Project Team

Co-Leaders:

<table>
<thead>
<tr>
<th>Ellen Harper DNP, RN-BC, MBA, FAAN</th>
<th>John Welton Ph.D., RN, FAAN</th>
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<tr>
<td>Assistant Professor University of Kansas SON</td>
<td>Professor University of Colorado College of Nursing</td>
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Subgroup Leaders:

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<tr>
<th>Subgroup 1: User Stories</th>
<th>Lisa Moon RN, PhD, LNC, CCMC &amp; Greg Clancy RN, DNP</th>
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<tr>
<td>Subgroup 2: Data Dictionary</td>
<td>Cathy Ivory, Ph.D., RN-BC, FAAN</td>
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<td>Subgroup 3: Pilot Study</td>
<td>Ellen Harper, DNP, RN-BC, MBA, FAAN &amp; John Welton, Ph.D., RN, FAAN</td>
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<td>Subgroup 4: Dissemination</td>
<td>All members</td>
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<td>Subgroup 5: Research Governance</td>
<td>Amy L. Garcia DNP, RN, CENP &amp; Peggy Jenkins Ph.D., RN</td>
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<tr>
<td>Subgroup 6: Business Intelligence and Analytics</td>
<td>Chris Looby FACHE &amp; John Welton, Ph.D., RN, FAAN</td>
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Purpose:

To measure the value of nursing care as well as the contribution of individual nurses to clinical outcomes and cost. Develop big data techniques for secondary data analysis that will provide metrics to monitor quality, costs, performance, effectiveness, and efficiency of nursing care. This has been our 4th year of working together to:

1. Test and refine the work products from previous years (Nursing Value data model, data dictionary, user stories, and metrics) to quantitatively measure the nursing value
2. Test the feasibility of extracting, validating and de-identifying data from disparate electronic systems
3. Created the Nursing Value Research Data Warehouse (NVRDW) at the University of Colorado using a high-performance computer
4. Develop an NVRDW governance model to securely transfer data
5. Create business intelligence tools to enable measuring the patient level nursing intensity and cost per patient across the continuum of care.

Meeting Dates 2017-2018

Monthly leadership team meetings were conducted to track progress and respond to any questions or barriers to progress the subgroups were experiencing. The subgroups met individually organized by the respective subgroup leaders.

Overall Focus of Meetings

The emphasis has been to complete the above objectives with actual data from the pilot site. This work is currently under analysis with expected completion in summer of 2018. We have two additional research sites (rural and integrated delivery network (IDN) -6 hospitals) to add data to NVRDW.
Accomplishments

Subgroup 1: User Stories:
Continued to refine the user story template and begin testing feasibility with real data
Submitted article to Computers in Nursing (Appendix A)

Subgroup 2: Data Dictionary:
Three virtual meetings. Continue to refine the data dictionary from research site work. Mapping to LOINC/SNOMED when possible

Subgroup 3: Pilot Study
Conducted weekly virtual meetings with Children’s Hospital of Los Angeles (CHLA) staff to work through the variables and data extraction for each of the four electronic systems we needed. We had multiple issues related to getting the correct data elements and the size of the data files that had to be resolved. We have gotten a complete data set for 2 years (2015-2016) into the NVRDW and have begun the analysis. Started the dissemination plan

Subgroup 5: Research Governance
Created the NVRDW at the University of Colorado using a high-performance computer. Formation of big data research consortium between University of Colorado College of Nursing, University of Kansas School of Nursing, and University of Minnesota School of nursing. Created Consortium Memorandum of Understanding (MOU) signed by Deans of three Universities. Developed Charter for NVRDW Governance. Selected and invited potential NVRDW Board of Directors (academics, practice & industry). Manuscript submitted to Nursing Economics. (Appendix A)

Subgroup 6: Business Intelligence and Analytics
Building a generalized analytic model that will recognize the value delivered to individual patients considering the total cost of RN care taking into account all the differing RN’s rendering care across an episode of care in a single setting – e.g. an inpatient stay on a med/surge unit. The model relies on standardized ways of collecting and understanding data and information gathered. Organizational factors are standardized by incorporating the Nursing Management Minimum Data Set within the Service-Profit Chain published Harvard Business Review.

Funding:
- Welton, J.M. (PI) & Perraillon, M., Measuring nursing value. 1R03 HS025495-01, Agency for Healthcare Research & Quality (AHRQ)
- Welton, J.M. (PI), Perraillon, M., & Jenkins, P, Title: Data to Nursing Value University of Colorado School of Medicine, Data to Value Intramural Grant
- Garcia, A. (PI) Relationship of Acuity to Nursing Sensitive Outcomes, University of Kansas School of Nursing Intramural Grant
- Harper, E. (PI) Turning Healthcare Data into Actionable Clinical Intelligence Project, University of Kansas School of Nursing Intramural Grant
Next Steps

- Continue to explore the concepts of measuring nursing value
- Validation of the nursing value data model continues through 2018 using data from CHLA and 2nd research site (rural adult hospital in Texas- Midland Memorial)
- Finalize IRB and begin data extraction at the 3rd reference site (IDN in Wisc.-Aurora Health Care)
- Stand up NVRDW governance board of directors
- Explore future funding to sustain research effort and leverage expertise of consortium members
- Proceed with dissemination plan of multiple articles and presentations

Appendix A

Presentations/ Publications (June 2017 – June 2018)

Publications


**Presentations**


