (NDT) from occupational and physical therapists. One of the basic concepts of NDT is the idea that all aspects of the person – sensory/perceptual, emotional, psychological and physical – must be considered during recovery and treatment. The therapists used NDT techniques to obtain normalization of tone on her right side along with normal movement patterns, which they integrated into her daily functional activities. One of Renee's biggest challenges was using her right side symmetrically with her stronger left side. The therapists took advantage of their NDT training and facilitated use of both sides of her body in a symmetrical manner during daily activities such as transfers, standing and walking.



Renee Darga's therapists describe her as a motivated young woman who has overcome incredible challenges and a very hard worker in her therapy sessions.

Renee and her family are very close. Each weekend, her parents drive over 260 miles one way from Rogers City to visit her. Her therapists note that her parents are delighted by Renee's progress and want to see her continue to achieve new milestones in her independence. She has one sibling, her sister Felicia, a student at Lake Superior State University, with whom she is also close. She enjoys shopping when her parents come to visit and frequenting her favorite restaurant, the Texas Roadhouse.

"Rainbow has been everything to me," said Renee. "When I first came, I was in a wheelchair, and the therapists helped me start walking again. I'm glad there is a Rainbow. It's really helped me."



Renee received intensive speech therapy, focused on bringing her from a nonverbal state to speaking and from not being able to eat to consuming a regular diet. When she was first admitted, she was unable to consistently follow commands and responded to pain with simple vocalizations. Now, she can effectively communicate not only her needs but her opinions and feelings as well, as she continues to work on clarity and inflection.

Aquatic therapy was added to Renee's rehabilitation when she was ready. Again, co-treatments were implemented with an occupational therapist and kinesiologist. Aquatics is an extremely effective therapy for impaired individuals because swimming is a full-body activity, and water buoyancy makes exercising an almost non-weight-bearing activity. Renee progressed from simple movements to nearly independent swimming and currently is working on integrating breath skills to her stroke.

Strong gains in rehabilitation ...

During her rehabilitation, Renee earned her high school diploma and is continuing to working on coping strategies. *"Renee is an incredibly hard worker,"* stated Jenny Auty, Rainbow kinesiologist. *"Renee went to school while receiving full therapy sessions. She would get up at 5:30 a.m., go to school, come to Rainbow's treatment center for therapy and then do her homework. It was amazing to see someone with a severe traumatic brain injury able to handle that workload."*

Renee now lives at Rainbow's Garden City Apartments and works at RipCo, a sheltered workshop. She has progressed to working with recreational therapists on using public transportation and identifying some leisure interests.

While Renee has shown vast rehabilitation gains, she continues to require the services of a guardian and must be monitored in her apartment. Often, individuals with severe TBIs make substantial rehabilitation gains but still will require a lifetime of supports. Until her gains level off, she will continue to pursue her long-term goals, which include working in the community, attending college and living as independently as possible.

"In the last few years Renee has grown into an adult and regained so many functions," stated Jenny D'Angela, Rainbow mental health counselor. *"She has learned to speak again and has gone from a wheelchair to using a walker independently. Her treatment team thinks she's pretty amazing."*

Individualized Treatment

Combining therapy needs with personal goals and interests

Individuals are always more responsive and successful when they work on goals that are personally interesting. Renee's therapy gains were substantial. Much of that success can be attributed to her treatment team taking a personal interest in her life and building around her interests and goals.

When Renee began her rehabilitation program, she was heavily involved in regaining basic skills such as swallowing, eating, standing and basic movements. Once Renee recuperated enough, her treatment team built her therapies around Renee's goal to finish high school and earn her diploma. While living at a Rainbow residential community home, Renee enrolled at the local high school and her interdisciplinary therapy team focused sessions and skill building around her high school classes.

Renee had a heavy class and therapy load for an individual recovering from a severe traumatic brain injury. Some of the skill sets she worked on during this time were:

- Organizing and scheduling – *Renee had to relearn how to prioritize and complete homework assignments on time.*
- Mobility – *Renee used her wheelchair effectively in the community and practiced walking for short distances.*
- Speed – *Occupational therapists concentrated on speeding up basic living tasks such as showering and getting ready for school. Renee's challenge was to get showered and fully dressed in only twenty minutes, which she accomplished.*

Renee also wanted to attend her prom, so her team provided dance lessons (with her date) during occupational and physical therapy sessions. Prior to the prom, Renee's therapists took her to the prom location to run through skills needed for that evening. They selected an appropriate area for her and her date to sit and practiced walking onto the dance floor; they helped her select her dress and shoes – all in preparation for the evening. This was done to promote therapy success by working on skills combined with goals important to Renee.



Renee's current therapies at a glance ...

Renee recently moved from a residential home to Rainbow's Garden City Apartments, a living environment that affords her greater independence. Her case manager notes that, overall, she has done well managing herself and her new home.

Fitness

Renee participates in aquatic therapy weekly to improve her overall walking skills and coordination. Her swimming goals coincide with her occupational and physical therapy objectives to help increase stability and endurance. In addition, she attends fitness sessions two times a week to build endurance and strength.

Mental Health Therapy

Mental health therapists help Renee practice assertiveness skills and non-aggressive communication skills. They practice safety and problem-solving skills in business and community settings and work on behavior control, which has been successful.

Nursing

Renee is actively working with the nursing staff to manage her own medication. To assist her, the staff packages her medication for the next day and distributes it to her the night before. Renee is responsible for keeping her medications for the day and calling in after she takes them. Her nurse comments that she has been successfully and consistently executing this task.

Occupational Therapy

The main focus of Renee's occupational therapy has been domestic responsibilities such as cooking and cleaning. She has done well in her new semi-independent living environment at Garden City Apartments and utilizes a planner to keep track of appointments.

Physical Therapy

Walking longer distances with a cane has been challenging for Renee, but she now practices walking over uneven surfaces. She meets with her therapist(s) four times a week.



Pictured above: Physical therapist Payal (left) and occupational therapist Carole (right) utilize neuro-dynamic therapy (NDT) therapy with Renee in a co-treatment session. This was done early in her rehabilitation to help maximize her rehabilitation gains.

Recreational Therapy

Renee and her recreational therapist have been working on developing hobbies and outside interests. She is also learning how to access public transportation.

Speech Language Pathology

Renee no longer needs to meet with her speech language pathologist on a regular basis and currently only receives support when needed.

Vocational Therapy

Renee works part-time at Rainbow's Corner Café and at Rainbow Industries Production Company (RipCo) assembling Adirondack furniture. She is working on completing tasks independently with minimal cueing.