

2011 Brain Injury and Stroke Mayo-Portland Outcomes

In 2010, 183 cases were analyzed regarding client progress in four of our programs that provide care for people with brain injuries: the Transitional Rehabilitation Program (TRP), the Medical Rehabilitation Services (MRS), Community Reintegration Program (CRP), and the Independent Living Skills Program (ILS). The ILS outcomes are located on Courage Center's website:

<http://www.couragecenter.org/ContentPages/ILSoutcomes.aspx?FromNavPK=856>

Several areas are measured to evaluate progress of clients throughout the programs. The results in this document are based on the data collected from the Mayo-Portland Adaptability Inventory for the TRP, MRS, and CRP. Lower scores represent higher functioning and higher scores show lower functioning. It is ideal to have scores decrease over time.

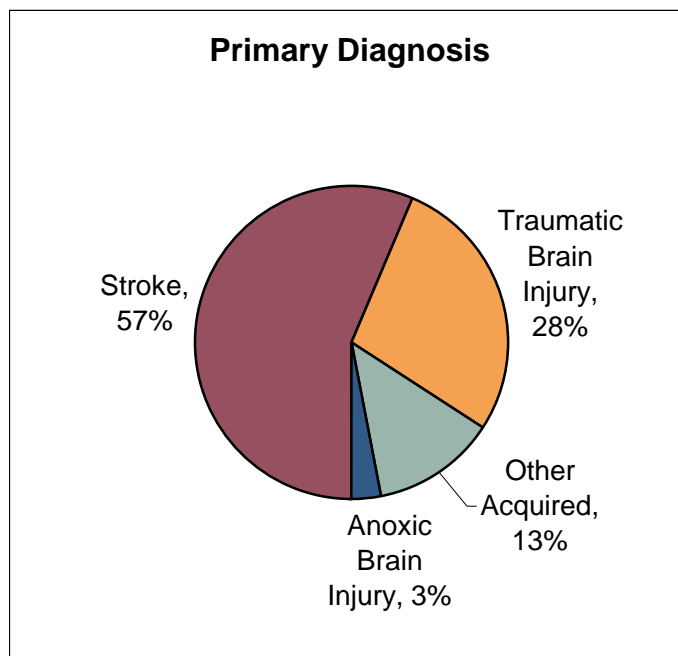
The Mayo-Portland Adaptability Inventory measures three categories including:

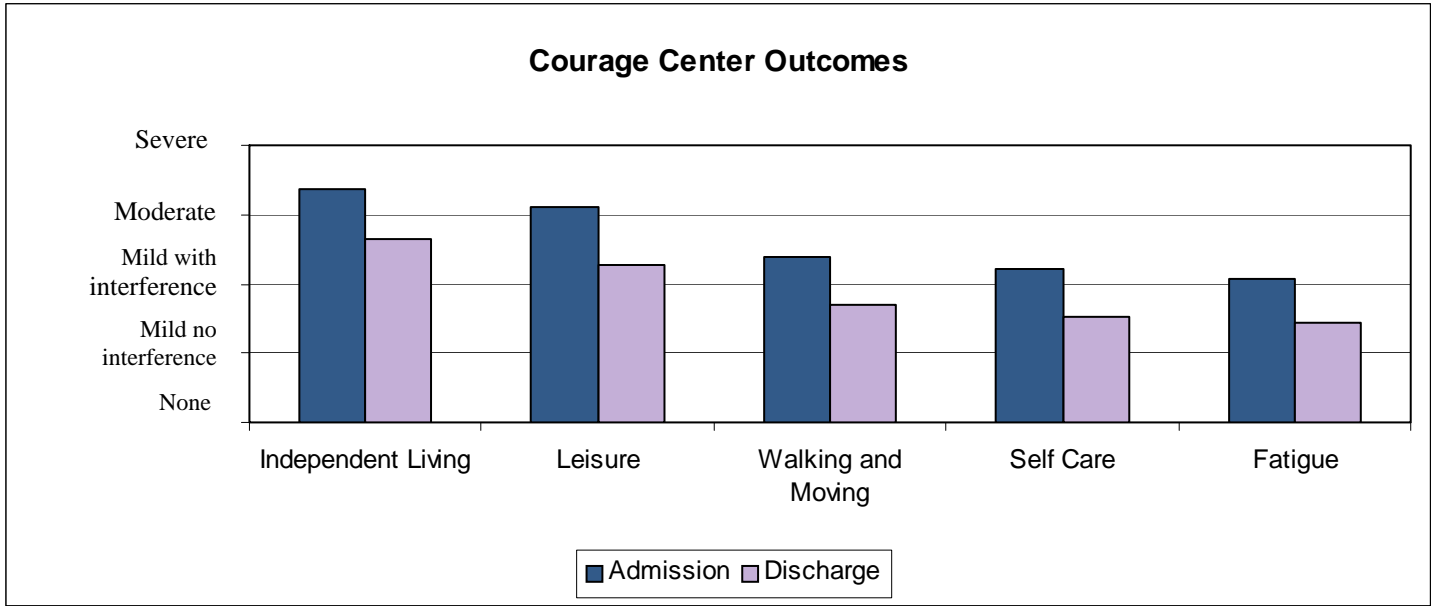
- ability in daily life
- adjustment to the changes from brain injury
- participation in activities and community life

Within the three major categories there are many subcategories. The subcategories include: mobility, use of hands, vision, memory, depression, money management, self care, verbal communication and others.

Client Demographics (Median)

- 64% Male, 36% Female
- 51 years old
- Entered Courage Center program 2 months after injury
- Stayed at Courage Center for 3 months (92 days)

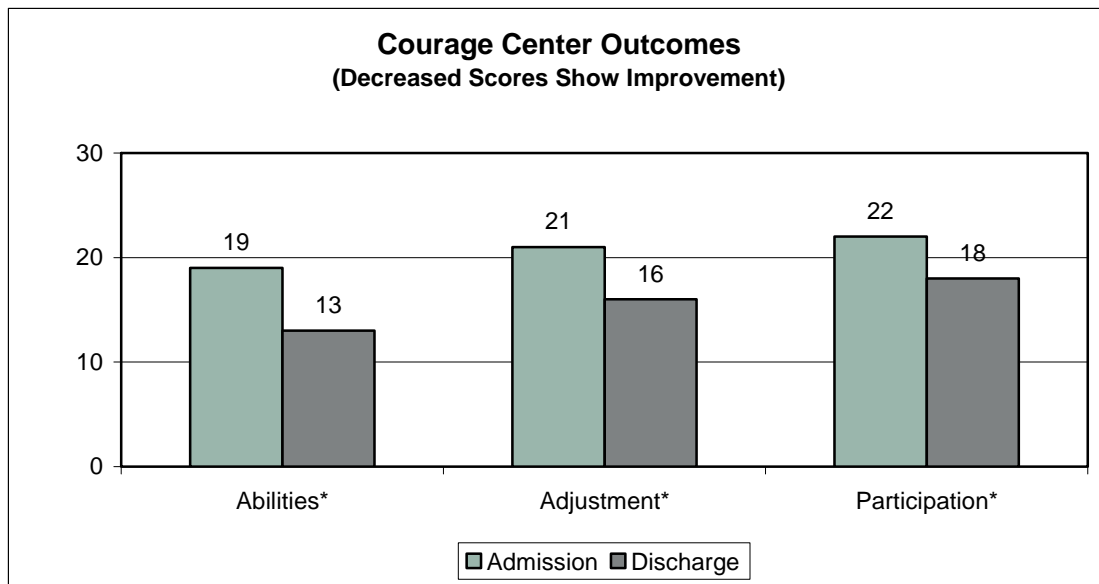




Stroke is characterized by an interruption of blood flow to the brain because a blood vessel is blocking the flow or bursts. Traumatic brain injury is when an injury causes damage to the brain. Anoxic brain injury occurs when there are significantly low levels of oxygen in the brain for more than five minutes. This can cause permanent brain damage. Finally, other acquired brain injury is a collection of other types of brain injuries.

Outcomes

Overall, clients show statistically significant (*p=.0001) improvements from admission to discharge for all three measures: abilities, adjustment and participation. Lower scores show higher functioning. It is ideal to have scores decrease over time.



The areas found to have the most significant improvement include:

- independent living
- ability to participate in recreational activities (leisure)
- walking and moving
- self care
- fatigue

The subcategories of the Mayo-Portland were statistically significant ($p = .001$) improvements were made include:

- mobility and use of hands
 - motor speech, verbal communication and non-verbal communication
 - attention and concentration, memory, novel problem solving, and problem solving
 - anxiety, depression, fatigue, pain-headache and impaired self awareness
 - initiation, social contact, leisure
 - self care, independent living, transportation, and money
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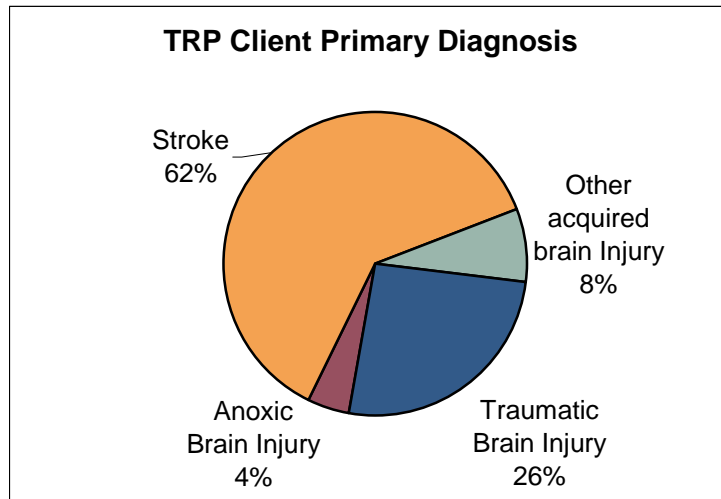
Transitional Rehabilitation Program (TRP)

The TRP is a 48-bed skilled nursing facility in which clients reside at the Courage Center during intensive rehabilitation. Comprehensive services are centered on each client's needs and goals. Through active participation in therapies and activities of daily living, individuals are challenged to demonstrate personal responsibility and gain greater independence.

Program Goals:

- Participants will achieve higher levels of functional independence.
- Participants will be transitioned to a more independent living setting.
- Participants will begin to explore vocational and recreational goals.
- Participants will achieve a higher level of well being.

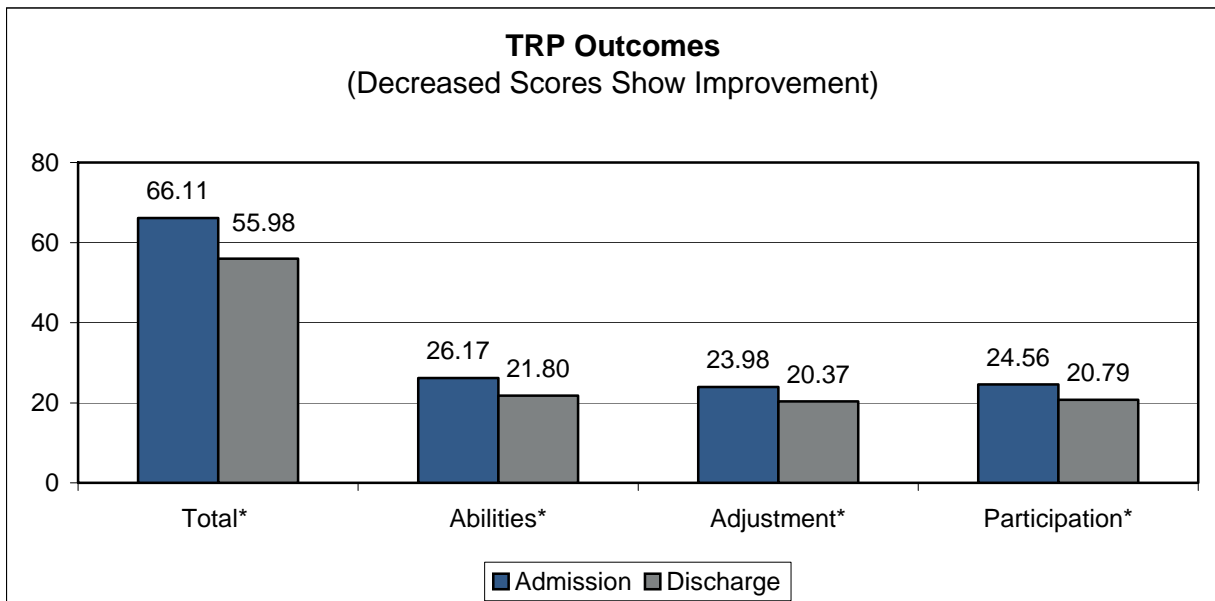
Eighty-nine clients were admitted to the TRP in 2010. The four primary diagnoses were: stroke, traumatic brain injury, other acquired brain injury and anoxic brain injury.



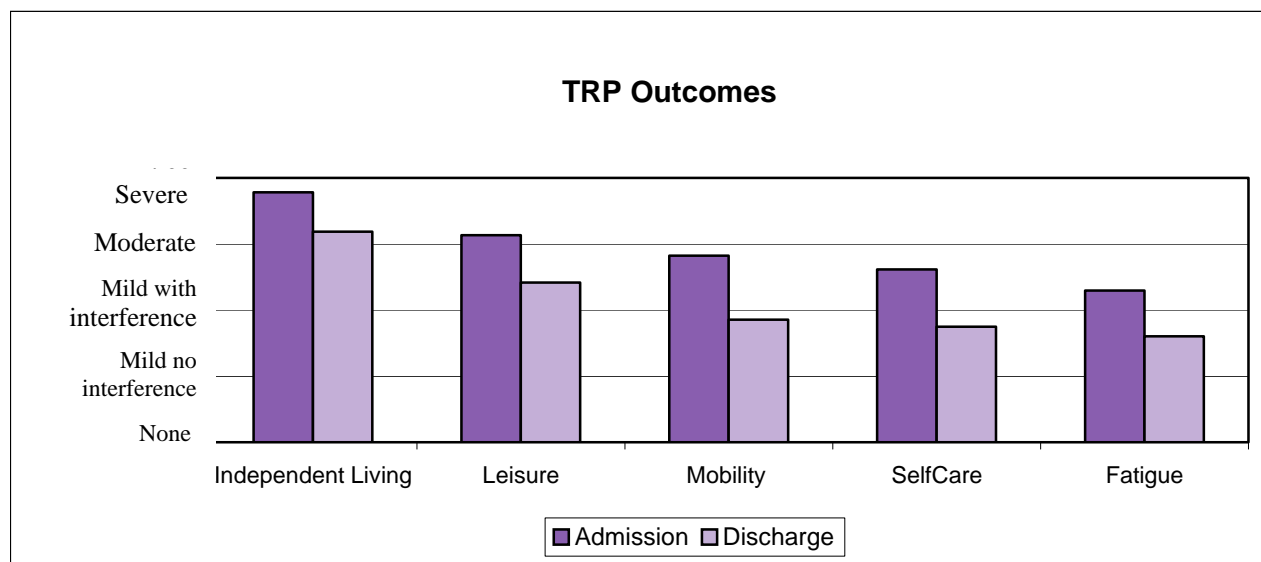
Average TRP Client Demographics

- 72% Male, 28% Female
- 50 years old
- 73 day stay
- Entered TRP 1.4 months after injury (~38 days)

The Mayo-Portland Adaptability Inventory for the TRP reflected statistically significant (*p=.0001) gains overall and in all three categories of ability, adjustment and participation.



The areas found to have the largest improvement include: independent living, ability to participate recreational activities (leisure), walking and moving, self care and fatigue.



Notable changes from admission to discharge:

Walking and Moving

- At admission 53% have moderate to severe mobility problems.
- At discharge only 34% of clients have moderate to severe problems with mobility.

Self-care including eating, dressing, bathing and hygiene.

- Self-care was a moderate to severe problem for 46% of clients at admission.
- At discharge only 28% had a moderate to severe problem with self-care activities.

Verbal communication

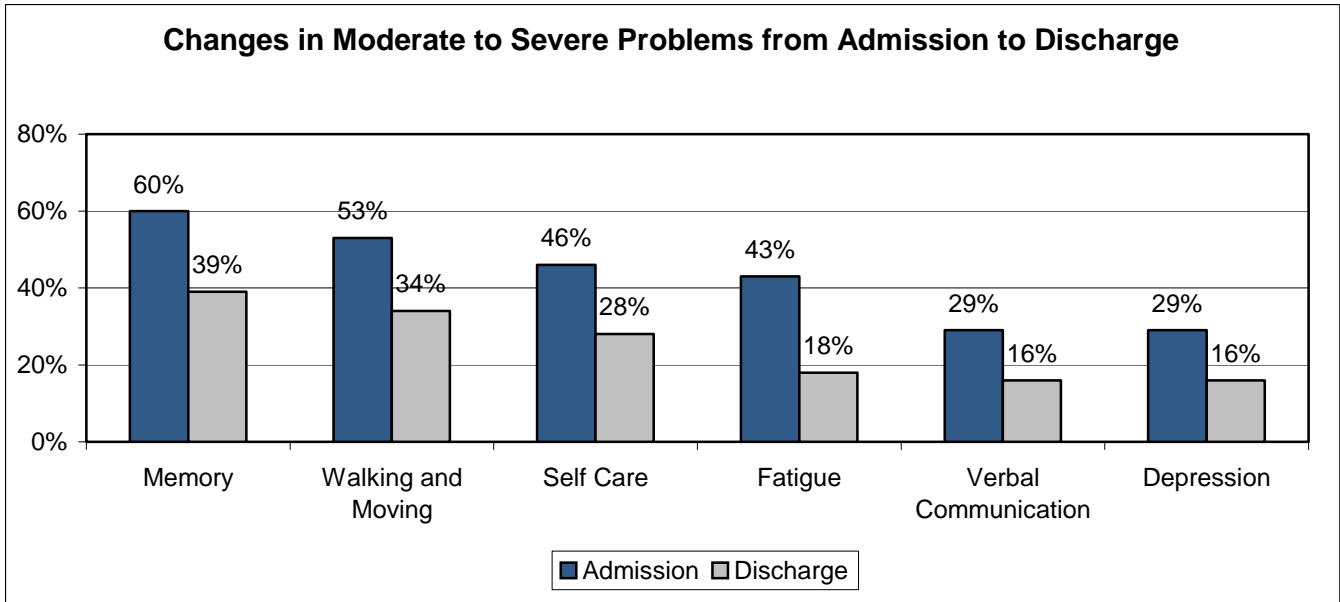
- Verbal communication was a moderate to severe issue for 29% of clients at admission.
- At discharge only 16% reported it as a moderate to severe problem.

Memory

- At admission 60% have moderate to severe memory problems.
- At discharge memory problems had decreased to affect 39%.

Depression

- Depression was a moderate to severe issue for 29% of all clients at admission.
- At discharge depression was a moderate to severe issue for 16%.



The subcategories of the Mayo-Portland were statistically significant ($p = .001$) improvements were made include:

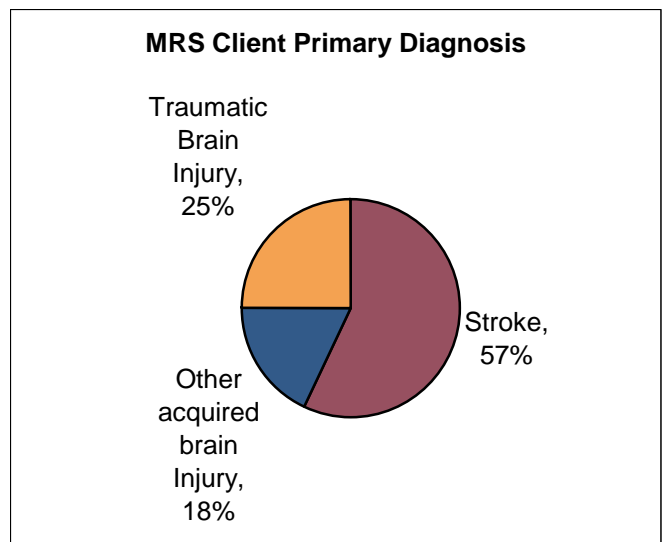
- walking and moving, use of hands, and vision
- verbal communication, memory, and novel problem solving
- depression, fatigue, social contact, and leisure
- self care, independent living, transportation and money

Medical Rehabilitation Services (MRS)

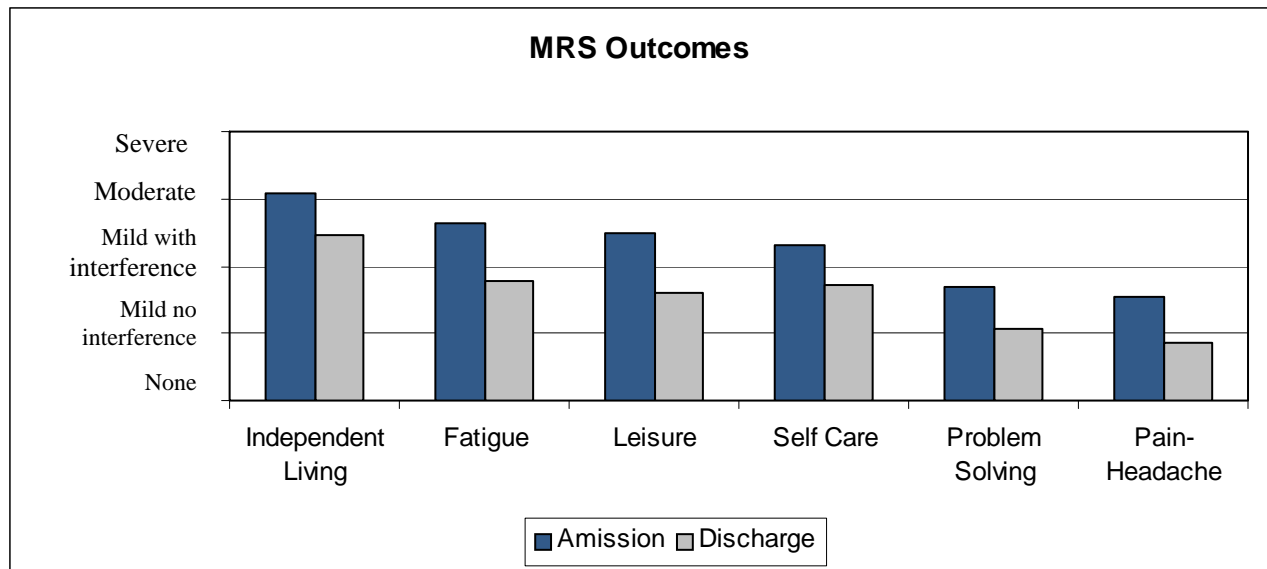
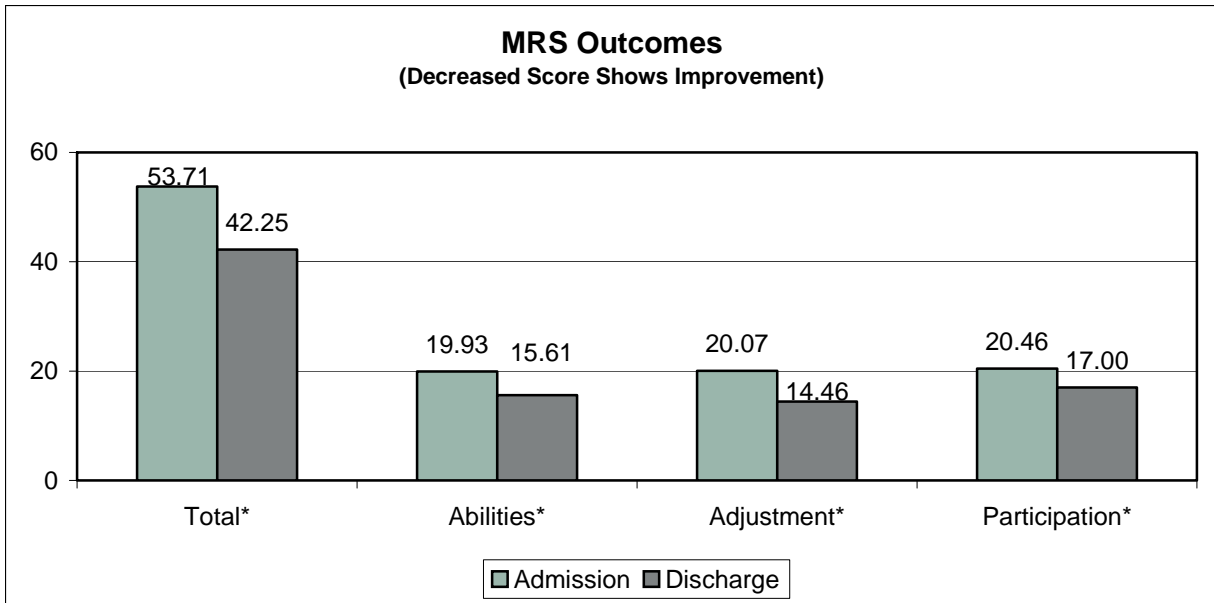
Medical Rehabilitation Services offered at Courage Center include physical therapy, speech and language therapy, occupational therapy, psychological services, interactive metronome therapy (for people with sensory processing difficulties) and dietician services.

Median MRS Client Demographics:

- 50% Female and 50% Male
- 51 years old
- 4 months of therapy
- Began MRS 10 months after the injury



Of the 183 clients reported on above, 28 receive MRS. Statistically significant gains were seen overall and in all three categories of ability, adjustment and participation for MRS clients (*p=.001).



Notable changes from admission to discharge:

Fatigue

- At admission to MRS, 68% have experiencing moderate to severe fatigue.
- At discharge only 32% of clients have moderate to severe problems with fatigue.

Memory

- Memory was a moderate to severe problem for 54% of clients at admission.
- Memory was a moderate to severe problem for 36% at discharge.

Leisure, including participation in recreational activities

- Leisure was a moderate to severe problem for 57% of clients at admission.
- At discharge, only 21% had moderate to severe problems with leisure.

Maintaining attention and concentration

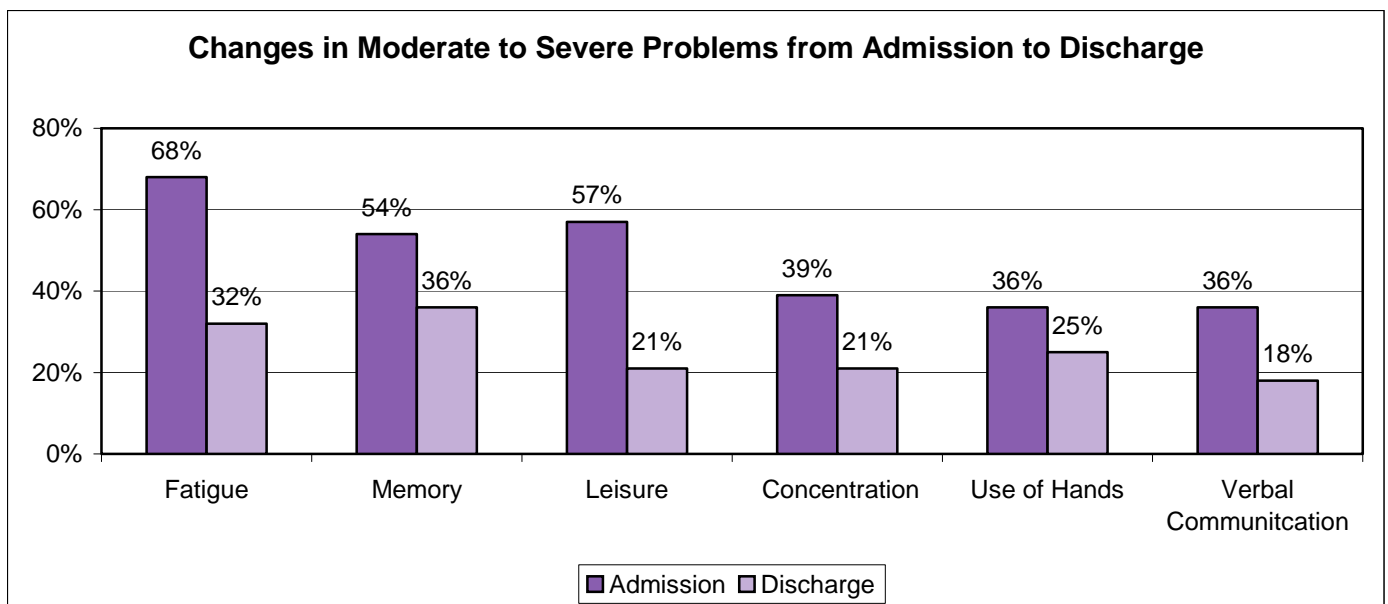
- Attention and concentration was a severe to moderate issue for 39% of people at admission.
- At discharge, only 21% had issues with attention and concentration.

Use of hands

- At admission, use of hands was a moderate to severe problem for 36% of clients.
- At discharge, only 25% had a moderate to severe problem with use of their hands at discharge.

Verbal communication

- Verbal communication was a moderate to severe issue for 36% of clients at admission.
- At discharge, only 18% of clients had a verbal communication problem.



The subcategories of the Mayo-Portland were statistically significant ($p = < .01$) improvements were made include:

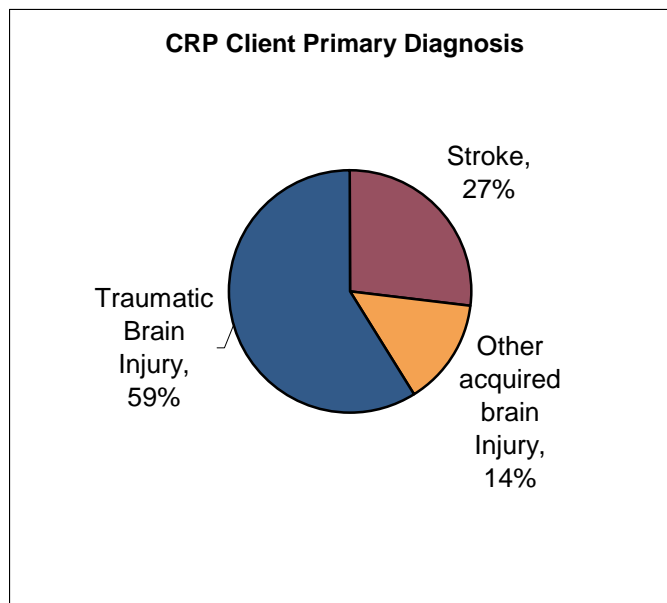
- mobility, verbal communication, and attention and concentration
- memory, problem solving, anxiety, irritability, and pain-headache
- fatigue, impaired self-awareness, significant family relationships
- initiation, leisure, and self care

Community Reintegration Program (CRP)

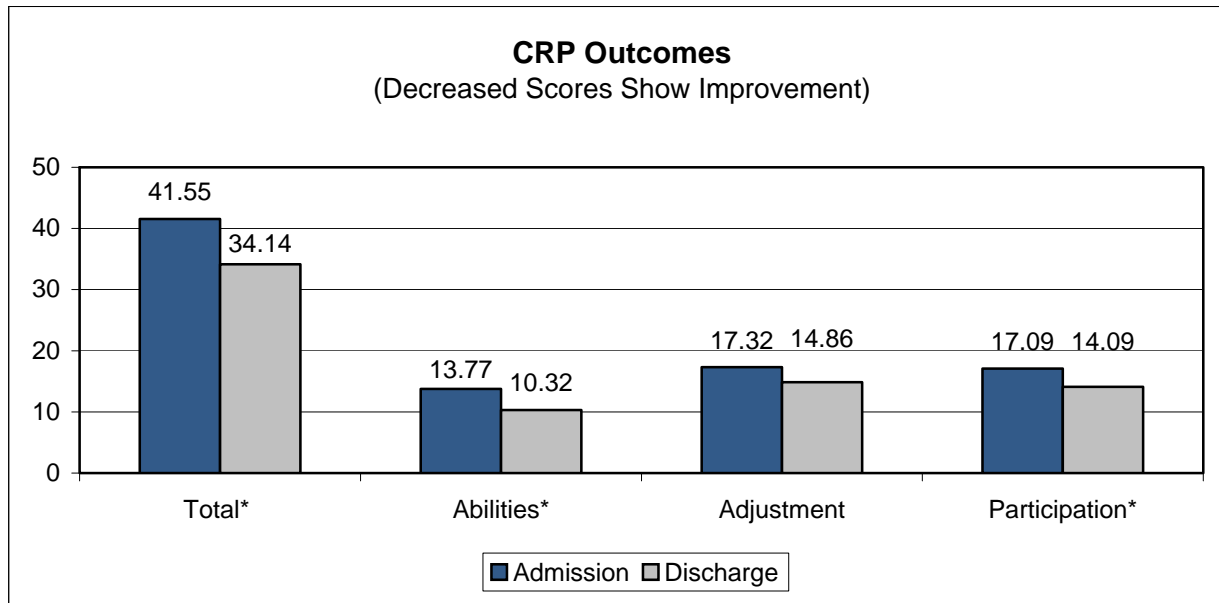
The Community Reintegration program is an intensive program designed to maximize the abilities and independence of clients who have had mild-to-moderate brain injuries and congenital conditions affecting cognition. Participants establish individual goals while working in group settings to receive support, gain independence and improve their skills.

Median CRP Client Demographics:

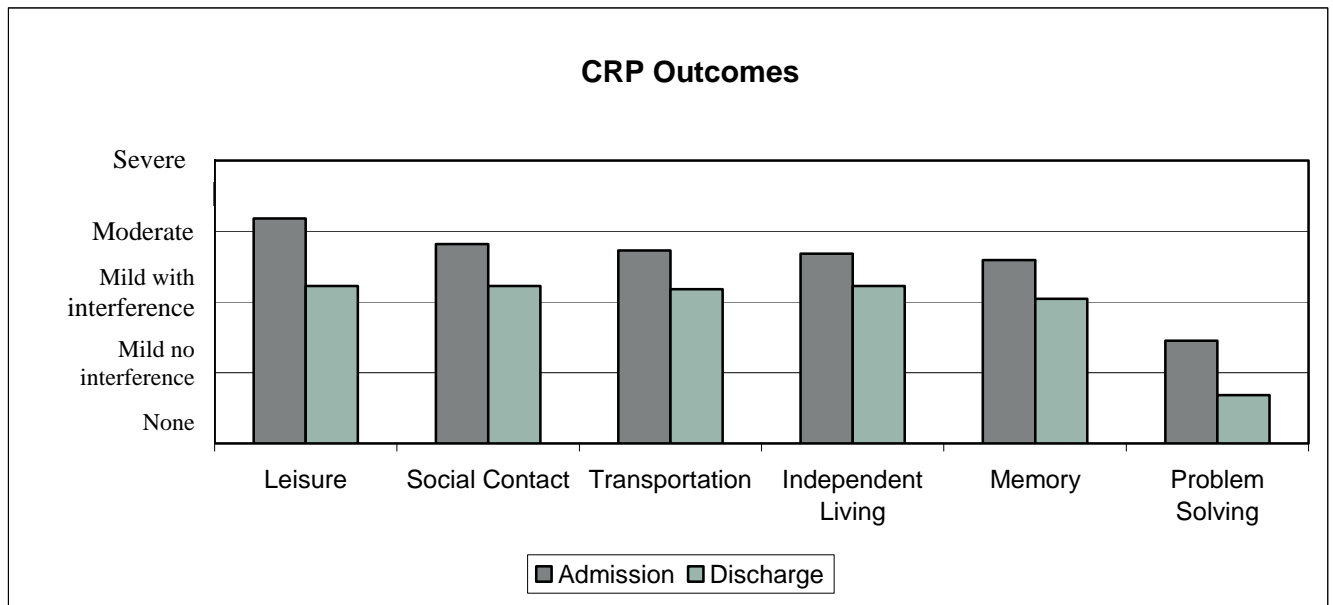
- 36% Female and 64% Male
- 46 years old
- 6 months of therapy
- Began CRP 37 months after the injury (~3 years)



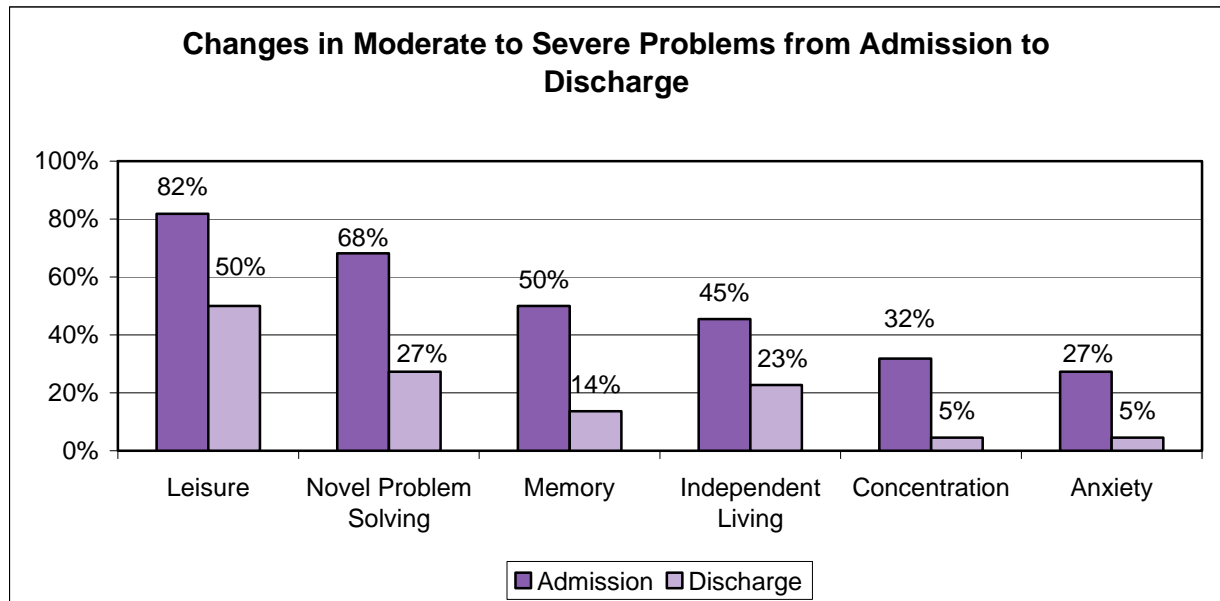
Of the 183 cases initially listed, 22 are CRP clients. Several areas are measured to evaluate progress for clients with brain injuries. The Mayo-Portland Adaptability Inventory measured gains in the three categories of ability, adjustment and participation. Statistically significant gains were seen in the categories of ability and participation for MRS clients (*p<=.01).



The areas found to have the largest improvement include: ability to participate recreational activities (leisure), social contact, transportation, independent living, memory and problem solving.



The areas that saw the largest decreases in moderate to severe problems from admission to discharge include: leisure, novel problem solving skills, memory, independent living, attention and concentration and anxiety.



Leisure

- At admission 82% of clients had moderate to severe problems in their ability to participate recreational activities (leisure).
- At discharge only 50% had moderate to severe issues.

Novel problem-solving

- 68% of clients have moderate to severe problems in novel problem-solving skills at admission.
- At discharge this decreased to 27% of the clients reporting a moderate to severe problem with novel problem-solving.

Memory

- At admission 50% of those in the program had moderate to severe problems with memory.
- At discharge only 14% were experiencing moderate to severe problems with memory.

Independent living

- Independent living was a severe to moderate problem for 45% or CRP clients at admission.
- At discharge only 23% reported having moderate to severe problems with independent living.

Attention and Concentration

- When clients were admitted to CRP, 32% were experiencing a moderate to severe problem with attention and concentration (concentration).
- At discharge a dramatic improvement in this area was observed with only 5% of clients having moderate to severe problems with attention and concentration.

Anxiety

- Anxiety was a moderate to severe issue for 27% of clients at admission.
- At discharge only 5% of CRP clients had moderate to severe anxiety issues.

The subcategories of the Mayo-Portland were statistically significant ($p < .01$) improvements were made include:

- memory, and novel problem solving
- impaired self-awareness, leisure and residence