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# Care Delivery Review: An Evidence-Based Process to Inform Quality Care and Decision Making

- Ross Riggs, Manager Nursing Information Systems
- Robert Miller, Senior Business Analyst
- Wynne de Jong, Director of Nursing, TGH

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# A Fine Balance…

## What we want.

- Quality Patient Care
- Patient Safety
- Financial Efficiency
- Effective Workforce
  - How Many?
  - What Type?

## Who we are.

- 1,190 Beds
- 405k Patient Days
- 985k Ambulatory Visits
- 4 Hospitals
- 4000 Nurses

# Current Context

- Tension between cost and high quality
- Threat for fiscal pressures to drive decision-making instead of evidence
- Growing evidence that shows correlation between staffing and patient outcomes
- CNO three factor framework for determining appropriate category of nurse. Patient, Nurse, Environment

# Current Context

- Lack of published tested tools to operationalize patient needs and environmental supports/demand
- Traditional tools to measure nursing requirements based on time and volume of work “workload”

# Research

- Patient Outcomes and Patient Safety
  - Increase in positive patient outcomes seen in Care Models with Regulated Staff
  - Increase proportion of RN hours of care associated with lower rates of adverse outcomes
  - Failure to rescue rates negatively impacted by higher nurse patient ratios and number of nurses < 3 yrs. experience

# Care Delivery Review

- Based on CNO Three Factor Framework
  - Nurse
  - Environmental Complexities
  - Patient

# Patient Care Needs Assessment

- Guiding Principle
  - That the best source of data to guide the understanding of patient care needs exist in the staff and leaders at the point of care
- Patient Factors
  - Stability
  - Complexity
  - Predictability
  - Risk
  - Intensity

# UHN's Experience

- 2007 Pilot Assessment of Utility
- 2008 HHR Research Project
- 2009 UHN Internal Care Review
- 2010-2012 Ongoing Internal/External

# Tools & Process

- PCNA Questionnaire
  - Patient history, active co-morbidities and current issues/priorities for nursing care
  - Yes/no questions
  - 5 Likert-type dimensions scores
  - Consensus-based panel review

# Tools & Process

**Patient Care Needs Assessment Tool**

| | | |
|---|---|---|
| **Date:** _____ (YY/MM/DD)<br>**Collection Day** _____( 1 or 2)<br>**Specialty ID**_____<br>**(*see specialty definitions*)** | **Site** _____(TRI)<br>**Unit** _____(Name)<br>**Patient Unique ID** _____ (MRN)<br>**Gender** ☐ **Female** ☐ **Male**<br>**Age** _____ | **Reviewer Initials:** ☐☐ |

| | | | |
|---|---|---|---|
| 1. What issue(s) are important to this patient's care that currently need(s) to be addressed? | | | |
| 2. Vital Signs:<br>a. Have the patient's vital signs been within the following criteria[1] over the last 24 hour period?<br>- Respiratory Rate is between 8 and 30 breaths per minute.<br>- $O_2$ Saturations are greater than 90% on less than 50% $O_2$ or 6L/min.<br>- Systolic Blood Pressure is between 90 and 200 mmHg with no more than 40 mmHg decrease.<br>- Heart Rate is between 40 and 130 beats per minute | Yes ☐ | No ☐ | Comments: |
| b. Are the patient's vital signs within the expected range for this patient's condition? | Yes ☐ | No ☐ | Comments: |
| c. How often does the patient need to have his/her vital signs checked? | Q2H ☐ Q4H ☐ Q6H ☐ Q8H<br>OTHER: | | |
| 3. Level of consciousness:<br>a. Is the patient's current level of consciousness/alertness within expected range for her/his condition? | Yes ☐ | No ☐ | Comments: |
| b. Is the patient currently experiencing fluctuations in level of consciousness/alertness? | Yes ☐ | No ☐ | Comments: |
| 4. Does the patient require increased monitoring for development of complications? (You are worried about the health of this patient and are keeping a close eye on him/her. Falls, UTI, Aspiration Pneumonia) | Yes ☐ | No ☐ | Comments: |

# Tools & Process

| | | | |
|---|---|---|---|
| 5. Has the patient been experiencing acute confusion/agitation/anxiety/restlessness requiring ongoing assessment and treatment? Delirium, | Yes ☐ | No ☐ | Comments: |
| 6. Does the patient's condition require increased assessment and adjustment in the plan of care? (pain, fluctuating labs, fever, loss & grief, fluctuating mood, sliding scale, cognition change, pressure ulcer) | Yes ☐ | No ☐ | Comments: |
| 7. Does the patient require interventions/treatments that will have an immediate systemic effect, which may create an urgent or emergent situation? (new IV treatment, high alert drug treatment, sliding scale insulin, frequent narcotics) | Yes ☐ | No ☐ | Comments: |
| 8. In the last 48 hours, has the patient had an unexpected health event or crisis? (For example, severe or acute episode requiring immediate intervention such as a sudden drop in blood pressure, O2 saturation level, blood glucose, fall) | Yes ☐ | No ☐ | Comments: |
| 9. Do the patient and/or family have complex support needs? (decrease coping ability, loss & grief, educational needs, discharge planning) | Yes ☐ | No ☐ | Comments: |
| 10. Are the patient and/or family facing complex decisions that require coordination/collaboration with multiple team members? (Discharge planning, Advance Care Directives) | Yes ☐ | No ☐ | Comments: |
| 11. Does this patient's condition require total support to accomplish their activities of daily living? (Physical / Emotional / Cognitive / Nursing Presence | Yes ☐ | No ☐ | Comments: |
| 12. Does the patient require **multiple time intensive** treatments or interventions and/or **recurrent needs** that require more than one care provider pulling the nurse(s) away from attending to other patient needs?<br>• i.e. multiple complex dressings/multiple tubes/lines requiring care;<br>• multiple medications by multiple routes requiring frequent monitoring during administration;<br>• frequent monitoring/assessment or interventions due to cognitive disturbances/aggressive/responsive behaviours.<br>• Ongoing counseling/education/emotional support<br>• Emergency Codes | Yes ☐ | No ☐ | Comments: |

# Tools & Process

| | | | | | | |
|---|---|---|---|---|---|---|
| 13. Overall, how stable is this patient? | Very Stable | | | | | Very Unstable |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Overall, how complex is this patient? | Less Complex | | | | | Highly Complex |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Overall, how predictable is this patient? | Very Predictable | | | | | Very Unpredictable |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Overall, how at risk is this patient for negative outcomes? | Less Risk | | | | | High Risk |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. Overall, how time intensive is this patient's care? | Low Intensity | | | | | High Intensity |
| | 1 | 2 | 3 | 4 | 5 | 6 |

*** The PCNA tool is intended to be used in conjunction with the specific consensus-based review process as described in the RN/RPN Utilization Toolkit.

# Tools & Process

## PCNA Definitions

- Stability
  - Refers to how quickly and how much or how little the patient's condition/care needs are changing
- Complexity
  - Concerned with the amount and diversity of factors that are affecting the patient's condition
- Predictability
  - Refers to how well we can anticipate what is going to happen with the patient

# Tools & Process

- Risk for negative outcome
  - Refers to undesirable end results for patient & family
- Intensity
  - Intensity is concerned with the physical care requirements of the patient, and moments of dedicated continuous time and / or moments requiring multiple care givers to meet recurrent needs of a patient.

# Tools & Process

- Communication
  - Prep meetings, distribute PCNA, definitions, FAQ
  - Reinforce – that it is about the patient care needs, not testing nurses knowledge

# Tools & Process

- Review Team & Roles
  - 2 External members - nursing leaders external to unit, keeper of the process
  - 3 Internal members – nurse, manager, charge nurse
  - Staff up on day of review
- 2 Review days per unit (6 to 8 hrs./day)
  - Day 1 and Day 2 base on LOS
  - Each nurse presents their patient and answers questions from PCNA

# Tools & Process

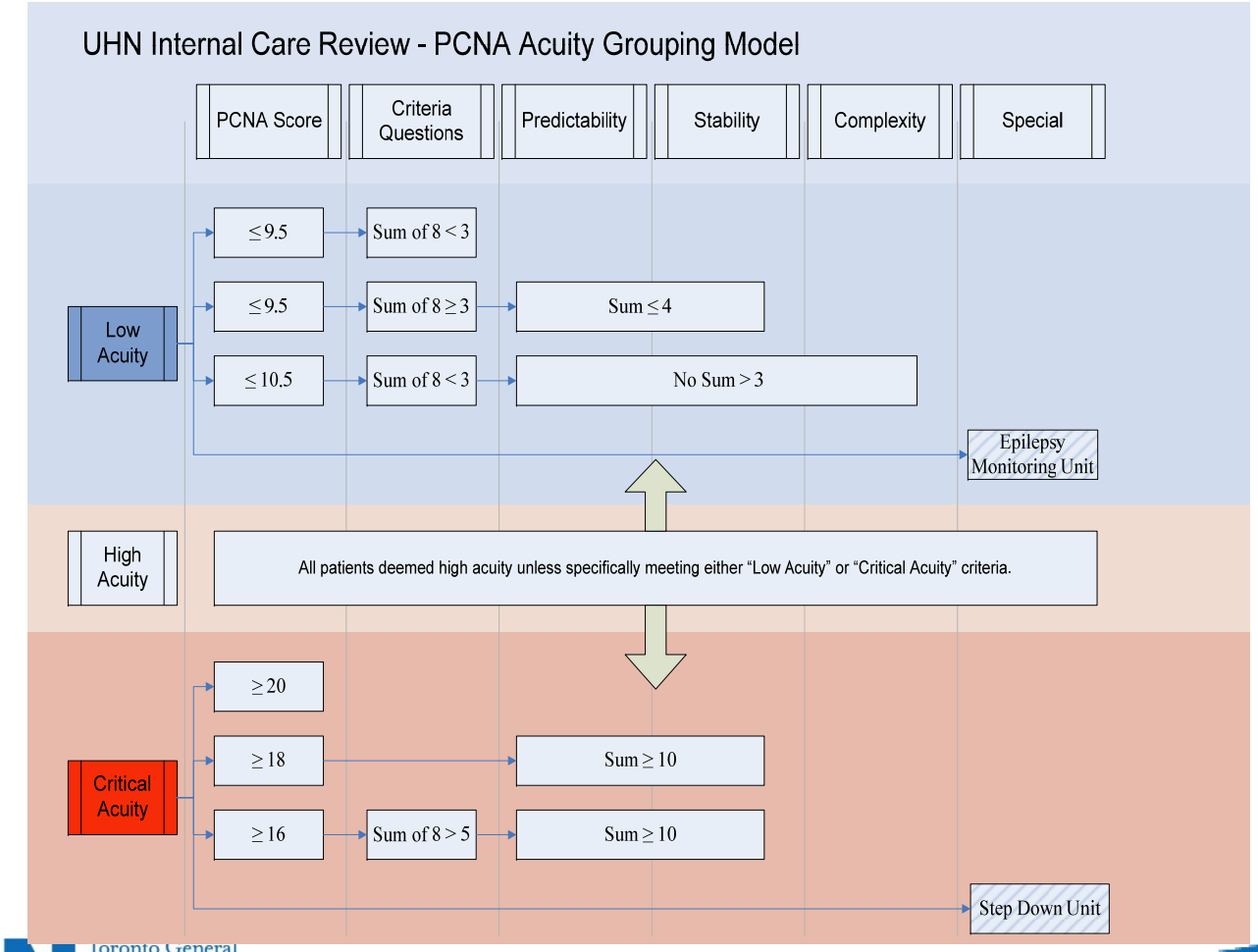
- Team engagement
  - Management/Leadership presence
- Reflection
  - Sharing of stories and knowledge
  - Dialogue
- Informal Assessment
  - Identification of strengths and needs

# Analysis & Results

## Acuity

- Development of “Patient Acuity” algorithm to interpret results of PCNA
- Allows for intra-organizational benchmarking and multi-unit comparison

# Analysis & Results



# Analysis & Results

**University Health Network - Unit Environmental Profile**

**Sample Inpatient Unit**

**Number of Beds:** 24

**Patient Acuity**

| | Low | High | Critical |
|---|---|---|---|
| Day 1 Acuity | 4 | 22 | 2 |
| Day 2 Acuity | 4 | 19 | 1 |
| Daily Average Acuity | 4 | 20.5 | 1.5 |
| Total Pts. Interviewed | | 52 | |
| Overall Acuity | 15% | 79% | 6% |
| UHN Average | 16% | 70% | 14% |

**Staff Levels**

| | # | % |
|---|---|---|
| RNs | 46 | 95% |
| RPNs | 0 | |
| UCPs | 2.5 | 5% |
| Total | 48.5 | |

**Staff Expertise**

| | |
|---|---|
| % of RNs < 1 Year Experience on Unit | 0% |
| % of RNs < 3 Years in Profession | 0% |
| % of RNs > 55 Years Old | 15% |

**Efficieny of Staffing**

| | |
|---|---|
| Sick Time | 4.8% |
| Over Time | 3.8% |
| NRT Time | 3.4% |

**Span of Control / Leadership (FTE's)**

| | |
|---|---|
| - Nurse Managers | 0.80 |
| - Clinical Educators | 0.50 |
| - CNS | 0.00 |
| - NP - Acute | 5.00 |
| - NP - Primary Care | 0.00 |
| - PCC / Care Leader | 0.00 |
| - Nurse Clinician | 0.50 |
| - Clinical Coordinator / Other | 0.00 |
| - In-Charge (No Assignment) | 2.10 |
| - Other Leadership Roles | 0.00 |
| Total per Bed | 0.37 |

**Student Hours**

| | |
|---|---|
| Total Annual Student Education Hours | 6792 |

**Movement ***

| | |
|---|---|
| Average Monthly Day Shift Transfers / Bed | 20.58 |
| Average Monthly Night Shift Transfers / Bed | 1.50 |
| Average Monthly Total Transfers / Bed | 22.08 |

**Bed Spacing**

| | |
|---|---|
| Bed Spaced Days / Month | 36 |

- Each month every bed turns over this many times

| Average Monthly Total Transfers | Shift | From | | | | | | Internal Transfers | Medical Imaging |
|---|---|---|---|---|---|---|---|---|---|
| | | Admission | CCU/ICU | Emergency | In Pt. | Other | Total | | |
| 530 | DAY | 35 | 83 | 8 | 10 | 2 | 137 | 23 | 334 |
| | NIGHT | 3 | 2 | 6 | 1 | 1 | 14 | 4 | 18 |
| | TOTAL | 38 | 85 | 14 | 11 | 3 | 151 | 27 | 352 |

* Transfers do not include those from Cath Lab, Vascular Lab & PACU.

| Shift | TO | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Admission | CCU/ICU | Deceased | Discharge | Emergency | External Facilities | In Pt. | Other | Total |
| DAY | 0 | 37 | 1 | 79 | 1 | 11 | 11 | 2 | 143 |
| NIGHT | 0 | 3 | 1 | 3 | 0 | 1 | 2 | 0 | 11 |
| TOTAL | 0 | 40 | 2 | 82 | 1 | 12 | 13 | 2 | 154 |

**Unit Uniqueness**

Descriptive commentary detailing other unique aspects of each unit not explicitly covered in standard UEP metrics. Obtained by survey from each unit manager.

**Number of Medical Teams**

Detail of specific medical coverage. Including number of teams, staff and on-call coverage. Including time of day and day of week detail.

# Analysis & Results

December 2, 2009

**Relative Acuity, Environment and Supports Matrix**

| | | Dimension | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Patient | | Environment | | | | | | Supports | | | |
| Site | Unit | Low Acuity | Critical Acuity | Number of Beds | Transfer Activity per Month per Bed | <1 Year Experience | Bedspace Days per Month | Access to StepDown | Medical Teams | Manager per Staff | Nursing Supports per Bed | Non-Nursing Supports per Bed | |
| AAA | 4A | 3% | 24% | 15 | 15.2 | 0% | 35.0 | None | 2 | 0.007 | 0.07 | 0.00 | |
| AAA | 4B | 7% | 15% | 14 | 15.5 | 0% | 30.0 | None | 4 | 0.007 | 0.08 | 0.00 | |
| AAA | 6A | 0% | 41% | 15 | 15.8 | 0% | 14.0 | None | 6 | 0.005 | 0.07 | 0.00 | |
| AAA | 6B | 0% | 39% | 15 | 14.6 | 4% | 35.0 | None | 2 | 0.007 | 0.07 | 0.00 | |
| AAA | 7A | 1% | 13% | 39 | 12.8 | 12% | 10.0 | None | 2 | 0.020 | 0.09 | 0.00 | |
| BBB | 1A North | 24% | 11% | 28 | 26.7 | 11% | 77.6 | On Unit | 3 | 0.018 | 0.16 | 0.00 | |
| BBB | 1A South | 16% | 8% | 38 | 9.4 | 24% | 8.2 | None | 7 | 0.020 | 0.17 | 0.00 | |
| BBB | 2A North | 11% | 13% | 38 | 10.8 | 29% | 7.9 | None | 6 | 0.016 | 0.14 | 0.00 | |
| BBB | 2A South | 15% | 4% | 24 | 15.2 | 14% | 38.2 | Remote | 2 | 0.022 | 0.25 | 0.05 | |
| BBB | 3A North | 15% | 6% | 24 | 22.1 | 0% | 35.6 | None | 2 | 0.016 | 0.37 | 0.10 | |
| BBB | 3A South | 23% | 6% | 28 | 11.5 | 5% | 5.9 | Remote | 3 | 0.018 | 0.36 | 0.05 | |
| BBB | 5A North | 5% | 8% | 24 | 12.8 | 10% | 44.8 | On Unit | 2 | 0.015 | 0.18 | 0.00 | |
| BBB | 6A South | 12% | 8% | 26 | 10.8 | 10% | 28.3 | On Unit | 3 | 0.019 | 0.18 | 0.00 | |
| BBB | 7A North | 19% | 16% | 44 | 12.2 | 15% | 14.8 | On Unit | 5 | 0.012 | 0.30 | 0.09 | |
| BBB | 8A South | 31% | 2% | 32 | 14.0 | 13% | 31.8 | On Unit | 4 | 0.013 | 0.15 | 0.00 | |
| CCC | FA 1 Pavilion | 1% | 47% | 24 | 13.7 | 22% | 6.7 | On Unit | 7 | 0.012 | 0.11 | 0.00 | |
| CCC | FB 1 Pavilion | 20% | 3% | 29 | 13.0 | 13% | 26.3 | Remote | 6 | 0.018 | 0.23 | 0.29 | |
| CCC | FA 3 Pavilion | 31% | 2% | 29 | 12.1 | 0% | 15.8 | Remote | 3 | 0.023 | 0.21 | 0.21 | |
| CCC | FB 3 Pavilion | 38% | 5% | 26 | 15.4 | 6% | 74.5 | None | 9 | 0.015 | 0.27 | 0.13 | |
| CCC | FA 7 Pavilion | 12% | 27% | 32 | 9.1 | 19% | 0.6 | None | 6 | 0.020 | 0.20 | 0.11 | |
| CCC | FB 7 Pavilion | 14% | 28% | 32 | 9.8 | 18% | 1.3 | None | 6 | 0.017 | 0.20 | 0.13 | |
| CCC | FA 10 Pavilion | 14% | 6% | 33 | 14.1 | 21% | 34.5 | None | 2 | 0.018 | 0.29 | 0.30 | |

| LEGEND | Patient | Environment | Supports |
|---|---|---|---|
| | High proportion of low acuity patients; low proportion of critical acuity patients | Fewer beds; less patient movement; greater experience; fewer bedspaced days; no access to step down; fewer medical teams | Higher manager to staff ratio; more nursing supports, more non-nursing supports |
| | | | |
| | Low proportion of low acuity patients; high proportion of critical acuity patients | More beds; greater patient movement; less experience; more bedspaced days; high access to step down; more medical teams | Lower manager to staff ratio; fewer nursing supports; fewer non-nursing supports |

# Agent of Change - Skill Mix

- Overlay of RPN deployment with PCNA Acuity scores.
- Identification of misaligned resources
  - RPN presence in conjunction with Critical Acuity
- Redeployment of RPN staff to appropriate clinical setting

# Agent of Change - Skill Mix

- Benefit of PCNA informed Skill Mix decisions:
  - Patient Safety
  - Risk avoidance
  - Staff Satisfaction

# Agent of Change - Staffing Levels

- PCNA formed the foundation of Model of Care investigation:
  - Organization wide view of Patient Acuity and Intensity
  - Comparable measure across Units, Programs, Sites and Hospitals
  - Able to compare patient care needs in diverse patient populations

# Agent of Change - Staffing Levels

- Overlay of Patient Acuity and Intensity with robust measure of true staffing levels
  - Quantity of staff, by profession, by day of week, by time of day
  - Assessment of other staffing related infrastructures (Charge Nurse, Resource Nurse etc.)

# Agent of Change - Staffing Levels

- Identification of Imbalance
  - Units where staffing resources appeared to extend beyond the care requirements of patients.
  - Units where patient Acuity and Intensity threatened to overwhelm existing staffing

- FY 2013 budgeted savings of $3m

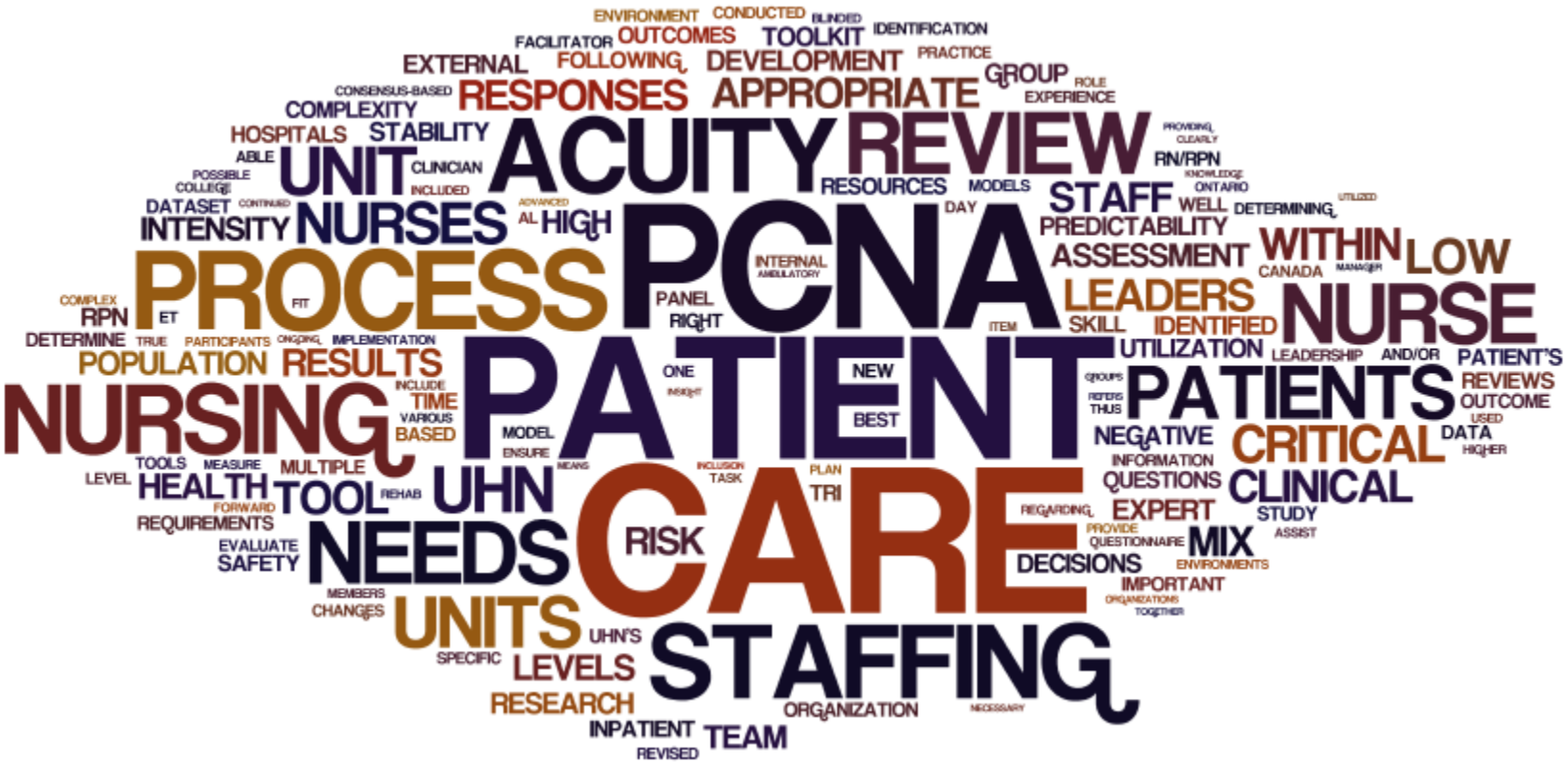
# Moving Forward

- Deployment in Rehab and LTC setting
- Investigation of applicability in ambulatory setting
- Partnerships with external clients
- Research opportunities:
  - Interprofessional concordance
  - Correlation with FIM, RAI, RIW

# Summary

- Translation of research into operational practice
- Standard simple measure of patient care needs
- Balanced, objective & comparable across Units, Programs, Sites
- Long term, sustainable cornerstone of UHN's nursing workforce strategy.

# Thank You!

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# For more information…

**Development and Evaluation of an RN/RPN Utilization Toolkit.**

Blastorah, M. et al (2010). Nursing Leadership: 23 (special edition), 33-55.