Foundations of Neurobehavioral Management

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Objectives

- Facilitate skill development, critical thinking, and therapist confidence to successfully support the rehabilitation of patients with traumatic brain injury.
- Provide tools to identify, analyze and successfully provide interventions to address maladaptive behaviors
- Foster clear and effective communication to maximize collaboration between clinicians, patients and families

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Impact of Brain Injury on Anatomy

Frontal	Temporal	Parietal
• Personality changes • Decreased judgement • Increased impulsivity • Irritability • Aggression • Decreased drive • Lethargy • Apathy • Inappropriate sexual behavior • Decreased attention span • Unregulated mood and emotions • Expressive aphasia • Paresis or Paralysis	• Receptive aphasia • Difficulty recognizing faces • Decreased attention to auditory or visual stimuli • Difficulty with categorization • Memory problems • Emotional disturbances	• Apraxia • Impaired spatial awareness or neglect • Astereognosis • R-L disorientation • Alexia • Agraphia • Anomia

Impact of Brain Injury on Anatomy

Occipital	Deep Brain
• Visual confusion • Visual illusions • Hallucinations • Visual field cuts • Blindness • Difficulty identifying colors, objects, words or movements	• Disorientation • Frustration • Anger • Unmodulated emotions and affect – explosive rage

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Rancho Scale

1. No response
2. Generalized response
3. *Localized response*
4. *Confused-agitated*
5. *Confused-inappropriate-non-agitated*
6. *Confused appropriate*
7. Automatic appropriate

8-10. Purposeful appropriate

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Rancho 3 – Behavior Presentation

- Inconsistent command following (raising a hand, opening eyes, etc..)
- Brief attention span
- Occasionally tracking with eyes
- Discomfort is communicated through physical status (blood pressure, temperature, posture, pulling at tubes, etc..).

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Rancho 4 – Behavior Presentation

- Agitated and aggressive
- Confused
- Uncooperative
- Confabulates
- No day to day memory
- Easily overstimulated
- Disoriented

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Rancho 5 & 6 – Behavior Presentation

Rancho 5
- Easily fatigued
- Occasionally agitated
- Occasionally overstimulated
- Poor day-to-day memory
- Poor initiation
- Confused
- Disoriented

Rancho 6
- Emerging Initiation
- Short attention span
- Slow processing
- Emerging memory
- Improving endurance
- Disoriented
- Emerging awareness

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Basic Concepts for Patient Management

1. Know and observe patient *Behavior*
2. Use a *Team Approach*
3. Create a *Therapeutic Environment*
4. Plan for *Therapeutic Interactions*

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Team Approach

- Team workflow
- Communication
- Behavior Management Plans

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Team Communication

- Who - Everybody
- What – Just the Facts!
- When – Timely opportunities
  - Rounds, case plans, patient handoffs
  - In person, email or phone as appropriate
  - Initiate and make time for communication
- Why – Professional Role

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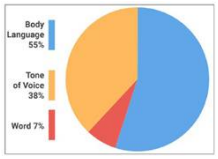
Communication

How are you presenting yourself?

- Internal Factors
  - Attitude and positive regard for patient
  - Mood
  - Motivation
  - Good at multi tasking
  - Tolerance for rapid and constant change
  - Ability to assess temperament
  - Understanding of own vulnerabilities
- External Factors:
  - Body language:
    - arms crossed
    - eye contact
    - volume of voice



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Behavior Management Plans

- Behavior plan format
  - Short and long term goals
    - Tangible achievements - Projected functional outcomes
  - Definition of target behaviors
    - Behaviors that interrupt therapy
    - Impede progress
    - Endanger others
    - Disrupt activities
  - Data collection
    - Frequency, timing and duration of behaviors
  - Staff procedures
    - How to arrange environmental conditions to reduce chances of behavioral episodes
    - Outline response options for staff

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Client Protection Plan Example

- Before you help me:
  - Tell me what you are going to do (avoid startle response
  - Touch me gently so I can get ready
- Wait a moment so I can adjust when you see me:
  - Frown over left eye
  - Purse my lips
  - Try to cough
  - Begin to drool
- Completely stop what you are doing when you see me:
  - Frown, purse my lips, and pull back the corners of my mouth
  - More than usual drooling
  - Increase body tone
  - Turn my head away from you

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Therapeutic Environment

- Safe
- Low stimulation
- Access to variety of activities
- Rest time

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Patient Safety Check

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Environmental Safety Check

- Environment/External Factors
  - Physical environment
  - Exits, sound, temperature
  - Pictures, distractions
  - Attire
  - Mobility
  - Necessary items
  - Cluster cares
  - Work in pairs

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Low Stimulation

- 5 Senses
  - Sight
  - Sound
  - Smell
  - Taste
  - Touch
- Reduce distractions
- Number of people
- Mindful use of TV
- Cross talk
- Clutter
- Introduce yourself

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Variety of Activities

- Activity stations
- Activity boxes
- Wheelchair biking
- Walking
- Therapies

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More Activity Ideas

- Do activities they enjoy
- Use checklists, memory book, schedules
- Provide familiarity with physical environment
- Capitalize on self-oriented, automatic behaviors
- Play simple, over-learned games – improves attention, memory and problem solving
- Gross motor easier than fine motor

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Rest Periods

- Scheduled mid-day break
- No TV or devices
- Room should not be fully dark
- Allow for quiet, if not actually sleeping
- Should not sleep for more than about 1 hr.

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Rancho 3 Therapeutic Environment – Comfort

- Use low stimulation guidelines
- Implement therapeutic rest breaks as needed
- Use team communication methods
- Establish a behavioral baseline to know how environment is impacting the patient
  - Observe resting posture, signs of discomfort, attempts to communicate, etc.
- Limit the number and duration of visitors
- Consider using a client protection plan

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Rancho 4 Therapeutic Environment – Structure

- Use low stimulation guidelines
- Schedule therapeutic rest breaks as needed
- Implementing a daily routine is helpful
- Know and watch for things that agitate the patient and avoid them
- Provide a structured, predictable and safe environment

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Rancho 5/6 Therapeutic Environment - Consistency

- Use low stimulation guidelines
- Implement therapeutic rest as needed
- Environment and Routines should be predictable
- Have structured activities to perform during downtime (they need multiple tasks on hand to switch between: folding towels, playing cards, etc..)
- Approach should be same across disciplines
- Avoid noisy areas
- Team communication regarding routines is even more important at this stage

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Therapeutic Interactions

- Communication Tips
- Providing Choices
- Errorless learning
- Over-plan
- Task analysis
- Remain calm

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Communication with Patient

- Respectful
- Simple
- Natural
- Allow time to respond
- Considerations when rephrasing
- Provide choices

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Maximize Effective Communication

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Body Language, Intonation, Gestures, Facial expressions

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Errorless Learning

- Addresses Procedural learning tasks
- Principles:
  - Break down tasks
  - Provide modeling before practice
  - Do not allow guessing
  - Use prompts to avoid errors
- Increased patient success, lowers rate of frustration
- Gradually wean prompts /assist while maintaining success rate

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Rancho 3 Therapeutic Interactions - Calming

- Talk as if the person understands
- Use a soothing, calm voice
- Touch the person – for orientation to your presence
- Give the person extra time to respond
- Conversations with the patient present should be directly relatable
- All team members, including families, should be watching for consistent responses to stimuli

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Rancho 4 Therapeutic Interactions - Reduce Confusion

- Provide orientation information
- Don't quiz
- Disengage when escalating
- Allow time and space to respond
- Don't try to reason with them
- Avoid making jokes or using sarcasm
- Avoid verbally responding to their behavior
- Check your own emotions and get relief as needed to maintain calmness and control

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Rancho 5/6 Therapeutic Interaction - Orientation

- Focus on functional activities
- Complexity should be low
- Do what you can to help patient be successful
- Use memory notebooks
- Treat in the least distracting environment
- Avoid quizzing the patient or asking too many questions
- Use procedural learning techniques

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Crisis Management

- Behavior Modification Ethics
- ABC Model of Behavior
- Prevention
- Intervention

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Definitions of Behavior

ABC model of behavior

- ***Antecedents*** – cues that occur before a target behavior and increase the probability of a given response.
- ***Behavior*** – the way in which a person acts in response to a particular situation or stimulus
- ***Consequences*** – event immediately following a behavior, cumulatively have an influence on whether a behavior occurs again.

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Observation

Baseline vs moving away from baseline

- Posture
- Facial Expression
- Voice Quality
- Eye contact
- Breathing
- Skin tone
- Environment

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Needs Assessment and Triggers

How can knowledge inform your care?

- Background
  - Culture
  - Family system structure
  - Psycho-social history
  - Medical conditions
  - Trauma or substance abuse history
  - Occupation
  - Likes, dislikes

What observations can you make about the patient?

- Fatigue
- Change of environment, routine, staff
- Responses to overwhelming or misleading stimuli
- Excessive demands
- Patient Need
  - Pain, hot/cold, bowel/bladder needs, position, safety, confusion
- Consider impact of injury – double vision, dizziness

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Maladaptive Behavior

- It is not a synonym for bad behavior, rather, it is behavior that is inadequate, inappropriate or excessive in a given situation
  - Dysfunctional
  - Non-productive
  - Often irrational

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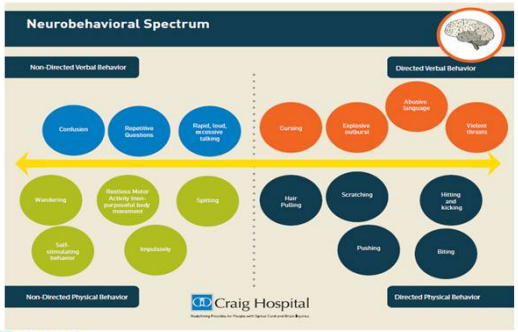
Neurobehavioral spectrum



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Behavioral Consequences

- Impact the future rate, duration and intensity of the behavior
- How does a behavioral response benefit the patient?
  - What do they___?
    - Get?
    - Escape?
    - Avoid?

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Interventions

- Verbal Alternatives
- Redirection
- Calming techniques
- Behavior Replacement
- De-escalation
- Physical interventions

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Goal of Interventions

- Goals of behavior management as a part of rehabilitation:
  - Decrease maladaptive behaviors
    - Teach what not to do
  - Increase appropriate behaviors
    - Teach what to do
    - Behavior replacement

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Obstinate patient case

- What is the identified behavior?
- What were the antecedents?
- What were the consequences?
- Approach?

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Cody is a 24 year old male, who was injured in a motor vehicle accident. He currently presents as a Ranch IV. He has a diffuse axonal injury with fronto-temporal lobe involvement. Cody is positioned in his manual wheelchair with lock belt secured. Two staff members and 2 family members are in the room with Cody. It is a beautiful, sunny, Colorado day and Cody's mom has opened the blinds to let the sunshine in. One staff member is educating Cody's family on TBI recovery, while the other is helping Cody fill out his lunch menu. Cody attempts to self-propel his wheelchair across the room. When asked to remain in place, he begins to speak with an increasingly loud voice, and make direct eye contact. At that time, Cody's parents and staff step closer and verbally offer him several choices to "calm him down". Cody then begins yelling insulting comments directed at both staff and family, he firmly declines all choices offered and continues yelling inappropriate comments as he attempts to get out of the door.

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Verbal Alternatives

- Ask permission
- Patient specific incentives
- Rephrasing to include choices and options
- Inform patient ahead of time about upcoming transitions
- Using simple written lists

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Patient Specific Incentives

Listening
Games
Time
TV
Privacy
Music
Rest
Touch






Food or Drink
Freedom
Phone
Passes
Calls
Praise
Recognition

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Physical patient case

- What is the identified behavior?
- What were the antecedents?
- What were the consequences?
- Approach?

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Physical Vignette

Around 1:15pm Cody was in his tilt –in-space wheelchair with a lock belt secured. Cody became increasingly restless and started to remove his shirt, shoes, and pants. Cody was scheduled for a therapy session at 1:30 and was asked to put his clothes back on. Cody continued to remove his clothing and move around restlessly in his chair. When Cody was asked again to put on his clothing he firmly replied "No". At that time, staff stepped in and started pulling his pants back up. Cody first grabbed the staff's hands and then swiftly punched her in the chest.

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De-Escalation

Disengagement: the key to success

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De-escalation

- Verbal and Non-verbal techniques

1. Respect personal space
2. Do not be provocative
3. Establish verbal contact
4. Be concise
5. Identify wants/needs
6. Set clear limits
7. Offer choices
8. Debrief the patient and staff

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Physical Skills

- Therapeutic Holds
- Hair pulls
- Arm grabs
- Nails/Bites

- Consider principles of disengagement, reduced leverage and control

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Education and Learning

- Debriefing
- Documentation

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De-briefing after Escalated Event

- What happened?
  - Antecedents – Behaviors – Consequences
- What went well?
- What didn't go well?
- What can we do better?
  - Track certain triggers
  - Monitor antecedents
  - Intervene sooner

The definition of insanity is doing the same thing over and over and expecting different results.

Documentation

- Just the facts
- Agitated event
  - Include components of Debriefing
- Ethical
- Indicator of Medical Necessity
- Considerations for Progress
- Identifies Skilled Care

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Summary

- Build Critical Thinking
  - Every injury is different, usually multiple injuries result in patient presentation
- Cultivate Professionalism and Identify Tools
  - TEAM approach to care
  - Neurobehavioral Interventions
- Foster Clear and Effective Communication
  - This takes collaboration!

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Questions or Comments?

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