Minimally Conscious State

Essential Components of a Rehabilitation Program
Case Study Presentations

Cara Camiolo Reddy, MD
Terry Breisinger, MPT, NCS
Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP
Allyson Yukevich, MOT, OTR/L, CBIS
Sara Hershberger, PT, DPT, NCS

The million small victories Institute.
UPMC Rehabilitation Institute

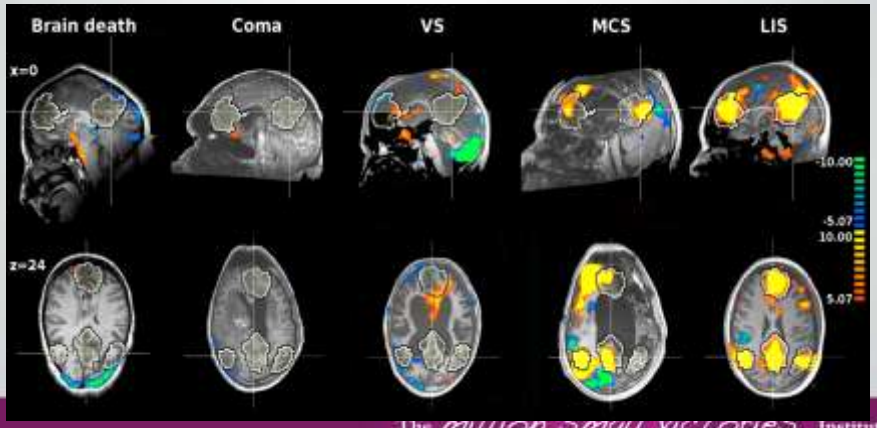
Objectives

- Define 3 challenges of developing a Disorders of Consciousness Program
- Discuss 3 benefits of objectifying progress with patients who have Disorders of Consciousness
- List 3 barriers to safe/effective discharge home for individuals with disorders of consciousness
- Discuss 3 ways to improve discharge planning for individuals with disorders of consciousness in the inpatient rehabilitation setting

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Altered states of conscious are far from black and white…



The million small victories Institute.
UPMC Rehabilitation Institute

How do we provide information to patients?

- Information about a specific condition
- Evidence organized around specific decisions
- Accessible – charts, graphs
- Balanced
- Encourage patients to interpret evidence in context of their own goals and concerns
- Include patient stories

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Coma

- Definition: A state of extreme unarousable unresponsiveness, in which an individual exhibits no voluntary movement or behavior to either internal or external stimuli

- Continuous absence of eye opening
- No sleep/wake cycles
- Reflexive behavioral responses
- Loss of function in cortical/reticular systems

The million small victories Institute.
UPMC Rehabilitation Institute

Vegetative State

- Definition: Disorder of consciousness in which patients with severe brain injury that are in a state of partial arousal rather then true awareness

- Absence of behaviors that typically accompany conscious awareness of environment

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

VS: Clinical Presentation

- No evidence of command following
- No intelligible verbal response or attempts to communicate
- Intermittent wakefulness with inconsistent sleep-wake cycles
- Preservation of autonomic functions to permit survival with adequate medical care
- Localizing or automatic motor responses
  - Same response to sound, sight or touch

The million small victories Institute.
UPMC Rehabilitation Institute

Minimally Conscious State

- Definition: A condition of severely altered consciousness in which minimal but definite behavioral evidence of self or environment awareness is demonstrated

- Presence of specific behavioral manifestations of conscious awareness

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

MCS: Clinical Presentation

- Inconsistent:
  - Arousal on and off during the day
  - Comprehension of simple commands
  - Manipulation of objects
  - Gestural or verbal yes-no responses
  - Intelligible verbalizations
  - Stereotyped movements not attributed to reflexive activity

The million small victories Institute.
UPMC Rehabilitation Institute

Challenge to Diagnosis

- 37-43% of patients who suffered a TBI were misdiagnosed as being in a vegetative state
- Accuracy is key!
  - Daily management
  - Pain Control
  - Goals
  - Prognosis

The million small victories Institute.
UPMC Rehabilitation Institute

Childs NL, Mercer WN, Childs HW. 1993. Accuracy of diagnosis of persistent vegetative state. Neurology 43(8):1465-67.

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Notable Barriers in Acute

- "I don't have any therapy goals"
- "What do I have to document?"
- "My patient isn't awake… how can I provide realistic treatment?"
- "It is hard to justify treatment without any measurable progress…"

The million small victories Institute.
UPMC Rehabilitation Institute

TBI ≠ DOC

- Notable barriers on 6E
  - FIM Scores do not capture progress early
    - FIM Total=18
  - Treatment strategies differ
  - Non Traditional Goals
  - Prolonged length of stay
    - Medically complex
    - Family support/ training
- Ongoing changes to program…

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

DOC Program: Early Goals

- Track progress → **Coma Recovery Scale**
- Prevent Medical complications
- Proper positioning
- Early mobility
- Cognition and communication
- Family/caregiver support and education

The million small victories Institute.
UPMC Rehabilitation Institute

Emerging observations

- Righting reactions of the head in various positions
- Sitting Balance and balance reactions
- Tolerance to activity (EO vs EC)
- Vitals response to movement
- Opportunities for EARLY MOBILITY!

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Family Education

- It's never too early…
  - "hope for the best, plan for the worst"
  - Home setup/modifications
  - Splint schedules
  - Stretching Program
  - CRS Emergent behaviors to observe
- Keep it simple and repeat!

The million small victories Institute.
UPMC Rehabilitation Institute

DOC Program Future

- Broaden the continuum of care throughout entire length of stay
- Bridge gap between acute and IPR to improve outcomes
- Implement Coma Recovery Scale as a standard outcome use on all DOC patients

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

DOC Program = Integrated Team Approach

- Team Assessment
- Team Goals
- Team Care Rounds
- Team Treatment
- Team Plan of Care Conference
- Team Family Conference

The million small victories Institute.
UPMC Rehabilitation Institute

DOC Team

Patient
Family / Caregivers
Care Manager
Neuro psychologist
Nursing Team
Occupational Therapist
Physical Therapist
Physician Team
Speech Language Pathologist

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

DOC Team Assessment

Integrated Interdisciplinary Team Assessment

Assessment Tool = Coma Recovery Scale
(Revised JFK Coma Scale 2004)

Coma Recovery Scale
The purpose of the scale is to assist with
- differential diagnosis
- prognostic assessment
- treatment planning

for patients with Disorders of Consciousness

The million small victories Institute.
UPMC Rehabilitation Institute

Team Assessment

Coma Recovery Scale

- Scoring items organized into 6 subscales comprised of hierarchically arranged items associated with brainstem, subcortical, and cortical processes
  - Auditory Function Scale
    - 5 levels
  - Visual Function Scale
    - 6 levels
  - Motor Function Scale
    - 7 levels
  - Oromotor/ Verbal Function Scale
    - 4 levels
  - Communication scale
    - 3 levels
  - Arousal Scale
    - 4 levels
- Score absence or presence of responses and behaviors at each level
- Scores can range from 0 to 23

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

DOC Team Assessment

Integrated Interdisciplinary Team Assessment

Weekly Prior to Plan Of care Conference

- Friday Email to team identifying time frame and patients to be assessed
- Monday Afternoon Team Assessment occurs
- Allows for most up to date status for Plan of care Conferences Tuesday
- Occurs weekly until emerged from Minimally Conscious status or Discharge

The million small victories Institute.
UPMC Rehabilitation Institute

Team Assessment

Benefits

- Individualized
- Comprehensive
- Timely
- Efficient
- Provides data to the Team
  - Clarifies status
  - Allows for comprehensive Team directed Plan of care
  - Data is timely prior to Plan of care Conference
  - 15-30 minute weekly assessment facilitates efficient treatment plan

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

CRS Team Assessment Results

Data / Results

- Data = 10 months
- Sample -= 20 patients
  - 15 Traumatic Brail Injury
  - 4 ACOM aneurysm
  - 1 Anoxic Brain Injury

The million small victories Institute.
UPMC Rehabilitation Institute

CRS Team Assessment Results

Discharge Disposition

- 15 Traumatic Brail Injury
  - 10 D/c Home
  - 4 D/c Acute
  - 1 D/c SNF
- 4 ACOM aneurysm
  - 2 D/c acute
  - 1 SD/C SNF
- 1 Anoxic Brain Injury = D/C Home

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

TBI CRS Team Assessment Results

	Days Post	CRS 1	CRS 2	CRS 3	CRS 4	CRS 5	LOS	D/c Disposition
1	71	10	12	18	20		49	Home +
4	129	6	7				15	Home -
5	232	9	9	10			30	Home-
7	59	14	8	10	8		36	Home+
8	21	6	6	22	23		59	Home +
11	189	4	10	7			27	Home +
12	24	3	11				49	Home +
13	43	13	19				43	Home +
14	21	7	6	15			56	Home +
15	35	8					47	Home +

The million small victories Institute.
UPMC Rehabilitation Institute

TBI CRS Team Assessment Results

	Days Post	CRS 1	CRS 2	CRS 3	CRS 4	CRS 5	LOS	D/c Disposition
2	39	6	6				30	SNF -
3	48	5	5	8	6		34	SNF -
6	21	8	7	8	9		33	Acute / Crani
9	31	7	10	13	15		20	Acute / Crani
10	44	7	9	11	13	17	36	SNF -

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

ABI CRS Team Assessment Results

	Days Post	CRS 1	CRS 2	CRS 3	CRS 4	CRS 5	LOS	D/c Disposition
1	67	4	6	6	6		28	Home -

The million small victories Institute.
UPMC Rehabilitation Institute

ACOM CRS Team Assessment Results

	Days Post	CRS 1	CRS 2	CRS 3	CRS 4	CRS 5	LOS	D/c Disposition
1	41	16					22	Acute
2	24	0	3				11	*
3	27	14	17	18			23	Acute
4	26	8	9	14			24	SNF

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

DOC Program

Charting

- Coma Recovery Scale
- Vital Signs
  - Pre / During / Post Activity
  - Position
- Level of Arousal
  - = % of Eyes Open (EO) / session
- Response to stimuli
  - Immediate
  - Delayed
  - Absent

The million small victories Institute.
UPMC Rehabilitation Institute

DOC Program

- DOC Program Meetings
- DOC specific Coverage Notes
- DOC Specific Patient Family Education
- DOC Acute Care staff Education
- DOC Data Collection

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

CASE STUDY: PROGRAM IMPLEMENTATION

The million small victories Institute.
UPMC Rehabilitation Institute

History and Physical

- 27 year old male status post motor vehicle crash on 12/16/14
- HCT (+) SDH, SAH, IVH, DAI with brain stem involvement
- R clavicle fracture, L ankle fracture including 2nd/3rd metatarsal (non-weight bearing right upper extremity/ left lower extremity)
- Complicated hospital course by:
  - R blown pupil
  - Hemothorax
  - Trach placed 12/22/14

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

History and Physical

- Lives in a 1 story house
- Employed as a pipeliner for a gas drilling company
- Enjoyed his dog, blue grass music, youth group leader, and Cleveland Browns fan
- Prior level of function: independent

The million small victories Institute.
UPMC Rehabilitation Institute

Initial Evaluation 1.7.15

- Physical Therapy
  - Dependent for all functional mobility
    - Orthopedic Complications: NWB R LE
  - PROM UE/LE WFL
  - No Spasticity
  - Spontaneous Visual field scanning
  - Arousal: Eyes open <25% of the time

Initial Coma Recovery Score: 5

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Initial Evaluation 1.7.15

- Occupational Therapy
  - Dependent for activities of daily living and transfers
  - No command following
  - Visual threat in Left eye and 50% in the Right eye
  - No purposeful tracking
    - However 2nd session spontaneous movement noted on the left upper extremity and occasional tracking to father's voice on the left.

The million small victories Institute.
UPMC Rehabilitation Institute

Initial Evaluation 1.7.15

- Speech Therapy
  - #8 cuffed Shiley trach, tolerating cuff deflation
    - Not tolerating PMV trials
  - NPO
    - Spontaneous saliva swallows, swallows w/oral care
    - Mouth guard for bruxism
  - Nonverbal
    - No gestures or command following
    - Occasional facial expression in response to discussion of others (ie. Furrowed brow)

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Week 1 Presentation

- Physical Therapy
  - Sitting Balance – Total Assist
    - No balance reactions noted
    - Poor head/trunk control
  - Arousal: Eyes open 75% of session
  - Visual Scanning to Name and family: 50% of time
  - Inconsistent 1 step commands

Coma Recovery Scale: 6

The million small victories Institute.
UPMC Rehabilitation Institute

Week 1 Presentation

- Occupational Therapy
  - Left upper extremity withdrawl response noted during morning activity of daily living routine
  - Spontaneous movement noted on left digits
  - Passive range of motion to bilateral upper extremities
  - Command following for upper extremity exercise

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Week 1 Presentation

- Speech Therapy
  - #6 cuffless Shiley trach
    - Tolerating PMV throughout the day
  - NPO, mouth guard removed
  - Nonverbal
    - Inconsistent y/n response via eye gaze or blinking
    - Inconsistent command following for simple body-centered commands
    - Inconsistent object ID in field of 2 via eye gaze

The million small victories Institute.
UPMC Rehabilitation Institute

Week 2 Presentation

- Physical Therapy
  - Maximum Assist for functional transfers
    - Improved initiation
  - Restless and Resistive behavior
  - Object Manipulation
  - Following 1 step commands 100%

Coma Recovery Scale: 10

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Week 2 Presentation

- Occupational Therapy
  - Visual scanning/tracking exercises
  - Cervical spine stretching
  - Photo identification tasks
  - Command following for activities of daily living tasks

The million small victories Institute.
UPMC Rehabilitation Institute

Week 2 Presentation

- Speech Therapy
  - #6 cuffless Shiley trach
    - Tolerating capping trials
  - NPO
    - Beginning PO trials
  - Nonverbal
    - y/n via multimodal communication inconsistent
    - Spontaneous involuntary vocalization, not voluntary

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Early Short Term Therapy Goals In Recovery

- Improved Arousal and Initiation with activities
- Develop mode of communication for basic wants and needs
- Improved command following for simple tasks
- Family Training

Long Term Goals: ModI/supervision

The million small victories Institute.
UPMC Rehabilitation Institute

Progress (week 3-5)

- Physical Therapy
  - Supervision for Sitting balance
  - WBAT R LE
    - Moderate Assistance for ambulation, transfers, stairs
    - BWS overground ambulation trianing
    - Non supported gait training
  - Verbal Agitation/frustration
    - Decreased insight, impulsive, easily distracted

Coma Recovery Scale Score : 22

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Progress (week 3-5)

- Occupational Therapy
  - Requiring Maximum assistance for grooming tasks progressing to Moderate assist for dressing tasks.
  - Maximum assistance for sliding board transfers progressing to stand pivot transfers with maximum assist
  - Yes/no response using a white board
  - Becoming resistive to tasks progressing toward pleasant/ cooperative
  - Therabar therapuetic exercise
  - Functional mobility around the unit with minimal assistance

The million small victories Institute.
UPMC Rehabilitation Institute

Progress (week 3-5)

- Speech Therapy
  - Decannulated
  - Diet Initiation
    - MBS unsuccessful as he rejected barium boluses
    - Diet progressed from D1/thins to D2/thins
    - Selecting preferred PO via pointing
  - First voluntary vocalization/verbalization week 3
    - Week 4 – mod-severe spastic dysarthria (~50% intell.)
  - Week 5 cognitive testing
    - Moderate on CLQT
      - Severe in Attention, Executive Functions
      - Mod in Visuospatial Skills, clock drawing
      - Mild in Visuospatial Skills and Memory (still confabulatory)

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Getting Ready for D/C Home (week 6)

- Physical Therapy
  - Minimal Assistance/Supervision for all functional mobility
  - Higher Level Balance Activities
  - Community Outing

Coma Recovery Scale Score : 23

The million small victories Institute.
UPMC Rehabilitation Institute

Getting Ready for D/C Home (week 6)

- Occupational Therapy
  - Completing a scavenger hunt around the unit
  - Self care routine at supervision to minimal assistance level
  - Minimal assistance for functional transfers
  - Supervision to minimal assist for moderate cognition tasks.

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Getting Ready for D/C Home (week 6)

- Speech Therapy
  - Regular diet/thin liquids
  - Mild dysarthria but 80-100% intelligible to unfamiliar listener
    - Improving prosody and rate
    - Using humor, not always appropriate
  - Moderate cognitive deficits
    - Ex functions, problem solving/reasoning most significant
    - Confabulation still a limitation

The million small victories Institute.
UPMC Rehabilitation Institute

DISCHARGE PLANNING: 2 CASE STUDIES

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Healthcare Costs of Severe Brain Injury

- The CDC estimated in 2010 that direct and indirect costs of care for severe brain injury were $76.5 billion
  - Initial medical care
  - Loss of productivity
  - **Long term care needs**

Benefits of Home

- #1 goal of our patients and their family
- Familiar environment
  - Less stress on brain

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Case Study #1

- 17 year old male, car surfing-ejected to highway
  - GCS 3 in the field
- Found to have diffuse SAH, SDH, hemorrhagic parenchymal contusions, multiple facial and skull fractures, bilateral pulmonary contusions, L carotid aneurysm
- Required bilateral frontal craniectomy

The million small victories Institute.
UPMC Rehabilitation Institute

Case Study #1

- Hospital Course complicated by: paroxysmal sympathetic hyperactivity, tracheostomy, PEG placement, hypernatremia
  - 2 interruptions of IRF stay
- Previously independent, senior in highschool, enjoys football, baseball, splits time with divorced parents

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Case Study #1

- Initial Eval (September):
  - No eyes open, command follow, positive withdrawl to noxious stimulation
  - Spasticity noted all extremities
  - L ankle -35* DF, R ankle -25* DF

The million small victories Institute.
UPMC Rehabilitation Institute

Case Study #1

- Full coma recovery scale not documented until December: 6/23
  - One week later 7/23
- Early family engagement with care and treatment sessions
  - Assisting with hygiene, dressing, transfers, stretching, edema management, standing frame activities

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Case Study #1

- Plan from the beginning to take individual home regardless of level of care required
- Discharged home with tilt in space wheelchair, standing frame, shower chair, hospital bed, trach supplies, tube feeding supplies

The million small victories Institute.
UPMC Rehabilitation Institute

Case Study #1

- Follow up phone call
  - Confused about medication administration
  - Little sleep for caregivers and patient
- Increased contractures
- Poor use of standing frame
- Miscommunication regarding management of hetertropic ossificans

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Case Study #2

- 23 year old male pedestrian vs vehicle
  - GCS 5 in the field with posturing noted
- Noted with diffuse axonal injury, multiple IPH, L frontal SDH, R parietal SDH, bilateral temporal bone fracture, L tibial plateau fracture with possible ACL tear
  - Placed in knee immobilizer 20-30* flexion, WBAT

The million small victories Institute.
UPMC Rehabilitation Institute

Case Study #2

- Living in 2 story home with parents
- Independent
- Working at grocery store
- Enjoys video games and hanging out with friends

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Case Study #2

- Initial Eval: Total assist for transfers, sitting EOB
- No command follow
- No tone noted all extremities, full ROM
- R gaze preference
- Auditory startle and localization noted
- Visual startle and tracking noted

The million small victories Institute.
UPMC Rehabilitation Institute

Case Study #2

Week	JFK Score
1	8/23
3	8/23
5	9/23
6	14/23
8	10/23

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Case Study #2

- Family Meeting Week 7
  - Team approach
    - Medical overview
    - Therapy interventions and goals
  - Checklist of family training to be completed
  - List of equipment likely needed at home
  - Discussion of need for home visit

The million small victories Institute.
UPMC Rehabilitation Institute

Case Study #2

- Home visit 2 days prior to discharge
  - PT/OT
    - ❖Main goal to assess safety of use of stair glides for entry into home
  - Assessed bathroom mobility
  - Assisted with room set up

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Factors Effecting Caregiver Retention

- Anxiety
- Coping
- Relevance
- Consistency

The million small victories Institute.
UPMC Rehabilitation Institute

Goals for education prior to discharge home

- Spasticity management/monitoring
  - Splints, stretching
- Monitoring for emergence
  - Need for increased level of care
- Mobility training
  - Transfers, bed mobility
- Finding a community and/or having an option for respite care

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS

Goals for education prior to discharge home

- Skin care
- Use of equipment
- Medication administration
- GI Tube maintenance
- Trach care

The million small victories Institute.
UPMC Rehabilitation Institute

Future Program Changes

- Home visits on a case by case basis
- Telephone/telemedicine follow ups
  - Problem solving
  - Monitoring for emergence

The million small victories Institute.
UPMC Rehabilitation Institute

Cara Camiolo Reddy, MD, Terry Breisinger, MPT, NCS, Jordana C. Gracenin, PT, DPT
Laura Scott, MA, CCC-SLP, Allyson Yukevich, MOT, OTR/CBIS, Sara Hershberger, PT, DPT, NCS