



A Multi-Center Study: Psychometric Testing of a Pediatric Falls Prevention Program Inpatient Scale



**Nicklaus
Children's
Hospital**

MIAMI CHILDREN'S HEALTH SYSTEM



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History

- In the 1940s, Miami Tent #33 of Variety Clubs International was founded.
- To help children in need, Variety Clubs soon joined forces with a new hospital that was being built outside Coral Gables and in need of financial assistance.
- On March 20, 1950, just as the polio epidemic was encompassing the United States, Variety Children's Hospital was dedicated and opened to serve patients.
- It was soon deemed the southern treatment center for persons suffering from polio.
- Renamed Miami Children's Hospital in 1983, the hospital was internationally recognized for its outstanding medical care, research and innovation.



Hospital Renaming



On March 20, 2015, in honor and recognition of a \$60 million pledge from the Nicklaus Children's Health Care Foundation, Miami Children's Hospital and its eight outpatient centers assumed the Nicklaus name.



U.S. News & World Report Ranking



The hospital has eight subspecialty programs ranked among the best in the nation, according to *U.S. News & World Report's* 2016-17 "Best Children's Hospitals" rankings. No other hospital in South Florida has more ranked pediatric programs.



Nursing Accolades



First freestanding children's hospital in the southeastern U.S., and the fifth children's hospital in the nation to receive ANCC Magnet Recognition® – the nursing profession's highest honor from the American Nurses Credentialing Center – for dissemination of evidence-based practice innovation



Designated as an ANCC Magnet organization 3 times and on the journey to 4th designation.



The neonatal, pediatric and cardiac intensive care units as well as a respiratory specialty medical-surgical unit have each been designated *Gold* Beacon Awards for Excellence from the American Association of Critical-Care Nurses. First hospital in the nation to achieve 4 *Gold* Beacon Awards.



Nicklaus Children's was awarded the 2015 NDNQI® Award for outstanding nursing quality by Press Ganey Associates, Inc. The award recognizes the top-performing pediatric hospital that has achieved excellence in overall performance in nursing quality indicators.



Objectives



Discuss the benefits of structured pediatric hospital's fall prevention program to improve patient care outcomes.



Determine the validity of a pediatric fall prevention program inpatient scale.



Describe limitations of a multi-year, multi-facility nursing research study.

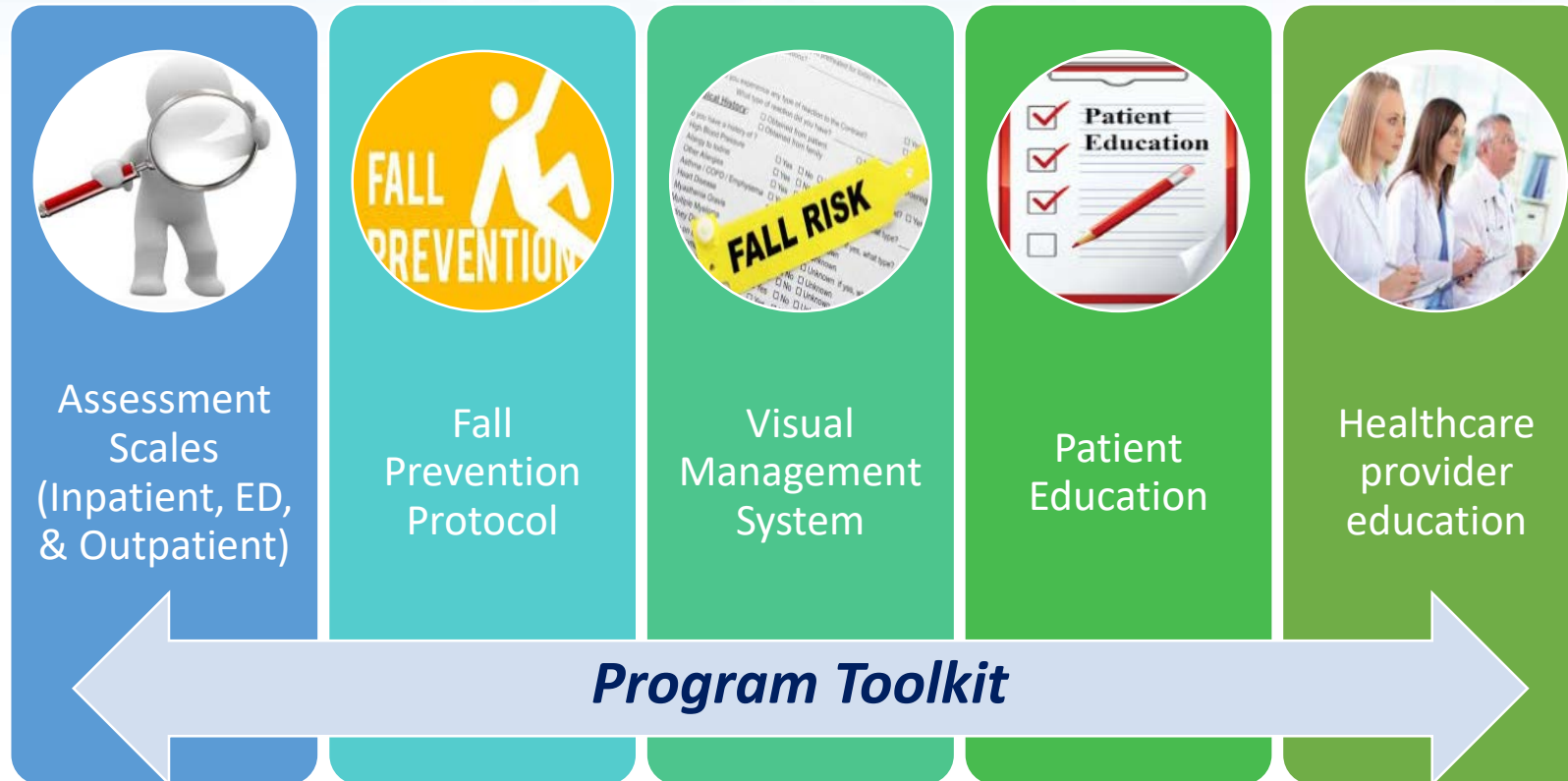


Purpose

The Pediatric Fall Prevention Program was studied over six years to examine the reliability, validity, specificity and sensitivity across multiple pediatric acute care settings around the world.



Pediatric Falls Prevention Program



Pediatric Falls Prevention Program

Global Impact

1,287 organizations
United States 1,083
International 204
(across 5 continents; 20 countries)

Operational
in all 50
states

All Branches of the
US Military

108 ANCC
Magnet®
recognized
hospitals

45 free
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Translated
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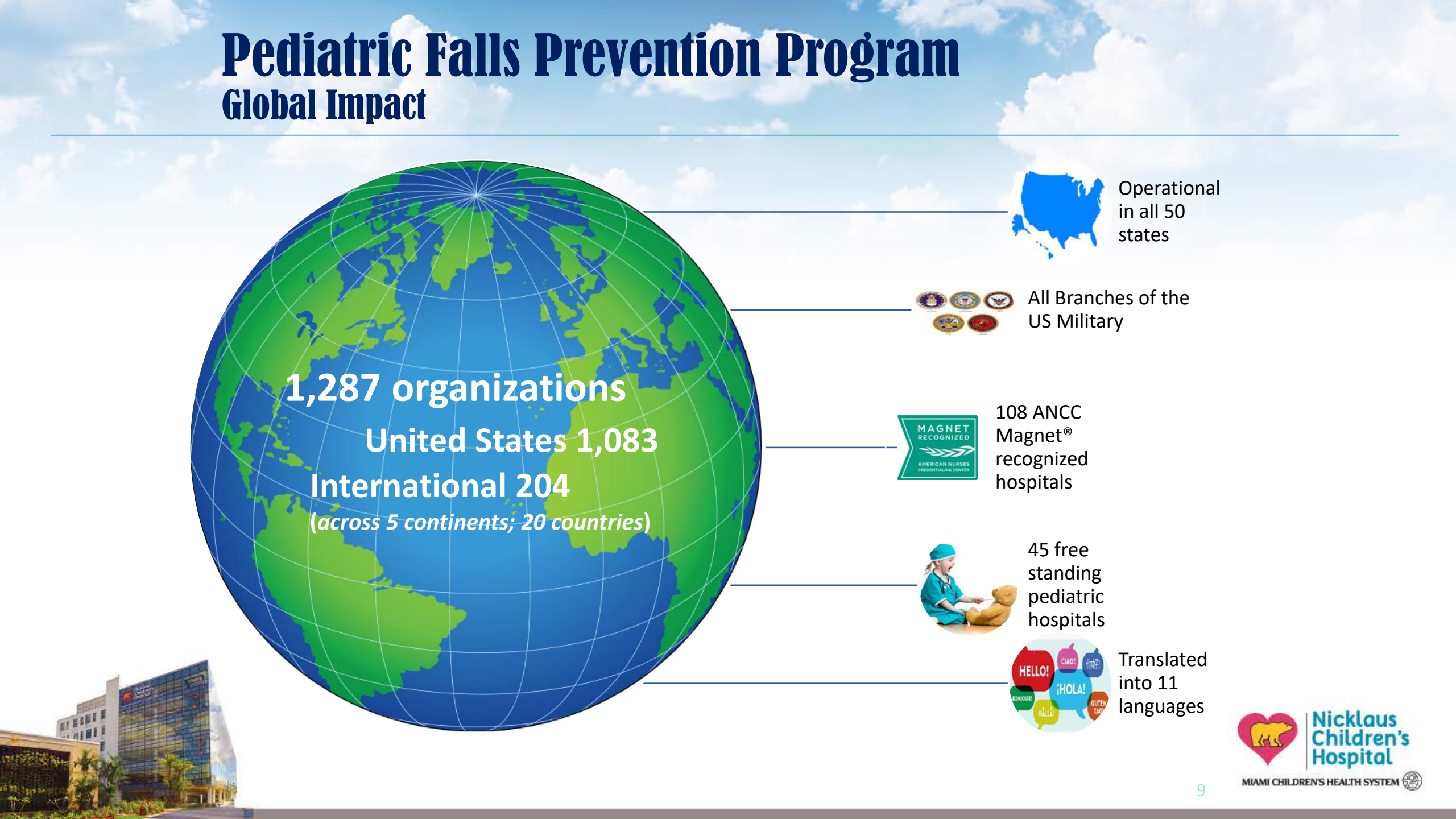
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Pediatric Falls Prevention Program

Global Impact

The infographic features a central globe with white grid lines. To the left of the globe is a photograph of the Nicklaus Children's Hospital building. To the right of the globe are five callout boxes, each connected to the globe by a thin blue line. These boxes provide details about the program's reach and affiliations.

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- Operational in all 50 states**: Accompanied by a blue silhouette map of the United States.
- All Branches of the US Military**: Accompanied by five circular military branch emblems.
- 108 ANCC Magnet® recognized hospitals**: Accompanied by the green Magnet Recognized logo from the American Nurses Credentialing Center.
- 45 free standing pediatric hospitals**: Accompanied by a photo of a young girl in a hospital gown sitting on a bed.
- Translated into 11 languages**: Accompanied by a graphic of colorful speech bubbles containing words like "HELLO!", "¡HOLA!", "CIAO!", "GUTEN TAG!", "SCHNITT!", and "BYE!".

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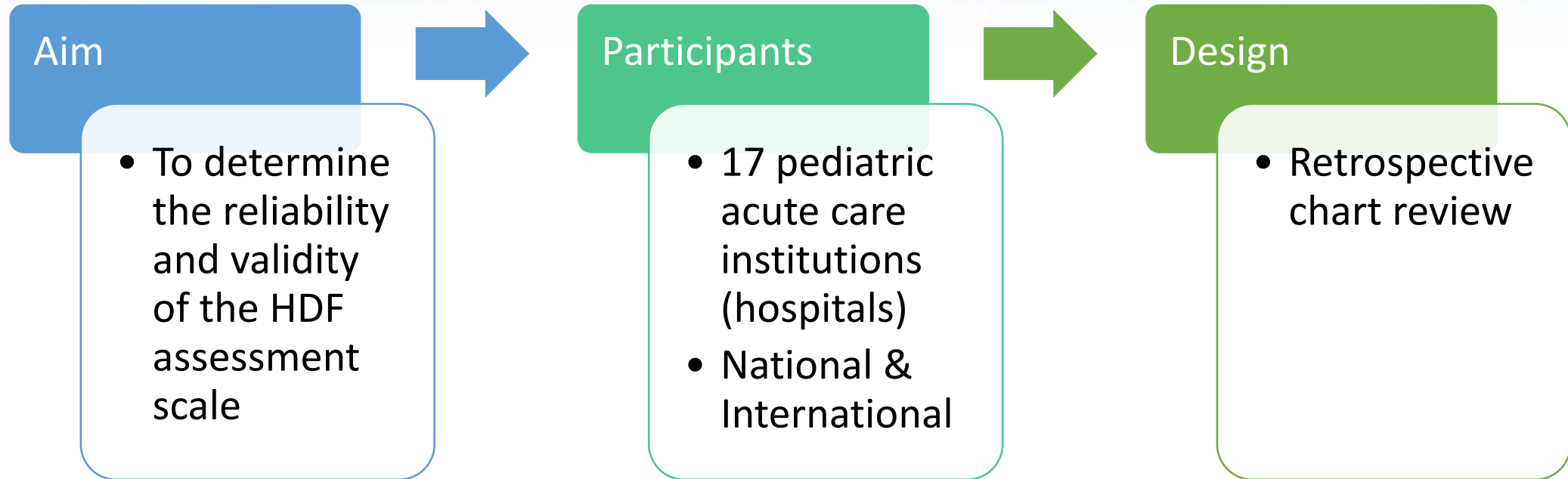
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6-Year International Multisite Research Study

Timeline-2010-2015



6-Year International Multisite Research Study

Methods Pediatric falls vs. non-falls



Hospitals followed & tracked the Humpty Dumpty Fall Inpatient Scale scores of all patients who actually fell and the scores of a control group (patients who did not fall)

Controls were selected from patients at each hospital on the same day of a recorded fall event but who did not experience a fall

De-identified data entered into a database

6-Year International Multisite Research Study

Data Analysis

Logistic regression was used to evaluate how each item on the Humpty Dumpty (HD) scale predicted a fall event

Cronbach's alpha was calculated to assess reliability of the HD scale

6-Year International Multisite Research Study

2 by 2 table of HD scale total scores and fall after the tool was purchased
(N=2076)

Total Score	Fall	
	Fall	No Fall
≥ 12	733	653
< 12	304	386

OR=1.43 (95%CI: 1.19-1.71)

P<0.001



6-Year International Multisite Research Study

Odds ratios and adjusted odds ratios from Logistic Regression for Fall after the tool was purchased (N=2076)

	Simple Logistic Regression		Multiple Logistic Regression	
	OR (95% CI)	p	OR (95% CI)	p
Age		0.001		0.002
Less than 3 years old	0.82(0.65, 1.02)		0.62 (0.44, 0.88)	
3 to less than 7 years old	1.23(0.96, 1.58)		1.09 (0.82, 1.44)	
7 to less than 13 years old	0.76(0.59, 0.97)		0.76 (0.58, 0.99)	
13 years old and above	Ref		Ref	
Gender Male vs. Female	1.21(1.02, 1.44)	0.031	1.20 (1.00, 1.45)	0.051
Diagnosis		<0.001		<0.001
Neurological Diagnosis	1.50(1.20, 1.88)		1.12 (0.87, 1.44)	
Alterations in Oxygenation	0.59(0.48, 0.74)		0.48 (0.38, 0.61)	
Psych/Behavioral Disorders	0.92(0.60, 1.42)		0.77 (0.48, 1.23)	
Other Diagnosis	Ref		Ref	
Cognitive Impairments		<0.001		<0.001
Not Aware of Limitations	1.10(0.90, 1.34)		1.10 (0.81, 1.50)	
Forgets Limitation	2.70(2.11, 3.44)		2.86 (2.15, 3.79)	
Oriented to Own Ability	Ref		Ref	

6-Year International Multisite Research Study

Odds ratios and adjusted odds ratios from Logistic Regression for Fall after the tool was purchased
(N=2076)

	Simple Logistic Regression		Multiple Logistic Regression	
	OR (95% CI)	p	OR (95% CI)	p
Environmental Factors		0.004		<0.001
History of Falls or Infant-Toddler Placed in Bed	1.69(0.95, 3.03)		2.29 (1.20, 4.37)	
Patient uses assistive device or Infant-Toddler in Crib or Furniture/Lighting	1.48(0.84, 2.59)		1.73 (0.94, 3.17)	
Patient Placed in Bed	1.12(0.65, 1.92)		1.00 (0.57, 1.76)	
Outpatient Area	Ref		Ref	
Response to Surgery/Sedation/Anesthesia		<0.001		<0.001
Within 24 hours	0.48(0.37, 0.61)		0.37 (0.28, 0.50)	
Within 48 hours	0.77(0.48, 1.25)		0.59 (0.35, 1.00)	
More than 48 hours/None	Ref		Ref	
Medication Usage		0.058		0.019
Multiple Usage of : Sedatives, Hypnotics, Barbiturates, Phenothiazine, Antidepressants, Laxatives/Diuretics, or Narcotic	1.29(1.01, 1.64)		1.50 (1.11, 2.02)	
One of the Meds Listed above	0.92(0.74, 1.14)		1.00 (0.78, 1.28)	
Other Medications/None	Ref		Ref	



6-Year International Multisite Research Study

Sensitivity and Specificity of HD scale for predicting Fall:

Data collected after date of tool was purchased

(N=2076)

Sensitivity (95% CI)

70.7% (67.9%, 73.5%)

Specificity (95% CI)

37.2% (34.2%, 40.1%)

6-Year International Multisite Research Study

Significance

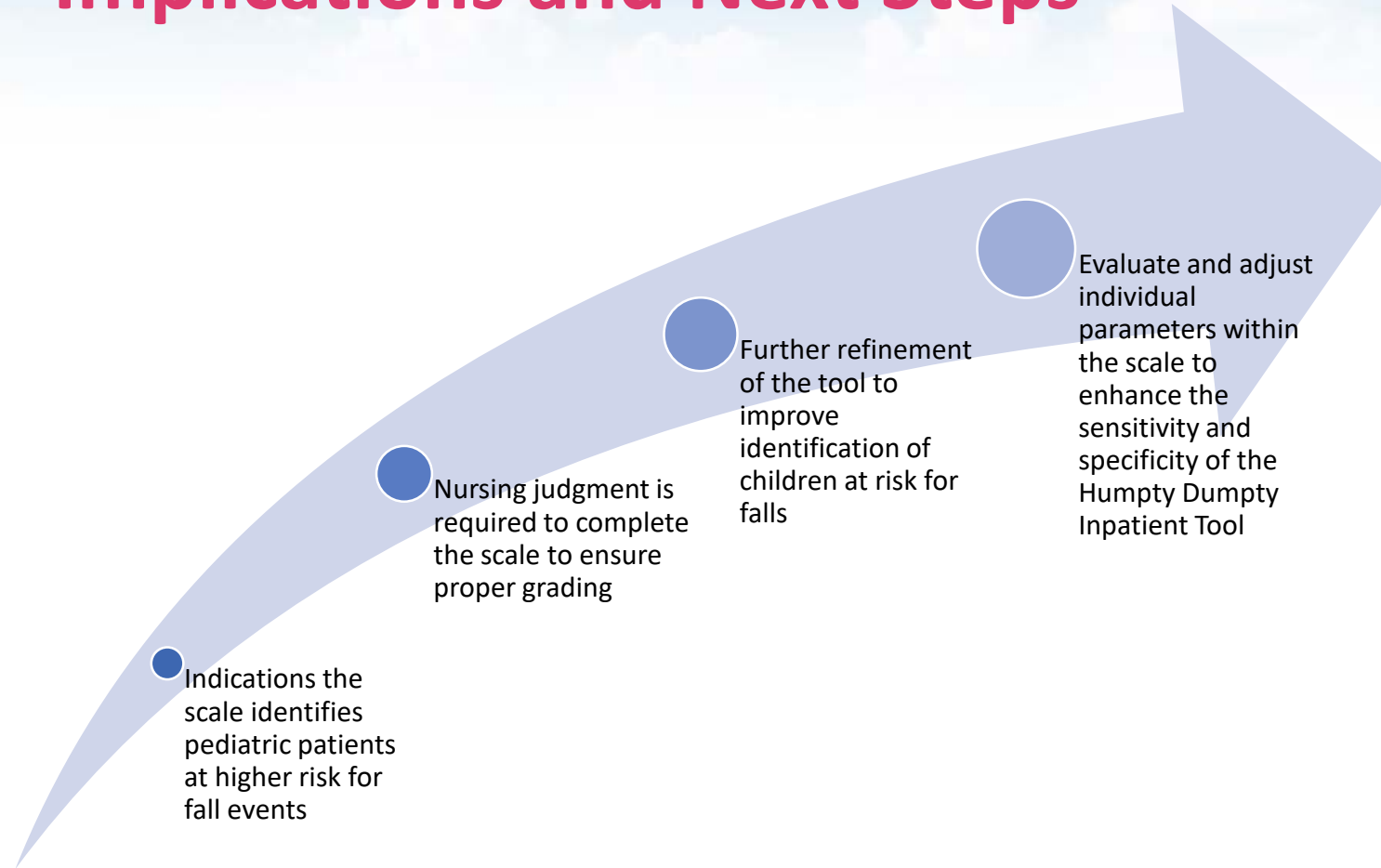
Statistically
significant reliable
tool identifying
children at risk

Scale parameters
are significantly
associated with a
fall event



6-Year International Multisite Research Study

Implications and Next Steps





Conclusions



Sharing knowledge and best practices is embedded in the Magnet® community.



With vision and commitment, efforts to achieve success and disseminate evidence-based practice can be met.



Advancing knowledge through research, innovation and professionalism.

References

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Thank You!