The Challenge of Patient Safety: Creating a Safety Net for a High Wire Act

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Objectives

1. Identify multiple factors that contribute to patient safety following TBI
2. Discuss environmental, behavioral, and team-based interventions that provide a “safety net” for TBI patients
3. Describe universal challenge of maintaining patient safety after TBI and related research efforts
Factors that Contribute to Patient Safety

- Frontal/temporal lobe damage, neurotransmitter imbalance
- Agitation
- Environmental concerns
- Physical triggers
- Confusion
- Behavioral, emotional, cognitive changes
  - Impulsive, agitated, aggressive, anxious, labile, poor self awareness, impaired memory, slow speed of processing, etc.
- Communication barriers
Agitation

- Expected phase of recovery, reframe it for ourselves and for family
- Unpredictable duration, lasts few days to few weeks for most, isn’t typically chronic
- Great source of stress for all
- Aim to learn how to manage and to be non-judgmental
- Pharmacologic, environmental, behavioral approaches usually effective...but not always, sometimes just have to ride it out…
- Goal to keep patient/self safe
Principles

- Environment influences behavior for all of us.
- Goal is to reduce negative impact of environment on behavior.
- Goal to help patient with TBI respond positively to environment.
- Environment to adapt to the person, not the other way around.
- Learning occurs through interaction with environment.
- Learning more effective when environment simple, predictable, consistent.
Environmental Triggers

- Overstimulation
- Understimulation
- Tubes, IV’s, C–Collars, etc.
- Phones (room and cell)
- Noise/light
- Bed
- Temperature
- Staff behavior
- Family behavior
Interventions: Environment

- Room selection
- Secured unit
- Lock out bed controls
- Therapy sessions in quiet room
- Abdominal binder to prevent pulling at G-tube
- Discontinue physical sources of irritation as possible (IV’s, catheters, collars, etc.)
- Monitor room temperature
Interventions: Environment

• Build structure, routine, repetition, consistency into day
• Do not over-stimulate (educate visitors)
• Keep lights low, minimize noise, close door
• Remove potential weapons, know how to position and protect self
• Minimize visitors (use Caring Bridge & Care Pages to communicate) and number of people patient in contact with
Physical Triggers

- Pain
- Infection
- Bowel and bladder
- Medications
- Sleep/fatigue issues
- Alcohol/drug withdrawal
- Seizures
- Dehydration/hunger
Interventions: Physical

• Assess for pain, schedule for pain management
• Review other medications, purpose, schedule
• Assess for signs of infection and treat
• Place on bowel and bladder training
  – Timed void q XX hours
  – Monitor for UTI
  – Bowel management
• Monitor intake/output, nutrition, hunger, thirst
Interventions: Physical

• Sleep-wake cycle
  – Medications
  – Environment (temperature, light, bedding)
  – Bedtime ritual, sleep schedule
  – Teach relaxation techniques as able
  – Allow ample time to wake up/get going
  – Fatigue management strategies

• Understand alcohol/drug/nicotine history, monitor for & treat withdrawal symptoms

• Monitor for seizure activity
Interventions: Confusion

• We shouldn’t be surprised…
• Plan for impaired judgment and anticipate safety needs
• Expect limited carry over
• Don’t expect attention span of more than a few minutes
• Read plan of care, nurse to nurse communication, & prior shift notes at beginning of shift
Interventions: Confusion

• Orientation by all team members
• Role model for family as to how to orient in less obvious ways
• Personal pictures/items may provide comfort
• Clock, calendar, white board
• Know the patient (“Get to Know Me” poster, other means)
### Examples

#### Care Plan for:

<table>
<thead>
<tr>
<th>Nursing/Medical</th>
<th>Precautions</th>
<th>Respiratory: O2</th>
<th>Treatments</th>
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<th>Communication</th>
<th>Seating Needs/Sitting Schedule</th>
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<th>Transfers</th>
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<th>Physical Therapy</th>
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#### Graphic Organizer

- **Just the Facts**
  - Name: 
  - Age: 
  - History:

- **A Few of My Favorite Things**
  - Subject: 
  - Food: 
  - Sport: 
  - Song: 
  - Movie: 

- **Awesome Activity**
  - One thing I love to do: 

- **My Hero**
  - Occupation: 
  - Accomplishments: 

- **Did You Know?**
  - Something I find interesting: 

- **My Mini-Autobiography**
  - About me:
Examples

“Get to know me during my time at Mayo Clinic”

– Name
– I like to be called…
– Favorites (movie, TV show, book, music, sport, food, pet)
– Activities, hobbies
– Achievements
– Things that stress me out…
– Things that cheer me up…
– Other things I’d like you to know…
– At home I use (glasses, hearing aid, dentures, other)
Interventions: Confusion

- Reassure patient he/she is safe
- Keep abrupt changes to minimum
- Get patient’s attention and do one thing at a time
- Always state who you are, what you intend to do, and why
- Allow time for processing, patient usually thinking in sloooooowwww motion
Interventions: Confusion

• Avoid arguing or over-explaining, usually nonproductive, redirection much more powerful
• Interrupt perseveration (verbal → motor, motor → verbal)
• Keep directions/questions short and simple ("can you please turn towards me now?" vs. "look at me")
• Repeat requests, clarify patient understanding
Interventions: Confusion

• Be aware of tone of voice
• Model calm behavior for patient/family
• Consistency of staff (but also take breaks)
• Allow as much movement as is safe
• Avoid teasing/joking, not usually well understood
• OK to be angry but limits for swearing, hitting, sexually inappropriate behavior
Interventions: Cognition

• OT, SLP, and Neuropsychology
• Daily schedule, predictability
• Repetition
• Visual and verbal approaches
• Allow time for processing
• Memory note book
• “Get to Know Me” and family for familiar topics, accurate information
Interventions: Behavior

- Consistency, structure, communication and well trained/supported staff are key
- Use of staff for 1:1 care ("coach" vs. "baby sitter")
- Behavior alert, colored armbands, wander systems, patient pictures, etc.
- Behavior rounds
- Behavior plan which emphasizes positive
- Simplicity usually = consistency
- Crisis plan (prevent vs. security, restraints, psychiatry/psychology consult)
- Medications prn vs. scheduled
Interventions: Emotion

- Monitor mood, document
- Medication as needed
- Engage patient in daily activities
- Allow control/choice as soon as possible
- Pet, music, art therapy…work with RT and with patient’s interests
- Family and friends important
- Acknowledge progress towards short and long term goals
Interventions: Communication

- Speech therapy assist regarding ability to communicate, strategies
- Communication and picture boards
- Call light that best suits patient
- Regimented call light training
- Restate and clarify
- Speak slowly clearly, allow time to process and respond
- Limit distractions
Interventions: Medications

- Medication selection is largely trial and error
- We may attribute improvement to medications vs. recovery or response to our interventions
- Not all adverse medication effects on cognition and behavior are known
- No consensus about pharmacological approach, consensus about multi-faceted approach
- MD experience, choice
Staff Roles: Team Communication

- Behavior management, patient safety best managed by a team
- Teams need to talk…communication vital, a skill we can all improve upon
- Need interdisciplinary consensus on problem, causative factors, plan of attack
- Communicate amongst ourselves, minimize using family for “report”
- Communicate verbally, and in writing
Staff Roles: Documentation

- Direct patient care provided
- Each specific episode of unsafe activity
  - Impulsive act or behavior in detail
  - How you intervened
  - Effectiveness of intervention(s)
  - Triggers
  - Patterns
  - Medications
- Agitated Behavior Scale (ABS)
- Richmond Agitation and Sedation Scale (RASS)
Staff Roles: Documentation

**NO:**
- Patient did not use call light
- Patient was impulsive
- Patient was agitated

**YES:**
- What activity did patient do that the call light was not used for?
- What was the impulsive act?
- What was the agitated behavior?

*Document your intervention and the patient’s response*
<table>
<thead>
<tr>
<th>TIME</th>
<th>NAME AND DISCIPLINE</th>
<th>ANTECEDENT (Situation Preceding Behavior)</th>
<th>BEHAVIOR</th>
<th>CONSEQUENCE (Intervention)</th>
<th>OVERALL ASSESSMENT</th>
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### Examples

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<thead>
<tr>
<th>Anx/Coping-Safety</th>
<th>1-Apr2009 15:49</th>
<th>31-Mar2009 14:49</th>
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<td><strong>Summary Note</strong></td>
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![Add/Update with Note](image)
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**Patient Coping**

**Result:** Restless
**Date/Time:** 31-Mar-2009 14:49

Patient rolling around in bed from side to side.

**Safety Interventions**

**Result:** Other
**Date/Time:** 1-Apr-2009 15:49

PCA reinforced call light use during shift. Patient tried to get out of bed on own to go to bathroom, did not use call light. PCA reinforced call light again and helped patient to bathroom.
Examples

Anxiety/Coping-Safety

Summary Note
- Anxiety/Cope Assess
- Family Visiting
- Patient Coping
- Family Coping
- Coping Techniques
- Inf-Ped Anx/Coping
- Peds Comfort Item
- Family/Staff Contact
- Family/Infant Contact

Safety
- Safety Assessment
- Side Rails
- Bed Exit
- Individual Assignment
- Safety Interventions
- Safety Interven Loc
- Safety Other:

Patient threw picture frame from bedside table on floor. PCA removed broken frame to prevent injury and tried to calm patient by talking in a quiet voice. PCA called for help from other staff. Two staff members walked with patient around the unit until she was calm.
Examples

Patient Data View: CLINICAL NOTES/FLOWSHEET NOTES

Service Description | Date/Time    | Status | Subtype | Provider          | Service Group | Dept  | Fac
-------------------|--------------|--------|---------|-------------------|---------------|-------|------
Nurse Hosp Notes/D | 20Apr09 16:47| Final  | FLOW    | GORDON, MARY RN   | SMH           |       |      
Sleep Medicine Subse | 20Apr09 15:22| Prelim| SV.     | NOBLE, ELLEN      | SLEEP MCR     |       |      
Hematology Subsequent... | 20Apr09 14:39| Prelim| SV.     | NOBLE, ELLEN      | HEM MCR       |       |      

Nurse Hosp Notes/D: 20Apr09 16:47 Recorded: 20Apr09 16:49

Patient was restless during the evening shift today, attempting to transfer self from bed at times. Direct caregiver needed to intervene 5 times for patient safety. Patient becomes more restless when he needs to use the bathroom for voiding but does not use the call light to ask for assistance and is unsafe to ambulate independently. Continue individual assignment and reinforcement of call light use.
Staff Roles: Documentation

- An expectation of both RN and PCA roles
- “If it’s not documented, it did not happen”
- Team needs detailed information to create and adapt plans and interventions
- Helps determine readiness for weaning from 1:1 care and other safety interventions in preparation for discharge
Staff Roles: Weaning

- Brochure on 1:1 care
- Staff and family fear, non-specific documentation, inconsistent communication, no standardized protocol can impede process
- Base on documented observations
- Several shifts in a row where patient demonstrates safe behavior
- Start weaning on whichever shift assessed to be of least risk
- Able to communicate and/or use call light?
- When weaning use other safety tools (bed alarm, chair alarm, etc.)
- Ensure family and all staff aware of weaning
Staff Roles: Train/Support 1:1 Staff

- Mayo focus groups revealed
  - Thrown into 1:1 care without much training
  - No resources to keep patient busy
  - No one asks what they think, or reads their notes
  - Don’t understand basic neuroanatomy, stages of recovery, reasons for behavior
  - Aren’t offered chance to watch therapists/nurses interact with patient, missed chance to learn
  - Scary, frustrating, boring
  - Intimidated by families, their needs, their questions
  - Burn out, turnover, many are RN students
  - No choice in assignments, can’t say no
  - Feel abandoned by RNs and others at times
  - Just get patient settled down, then someone comes in
Staff Roles: Train/Support 1:1 Staff

- Developed a standardized training program
- PCA’s/Sitters as “Coaches” vs. “Baby Sitters”
- Therapeutic and engaged, not passive
- Orient/train well
- Don’t forget about continued education
- Support watch/attend therapy on occasion
- Staff safety during 1:1 care (card, cell phone)
- Make the rest of the team accessible
- Read notes, value role on team
- OSU program
“Activities for an Active Brain” (RT...help!)
- “Busy boxes”
- Cards, games, including electronic (Wii)
- Computer
- Arts, crafts, fabric, felt, yarn, sanding project
- Beach balls
- Bubbles
- Music
- Money
- Stories, magazines, simple books
- Collage, pictures
- Etc.

- Be creative
- Send family to dollar store
Staff Roles: Approach & Attitude

• Important that families trust care givers and feel we know brain injury and how to deal with altered thinking and behavior
• Take pride, ownership
• Not everyone is gifted, cool, flexible enough to work with TBI patients…
Blessed are the flexible for they shall not be bent out of shape…
“The Right Stuff”

- Likes a challenge
- Light-hearted
- Sees opportunities
- Balanced
- Creative
- Likes surprises
- Flexible
- Risk-taker

- Aims for the ideal
- Easy going
- Laughs at themselves
- Seeks stimulation
- Conscientious
- Compassionate
- Goes with the flow
- Can laugh with others
Staff Roles: Family

- Be mindful of the enormous stress of this stage of recovery, affects everything, don’t take personally
- What’s “normal” – lots of reassurance
- Model/teach techniques (go to therapy)
- Repetition, repetition, repetition.....
- Allow families to stay or go, sleep or not, yell or hold it in, cry or not, they are doing the best they can, we are not here to judge
- Progress is progress and still worth celebrating
Staff Roles: Family

- Ask yourself—what if that was my loved one
- Remember many TBI patients can and do get better...keep eye on the horizon
- Know when you are at your limit and can’t provide the empathy/compassion needed that shift or day, families sense burn out and lack of patience
Rehabilitation Team
Reliable Assessment of Need for Constant Visual Observation (CVO) in Adults with TBI

TBI Model Systems Leadership Forum
Multi-site Research Study
2010-2011
Investigators

- **Mayo Clinic**
  - Anne Moessner, RN
  - Mary Gordon, RN
  - Leann Scroggins, RN
  - Allen Brown, MD

- **Rehabilitation Hospital of Indiana**
  - James Malec, PhD
  - Mark Williams, RN

- **Mount Sinai Rehabilitation Center**
  - Audrey Schmerzler, RN
  - Jason VandeVen, OT

- **Ohio State University**
  - Lynne Genter, RN
  - Tracey Shoemaker, RN

- **Moss Rehab**
  - Mary Ferraro, PhD, OT
  - Rachelle Rigous, RN
  - Lisa Pinder, RN

- **Baylor Institute for Rehabilitation**
  - Julia Marton, OT

- **TIRR Memorial Hermann**
  - DeAnn Roberts, RN

- **University of Pittsburgh Medical Center**
  - Scott Beveridge, RN
Current TBI Model Systems

- Currently Funded
- Follow-up Center
- Previously Funded
- Currently Funded and participating in study
Significance

- Maintaining safety of TBI patients of paramount interest to TBIMS Leadership Forum members
- No identifiable best practice for documentation of the need for CVO or less restrictive interventions
- No consistent means for identifying which safety interventions (1:1, frequent checks, specialized beds, alarms, wander guard systems) most suitable
- No standardized weaning protocols
Significance

• Frequent use of ancillary personnel for shifts, days, weeks = financial & staffing burden
• Development of tool to ID need for CVO will promote development of weaning protocols, more efficient use of resources, save cost, help maximize patient safety
• Initiative consistent with national health care priorities to improve patient safety and decrease variability through standardized protocols
Develop, validate and establish reliability of an assessment tool to use as an indicator of the need for Constant Visual Observation (CVO) for adults with TBI.
Hypotheses

1. CVO Needs Assessment (CVONA) predicts levels of risk for Constant Visual Observation.

2. CVONA correlates significantly with the Supervision Rating Scale

3. If hypotheses 1 and 2 confirmed, validity of CVONA, as demonstrated by these correlations, will be consistent across collaborative centers.
Preliminary Research

• OSU’s Agitated Behavior Scale (ABS) used by various centers to monitor/track agitation
• In 2007, UPMC staff created tool based on ABS
• UPMC tool
  ▪ incorporated additional safety items
  ▪ enhanced team communication about safety
  ▪ showed promise in identifying patients who need CVO, were ready to be weaned, or were OK with other safety measures (frequent √’s, chair and bed alarms, etc.)
Preliminary Research

- Survey on current issues/practices
- Original 14 items from the ABS preserved; additional 13 items added by expert consensus to arrive at proposed CVONA
  - impaired balance
  - incontinence
  - poor short term memory
  - inability to reliably use a call light or otherwise express needs
  - lack of self awareness of deficits
  - previous falls
Participants

- **Subjects** = 20 consecutive patients from each of the 8 centers for a total of 160
- **Staff** = 6-8 nurse raters and 6-8 investigator/therapist independent raters per center
Inclusion and Exclusion Criteria

**Inclusion Criteria**
- Moderate-severe TBI
- Admission to rehabilitation unit at participating center (does not have to meet inclusion criteria for TBIMS National Data Base)
- Age 18 years+

**Exclusion Criteria**
- Minimally conscious state
- Under continuous or heavy sedation
- Prisoners
• Trained nurse raters assign **Level of Risk & Supervision Rating Scale** scores
  – Upon admission
  – Within 2-3 days
  – Within 5-6 days
  – Within 8-9 days

• Independent raters (therapists, study investigators) administer **CVONA** for same subjects
  – Upon admission
  – Within 2-3 days
  – Within 5-6 days
  – Within 8-9 days
Data management/analysis

• Core demographic, injury, pre-morbid history variables will also be collected
• Data collection at local sites
• Central electronic data base at Mayo Clinic
• Rasch analysis per Dr. James Malec
Progress/Timeline

• Phase I
  – develop and validate CVONA

• Phase II
  – use revised CVONA on acute medical & inpatient rehabilitation units
  – expansion of use at other TBI Model Systems, in other age groups, with other types of acquired brain injury diagnoses

• Publish, roll out nationally (COMBI, TBIMS, Knowledge Translation Center)
Parting Thoughts

• Agitation and confusion usually temporary
• Bring your patients back to talk to staff to reinforce
• Were we injured we would behave similarly
• Result of organic injury to the brain, not patient trying to be difficult
• Understanding TBI/recovery patterns leads to better understanding, more patience
• Team work, empathy, communication, documentation, creativity, family involvement = multi-pronged approach
• Our responsibility to provide safety net for patients and ourselves
Resources

- Brain Injury Association of America (biausa.org)
- TBI National Data and Statistical Center (tbindsc.org)
- Mayo Clinic TBI Model System (mayo.edu/tbims)
- Center for Disease Control (cdc.gov/ncipc/tbi/TBI)
- Caring Bridge (caringbridge.org)
- National Center for Dissemination of Disability Research (ncddr.org/)
- National Institute of Health (health.nih.gov)
- University of Alabama TBI Model System (uab.edu/tbi)
- Brain Line (brainline.org)
Questions?