Implementing a Humpty Dumpty Pediatric Falls Assessment™ in Pediatric Patients

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Miami Children’s Hospital

• Largest free-standing 268 beds pediatric teaching hospital in the SE U.S.; Only licensed specialty hospital in South Florida exclusively for children.

• One of first Five ANCC free-standing US children’s hospitals; Florida 1st free standing children’s.

• More than 40 pediatric specialties & subspecialties with a 650+ medical and 700+ nursing staff; Treat more than 185,000 patients/year; 2nd busiest Miami Dade County ED (87,000 visits/yr).

• 1st US hospital to host Radio Lollipop®, radio station providing entertainment; 1st Florida hospital Big Apple Circus ™ Clown Care program.

• 1st Mobile Preventive Care program.
JCAHO National Patient Safety (NPSG)
Goal # 9 Falls Prevention!

- Reduce the risk of patient harm resulting from falls.
- Assess and periodically reassess each patient’s risk for falling, including the potential risk associated with the patient’s medication regimen, and take action to address any identified risks (JC Resources).

National Safe Kids Campaign

- Falls - An unintended event resulting in a person coming to rest on the ground/floor or other lower level (witnessed) or reported to have landed on the floor (unwitnessed) not due to any intentional movement or extrinsic force such as a stroke, fainting, seizure. (FHA)
  NCPS Fall Prevention and Management [www.patientsafety.gov/FallPrev](http://www.patientsafety.gov/FallPrev)
- According to the National Safe Kids Campaign falls are the leading cause of unintentional injury for children
  - Half of these injuries occurred in children younger than five years old.
  - Children under 10 have the greatest risk of fall-related death and injury.
  - More than 2.3 million children < 14 were treated in the ED in 2002
  - Over half of all non-fatall injuries are associated to falls.
  - Curiosity and development of motor skills have been related to falls.
Children At-High Risk For Falls

- Preschoolers
- Children under ten are twice at risk for falls compared with the total population
- Children with disabilities and minimal mobility may be at greater risk
- Children in wheelchairs, regardless of cognitive ability are at risk from wheelchair tips and falls

Developing a Pediatric Falls Scale

- Reviewed falls data on most common elements
  - Age- 19-24 months old
  - Gender- (Male 2:1 ratio)
  - Diagnosis Respiratory/Pulmonary/ENT #1, Neurological #2
  - Not within 24 hours post-op
  - Had not received any medications that affect LOC
  - Had not been NPO for more than 24 hours
  - Fell on a Monday, followed by Thursday
  - Highest in October
  - Related to equipment
    - Tripped over piece of equipment or furniture
    - Fell out of crib
    - Fell in liquid
Humpty Dumpty Scale Parameters

- Age
- Gender
- Diagnosis
- Cognitive impairments
- Environmental Factors
- Response to Surgery / Sedation / Anesthesia
- Medication usage
- Falls Assessment Tool score- At risk for falls if above 12
  - Maximum Score 23
  - Minimum Score 7

Review of Literature

Review of Literature


Falls Assessment Instruments

• Adult Tools
  ▪ Morse Fall Scale (2002)
  ▪ Hendrich (2003)

• Pediatric Tools
  ▪ Elaine Graf (Graf-PIF Scale Children’s Memorial Medical Center)
    - LOS: for each additional 5 days- 2Xs the risk for falls
    - Children without an IV- 4Xs the risk
    - PT/OT ordered- 3Xs the risk
    - Seizure Medication- 5Xs the risk
    - Orthopedic diagnosis- 4Xs the risk
  ▪ MCH *The Humpty Dumpty Falls Assessment Tool™*
    - Based on a retrospective review of pediatric falls
    - Most common elements included in grading criteria of the tool
Falls Assessment Tool
(The Humpty Dumpty Scale™)

- Assessing/screening for risk factors for falls in children
- Using identifiers to implement falls prevention protocol
- Implementing protocol according to patient needs
- Reassessing patient and modifying as appropriate
- Reporting incidence of falls
- Measuring/monitoring rates
- Enhancing falls prevention program

Patient Falls Safety Protocol

- Low Risk Standard (Score 7-11)
  - Assess elimination needs, assist as needed
  - Call light is within reach, educate patient/family on its functionality
  - Environment clear of unused equipment, furniture’s in place, clear of hazards
  - Orientation to room
  - Bed in low position, brakes on
  - Side rails X2 or 4 up, assess large gaps, such that a patient could get extremity or other body part entrapped, use additional safety precautions.
Patient Falls Safety Protocol

- **Low Risk Standard (Score 7-11)**
  - Use of non-skid footwear for ambulating patients
  - Use of appropriate size clothing to prevent risk of tripping
  - Assess for adequate lighting, leave nightlights on
  - Patient and family education available to parents and patients
  - Document fall prevention teaching and include in the plan of care

- **High Risk Standard (Score 12 or >)**
  - Evaluate medication administration times
  - Remove all unused equipment out of room
  - Protective barriers to close off spaces, gaps in the bed
  - Keep door open at all times unless specified isolation precaution are in use
  - Keep bed in the lowest position, unless patient is directly attended
  - Educate Patient/Family regarding falls prevention
  - Document in the nursing narrative teaching and plan of care
Preventing falls, enhancing safety.

High Risk Standard (Score 12 or more)

- Identify with “Humpty Dumpty Sticker/Sign” on patients, in beds & charts
- Check patient minimum every hour
- Accompany patient with ambulation
- Move patient closer to nurses’ station
- Assess need for 1:1 supervision

Purpose/Methodology

- **Purpose**-
  - To validate Humpty Dumpty Scale™

- **Methodology**
  - Research design was a comparative study comparing actual 2005 falls data to a control group matching for age, gender and diagnosis

- **Research Questions**
  - What parameters should be included in a pediatric falls assessment tool?
  - What score indicates at-risk for falls?
## Methodology

<table>
<thead>
<tr>
<th>Unit Variable</th>
<th>Actual Falls %</th>
<th>Comparative Falls %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurological</td>
<td>22 (31%)</td>
<td>31 (44%)</td>
</tr>
<tr>
<td>Oncology</td>
<td>10 (14%)</td>
<td>6 (8.5%)</td>
</tr>
<tr>
<td>Special Medical</td>
<td>12 (17%)</td>
<td>19 (27%)</td>
</tr>
<tr>
<td>Respiratory</td>
<td>9 (13%)</td>
<td>7 (10%)</td>
</tr>
<tr>
<td>Surgical</td>
<td>3 (4%)</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>CICU</td>
<td>3 (4%)</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>CV Unit</td>
<td>3 (4%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>PICU</td>
<td>2 (3%)</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>Playroom (Units)</td>
<td>7 (10%)</td>
<td>7 (10%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>71 (100%)</strong></td>
<td><strong>71 (100%)</strong></td>
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</tbody>
</table>

## Demographics

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Actual Falls %</th>
<th>Comparative Falls %</th>
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<tbody>
<tr>
<td>Neurological</td>
<td>34 (48%)</td>
<td>33 (47%)</td>
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<tr>
<td>Gastrointestinal</td>
<td>11 (16%)</td>
<td>10 (14%)</td>
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<tr>
<td>Respiratory</td>
<td>9 (13%)</td>
<td>9 (12%)</td>
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<tr>
<td>Renal</td>
<td>5 (7.0%)</td>
<td>6 (8.5%)</td>
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<tr>
<td>Cardiac</td>
<td>3 (4.2%)</td>
<td>3 (4.2%)</td>
</tr>
<tr>
<td>Oncological</td>
<td>3 (4.2%)</td>
<td>3 (4.2%)</td>
</tr>
<tr>
<td>Surgical</td>
<td>1 (1.4%)</td>
<td>1 (1.4%)</td>
</tr>
<tr>
<td>Orthopedic</td>
<td>1 (1.4%)</td>
<td>1 (1.4%)</td>
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<tr>
<td>Other</td>
<td>4 (5.6%)</td>
<td>4 (5.6%)</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>71 (100.0%)</strong></td>
<td><strong>71 (100.0%)</strong></td>
</tr>
</tbody>
</table>
Demographics

- Age
  - Actual Falls % Comparative Falls %
  - 2 Years or < 31 (44%) 31 (44%)
  - 3 to 6 Years 11 (16%) 11 (16%)
  - 7 to 12 Years 8 (11%) 9 (13%)
  - 13 Years or Older 21 (30%) 20 (28%)
  - Total 71 (100%) 71 (100%)

- Gender
  - Actual Falls % Comparative Falls %
  - Female 35 (49.3%) 35 (49.3%)
  - Male 36 (50.7%) 36 (50.7%)
  - Total 71 (100.0) 71 (100.0)

Humpty Dumpty Falls Scale

<table>
<thead>
<tr>
<th>Source</th>
<th>Falls</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
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<tr>
<td></td>
<td>falls</td>
<td>Linear</td>
<td>1</td>
<td>2.492</td>
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<td></td>
<td>Error(falls)</td>
<td>Linear</td>
<td>64</td>
<td>4.539</td>
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Humpty Dumpty Falls Scale Comparison

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<th>Source</th>
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<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Falls</td>
<td>Linear</td>
<td>1</td>
<td>10.314</td>
<td>5.079</td>
<td>.018</td>
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<tr>
<td></td>
<td>Error(falls)</td>
<td>Linear</td>
<td>69</td>
<td>3.285</td>
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Data Analysis

Mean Scores Actual & Comparison Groups Humpty Dumpty Falls Scale™

- Actual: 13.21
- Comparison: 12.93

Humpty Dumpty Patient Falls Program™

- Humpty Dumpty Falls Prevention Program™ trademarked by MCH

- Interest from:
  - National Patient Safety Foundation for journal publication, webinar
  - JCAHO
  - Child Health Corporation of America
  - National Association of Children’s Hospitals and Related Institutions
  - American Pediatric Surgical Nurses Association, Society of Pediatric Nursing
  - Other hospitals (over 100 hospitals have inquired with approx. 20 purchased)
  - NDNQI
  - Cerner Documentation Systems
  - AIG Insurance for MCH’s claim prevention

- Marketing materials for purchase and distribution
Outcomes

Patient Outcomes
- Increased knowledge about falls
- Reduced severity of fall related injuries by 28% reduction in falls since implementation (2005)

Program Outcomes
- Interdisciplinary approach to fall prevention and management
- Increased staff awareness of fall prevention and management support
- Reliability/validity of tool

Thank you!

For more information, contact Deborah Hill-Rodriguez, MSN, ARNP, CS, BC
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