

Perceived Accuracy of a New Acuity Tool in a Pediatric Cardiac Progressive Care Unit (PCPCU)

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BACKGROUND

- Congenital heart disease (CHD) affects ~1% of live births, with >90% surviving to adulthood.
- Pediatric cardiac patients are increasingly complex, with accumulating comorbidities.
- Increasing patient acuity is associated with missed nursing care and threats to patient safety.
- A standardized acuity tool tailored to PCPCU patients is needed to support equitable assignments and safe care.

PROBLEM

- Pediatric cardiac patients require increasing nursing time, attention, and specialized care.
- Nursing workload has increased without corresponding increases in resources.
- Nurse-to-patient ratios do not reflect current patient complexity.
- Current acuity measurement methods inadequately capture true nursing workload in this population.

PURPOSE AND CLINICAL QUESTION

Purpose:

- To develop a PCPCU-specific patient acuity tool and evaluate frontline nurses' perceptions of its accuracy and usability.

Clinical Question:

- What is the self-reported perceived accuracy of the newly developed acuity tool among nurses working in the PCPCU?

METHODS

Descriptive study with convenience sampling.

Subjects: 28 eligible PCPCU nurses.

Setting: 12-bed PCPCU in a 300-bed Midwestern pediatric hospital

Data Collection:

- Acuity tool was trialed for 2 weeks by frontline nurses
- Anonymous surveys were completed rating perceived accuracy and providing qualitative feedback.
- Current nursing staff were asked to share feedback on the tool's accuracy and provide suggestions for improvement.

ACUITY TOOL

PT Sticker:

RN Name: _____ Date: _____ Shift: _____

PCU Acuity Tool				
Acuity Category	1 (each item checked = 1 pt)	2 (each item checked = 2pts)	3 (each item checked = 3pts)	4 (each item checked = 4pts)
Procedures	- Pulse ox - Oral care - Telemetry / CR monitor - Q8 vitals - Daily x-ray or EKG - Daily weight - Fracture prevention	- Nasal cannula - BIPAP / CPAP @ naps / night - Routine trach care ≤ 2 times / shift - NG/G/G tube - Diaper changes (< potty trained age) - PCA pump - Rectal tube - Isolation - Fall risk - Q4 vitals / neurovascular checks - Bowel cleanout (mobile) - Daily labs - Saline locked IV - Straight cath - Seizure precautions - Tube feeding (bolus/continuous) - Foley	- High-flow O₂ / vent - Continuous BIPAP - Trach care ≥ 3 times/shift - Frequent suctioning - Wound/skin care - Ostomy - Assist w/ ADLs - Vitals / neurovascular checks q2h - Continuous bladder irrigation - Chest tube - Peritoneal dialysis - Unfinished admit - Needs interpreter - CVL/PICC - Bowel cleanout (immobile) ≥ Q4 Labs - Glucometer with coverage - Drains	- Q2 turns - Incontinent (= potty trained age) - Hoyer lift required - Restraints - Sedation wean / MW/ATS - Total feed (bottle or spoon fed) - Active seizures (this admission) - Confused / restless / combative - Alone (requiring frequent intervention) - High fall risk - Fresh Post op - Spinal surgery patient - RN transporting PT off unit - Post code / RRT - House Watcher - New trach >2 TET spells per shift - Blue heart protocol - Heart failure - VAD
Education	Standard (general peds) Prechecked =1	1st dose medications - Homeward bound	- Discharge today - Discharge education - Homeward bound prep - Pre-/post-procedure	- New Chronic diagnosis (i.e. asthma, seizure, diabetes) - Inability to comprehend (person receiving education) - Multiple comorbidities
Psychosocial or therapeutic interventions	≤ 2 interventions / shift	3-5 interventions / shift	6-10 interventions / shift - Diagnosis of delirium - End of life - Lighthouse precautions / Sitter	> 10 interventions / shift
Medications (non-IV)	1-5	6-10 1-3 PRNs on MAR	11-15 4-6 PRNs on MAR	≥ 16 >6 PRNs on MAR - Time sensitive meds
IV drugs & other meds	1-2 IV meds	3-4 IV meds	5-8 IV meds 1-3 PRN IV/IM meds on MAR - TPN or continuous IV fluids - Heparin protocol	> 6 IV meds > 4 PRN IV/IM meds on MAR - Blood products - Continuous IV heart meds
Anxiety / Compliance - provide comments.	- Mild anxiety - Compliant	- Moderate anxiety - Moderate compliance	- High anxiety - Interventional compliance	- High anxiety / PRN anxiety meds - Non-compliant / combative
TOTAL Score				
TOTAL ACUITY SCORE:				
ACUITY CATEGORY:	1:5 = 1 to 15	1:4 = 16 to 30	1:3 = 31 to 45	1:2 = >45 or new admit

RESULTS - QUANTATIVE

Sample Demographics

Item	n (%)
Age Groups	
21-24	1 (10)
25-28	5 (50)
29-32	2 (20)
33-36	1 (10)
41-44	1 (10)
RN Experience Yrs	
0-2	1 (10)
3-5	6 (60)
6-8	2 (20)
9-11	0 (0)
12-14	0 (0)
15-17	1 (10)
Primacy Shift Assignment	
Dayshift	6 (60)
Nightshift	4 (40)
Current FTE Status	
Part-Time	1 (10)
Full-Time	9 (90)

Perceived Accuracy of Acuity Categories (n = 10)

Category	M (SD)
Procedures	3.4 (.70)
Patient/Family Education	3.7 (.48)
Psychosocial or Therapeutic Interventions	3.5 (.71)
Medications (non-intravenous)	3.8 (.42)
Intravenous medications	3.7 (.48)
Anxiety/Compliance	3.7 (.68)

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RESULTS- QUALITATIVE

Requests for reclassification:

- Certain tasks identified as higher workload (e.g., heart watcher, bowel cleanouts, Q4 labs)

Clarification of terminology:

- Need for clearer definitions and timeframes for consistent scoring

Identification of missing items:

- Developmental care needs, psychosocial stressors, device-related care

Overall positive validation:

- Nurses expressed strong satisfaction with structure and content
- Tool perceived as comprehensive and practical

DISCUSSION

- Nurses reported high perceived accuracy in capturing PCPCU care complexity.
- Strong alignment with high-risk, time-intensive nursing activities.
- Feedback identified actionable improvements to enhance clarity and reliability.
- Nurse-informed design supports usability, adoption, and patient safety culture.
- Findings support acuity-based assignments as a strategy to reduce missed care.

FUTURE RESEARCH

- Moving forward with a larger, more diverse sample of frontline nurses will be needed.
- Incorporate enhancements to the tool with objective metrics like patient outcomes and align with clinical documentation.