2020

NURSING KNOWLEDGE: BIG DATA SCIENCE

CONFERENCE PROCEEDINGS

**VIRTUAL SESSIONS:
JUNE 4, JULY 2, AUG. 6 AND SEPT. 17 2020**

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Complete Conference Information
To see the conference agenda, action plans from this year and previous years, abstracts and presentations, visit http://z.umn.edu/bigdata

Join the Conversation on LinkedIn – Big Data: Empowering Health
https://www.linkedin.com/groups/12096820

2021 Conference Dates
Nursing Knowledge: Big Data Science Conference will be held online June 9-11, 2021

Introduction to the 2020 Nursing Knowledge: Big Data Science Proceedings

With deepest gratitude, we celebrate the commitment of all NKBDS participants and partners to advancing big data science through who we are and what we do in partnership and community.

This year, due to unprecedented times and a commitment to everyone's safety and health during the COVID-19 pandemic, the NKBDS conference moved to an online format. The change supported our commitment to lifting up the Initiative's amazing vision and transformative work to advance better health outcomes resulting from the standardization and integration of nursing data, information, and knowledge. This decision was made considering health and safety factors and in consultation with the NKBDS Steering Committee. The Initiative welcomed this new adaptive format, including an agenda advancing our understanding and innovations related to the COVID-19 pandemic. We recognize and welcome our current paradigm shift, where innovation, quick adaptation and adoption, and engagement in partnership and community are experienced daily and are hallmarks of re-envisioning and transforming health and health care. The online format was comprised of four three-hour sessions held monthly from June to September 2020.

The 2020 proceedings follow the same format as previous years. The workgroup reports of achievements for the year 2019-2020 are followed by the workgroup action plans for the year 2020-2021. We also introduce the revised and approved Nursing Knowledge: Big Data Science (NKBDS) Initiative framework. We acknowledge all attendees, from the United States and Europe, in the four online sessions.

SUMMARIES OF SESSIONS

SESSION 1 (JUNE 4, 2020):
Workgroup Leaders and Steering Committee members only.

The session brought together NKBDS workgroup leaders and Steering Committee members for in depth dialogue, reflection, and visioning. The opening keynote featured Dr. Jakub Tolar, MD, PhD, Professor and Dean of the Medical School, and Vice President for Academic Clinical Affairs for the University of Minnesota. This keynote acknowledged NKBDS's accomplishments over the year, discussed the initiatives currently being done in response to the COVID-19 emergency, and fostered enriched discussions. Dr. Tolar highlighted five key trends during the pandemic thus far:

1) Telehealth has proved itself and there is now an opportunity for informatics teams to leverage themselves in this new normal. The challenge is to use data to show how telehealth impacts health outcomes, and how telehealth has been used, not just for long-distance visits, but also inside institutions to prevent exposure to the virus (e.g. helping to communicate with patients in isolation).

2) A need for protecting patient privacy as well as developing identifiers that can be shared across organizations.

3) A need to find a way to reimburse nurses' contributions, equipment, etc. as telehealth has been employed in new ways.

4) A need to provide enhanced telehealth education to nurses as we move forward.

5) A need to adjust language according to this change, e.g. virtual visits are now just care visits.

SESSION 2 (JULY 2, 2020):
Data and COVID:
Practice and Industry Perspectives.

Invited speakers Judy Murphy, RN, FACMI, LFHIMSS, FAAN Chief Nursing Officer, IBM Global Healthcare and Laura Reed, RN, DNP, Chief Nurse Executive, Chief Operating Officer, Fairview Health System expanded on complementary experiences in practice and industry in response to the pandemic. Ms. Murphy provided a national overview of current adoptions related to COVID-19 surveillances and emphasized the outstanding partnership model created and used by the state of Minnesota. Dr. Reed shared the Dashboards for COVID-19 created and implemented by MHealth Fairview Health System. She described the expedited process of building the dashboard, data views, use of the command center, and daily huddles to evaluate, coordinate and advance planning. Conference participants engaged in breakout sessions for its discussions on "Critical Discussions and Applications to NKBDS Activities", and current "hot" topics, followed by questions and action-based solutions. Informatics best practices were lifted up, enhanced by listening and learning from each other about their COVID-19 experiences, and highlighting the implications for informatics and data.

SESSION 3 (AUGUST 6, 2020):
Learning from COVID: Perspectives from Academia & the VHA.

Deborah Trautman, PhD, RN, FAAN, President and Chief Executive Officer of the American Association of Colleges of Nursing (AACN) discussed academic nursing leadership and their advancement of research, patient-care, and workforce development. Dr. Trautman stressed the importance of evidence, communication, and relationships in responding to the current crisis. This includes understanding how science and data informs nursing practice and policy, identifying and sharing best practices and resources, conducting webinars, holding discussions with nursing school deans, leveraging academic-practice partnerships, and the importance of documenting and disseminating what we are learning.

Sheila A. Ochylski, DNP, RN-BC, Chief Nursing Informatics Officer, Veteran Health Administration (VHA), joined by Constance Berner, MSN, RN-BC, Nursing Informaticist, Office of Nursing Informatics, shared perspectives from the VHA, the largest integrated health care system in the United States. This large system also utilizes different systems and workflows across its regions. In response to the surge of patients during the pandemic, the Office of Nursing Informatics (ONI) organized a Nursing Admission and Shift Assessment (NASSA) legSorry,acy systems modernization taskforce to tackle the reduction of nursing admission documentation. Using guiding principles brought back from a workgroup at the 2019 NKBDS, a patient and nurse driven template of six domains was created using data as the foundation. This standardized template was released nationally in just 21 days across this largest integrated health care system with a 100% adoption rate. It can be upgraded within 24 hours with updated CDC guidelines. As a result, the time for patient assessments was reduced from 60 to 15 minutes.

SESSION 4 (SEPT 17, 2020):
Reimagining the Future of Big Data:
How COVID-19 has elevated the importance of nursing informatics.

This session brought all speakers from the previous sessions together for a panel discussion focused on nursing and nursing informatics education needs for the present and near future of health care, the value of nursing work and how to increase visibility and consumer engagement, and addressing future challenges. Dr. Tolar emphasized teams and networks as the new platform which has resulted in an overwhelming amount of work at the information level. Implementing AI applications can support eliminating errors and prevent waste and variability of care. Dr. Reed discussed the import of making nursing care and nursing information visible and the need for nursing to be part of a plan of care. She emphasized the need to further advocate for standards of documentation that support nursing's focus on nursing care. Ms. Murphy raised the question of nurses' recognition as social heroes and the need to create a platform for nurses to have higher visibility and viewed as a partner. This platform would help to clarify health information as disseminated to patients and communities. Dr. Ochylski reinforced the need to increase adoption of standardization of documentation and the priority of launching more informatics projects across the VHA system. Dr. Trautman highlighted the active response

from both practice nursing and academia and how extraordinary these partnerships have been in applying new knowledge. She noted that nursing is the most trusted profession, which the pandemic has brought to the forefront, along with the need to continually demonstrate nurses' contributions to health and promote innovation and creativity in nursing. Closing out this last session, workgroup leaders and workgroups members discussed and defined their action plans for 2020-2021, including demonstrating nurses' contributions to health.

Throughout these four sessions, participants identified and discussed key hot topics and challenges currently present in nursing and nursing informatics, including how the world has moved to digital technologies, specifically around telehealth, and the nursing role in this new trend. With the increased use of technology, interdisciplinary discussions (and work) are paramount. Further collaboration across disciplines is particularly needed now in response to the pandemic. Along with the increased use of technology, there is a need to re-envision nursing competencies that are aligned with the expectations that nurses (including faculty) are knowledgeable and able to incorporate these competencies into their daily practice. To make this happen, policy standards and advocacy for nurses in a digital world are needed to address specific challenges, such as the burden of documentation, reduction of national regulations during COVID-19 times, the protection of the nursing workforce, and ensuring fair and equal opportunities to all nurses.

Repeatedly, data and documentation were emphasized as not only useful but necessary for informing decision-making. Methods for collection of unbiased data, different types of data available due to COVID-19, the use of technologies to accelerate the process between data generation and implementation with a nursing perspective, and the inclusion of nursing-sensitive measures are still necessary. Examples of successful stories and implementations were discussed and the need to share these stories and further accelerate successful models and standards across settings. Aligned with the use of data, standardization and the successful implementation of models are key to reinforce the NKBDS vision of sharable and comparable nursing data across systems. COVID-19 has shown the import of addressing this gap now, spanning informatics capacity from local systems through national implementation. Addressing this opportunity now will also address health disparity, prevent injustices, and provide advocacy support for minorities.

This emerging "new normal" triggered by COVID-19 had already been in place for months. Let's celebrate the many insights and innovations resulting from the pandemic. Attendees expressed appreciation of the speakers, the breakout sessions, and the timely discussion around COVID-19, especially the input from multiple perspectives. The move to an online conference format was very well received for its accessibility and flexibility, while supporting health and safety. The conference also increased awareness of new resources, in particular a number of people were impressed by the use of technology together with key stakeholders for real-time COVID-19 surveillance. Attendees renewed commitment to continue making contributions to workgroups, sharing resources, and expanding new ways to use data and analytics in their work to advance the NKBDS vision and goals.

SAVE THE DATE
FOR NEXT YEAR'S CONFERENCE TO BE HELD VIRTUALLY, JUNE 9-11, 2021.

More information about current and future activities related to the NKBDS Initiative can be found at the Initiative/conference website, **z.umn.edubigdata**. Everyone is invited to join the conversation via the LinkedIn platform Big Data: Empowering Health, **www.nursingbigdata.org**.

NKBDS STEERING COMMITTEE

Connie W. Delaney
(co-chair)

Rebecca Freeman
(co-chair)

Lisiane Pruinelli
(co-chair)

Christel Anderson
(Member)

Jane Englebright
(Member)

Alvin Jeffrey
(Member)

Laura Heermann Langford
(Member)

Susan Matney
(Member)

Erin Maughan
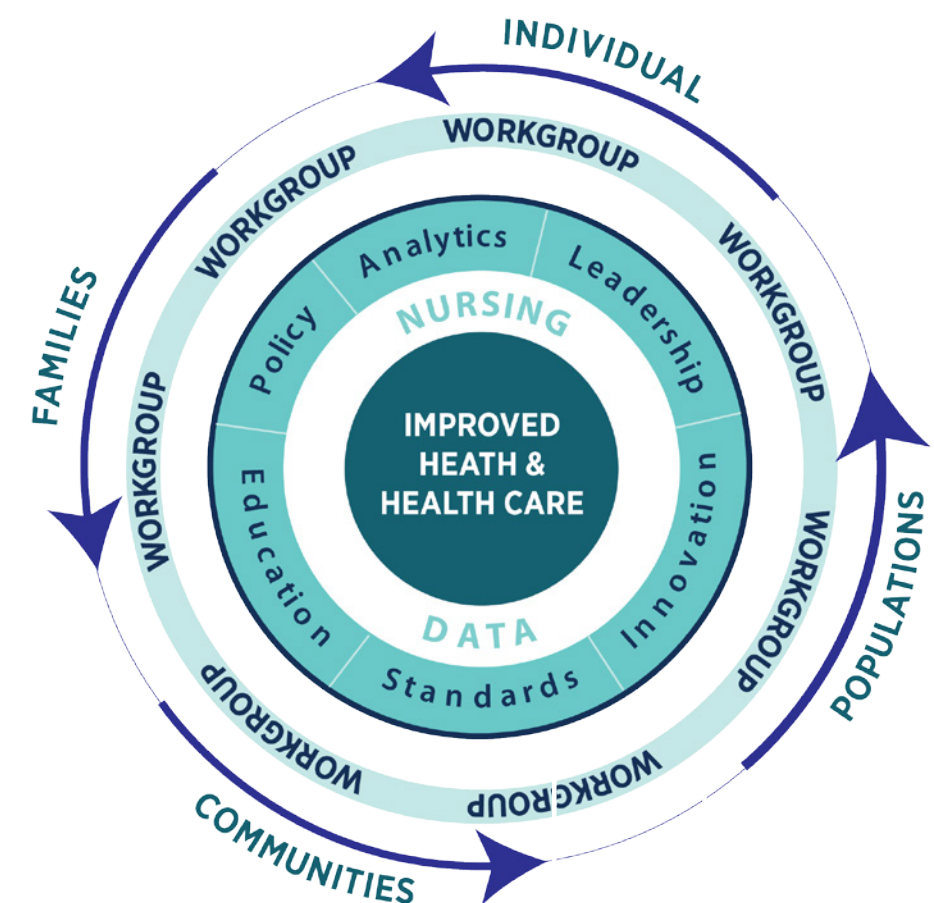(Member)

Judy Murphy
(Member)

Joyce Sensmeier
(Member)

Charlotte Weaver
(Member)

NURSING KNOWLEDGE BIG DATA SCIENCE (NKBDS) INITIATIVE

VISION

We share a vision of better health outcomes resulting from the standardization and integration of the data and information nurses gather in electronic health records and other technologies and systems, which is increasingly the source of insights and evidence used to prevent, diagnose, treat and evaluate health conditions. The addition of contextual data, including environmental, geographical, behavioral, imaging, and more, will lead to breakthroughs for the health of individuals, families, communities and populations.

HISTORY

- By 2013, big data activities were exploding in all fields, including health care. However, nursing found itself on the outside looking in.
- The University of Minnesota School of Nursing invited nurse leaders to address obstacles to achieving sharable and comparable nursing data.
- Over 40 nurse leaders and informaticians attended the inaugural meeting.
- Participants included health system leaders, electronic medical record vendors, educators, researchers, and informaticians.
- Priorities were identified and structured into Work Groups with defined goals to be completed by the next annual meeting.
- All participants agreed that nursing data must be codified in universally-accepted, standardized terminologies in order to be included in big data research.
- The group decided to align with the professional nursing informatics communities of AMIA and HIMSS and to adopt SNOMED CT and LOINC as standardized terminologies.

CURRENT STATE

Starting in 2014, additional attendees were invited to the annual meeting/conference.

The conference:

- Has grown in number of participants and in the breadth and depth of the discussions, topics, and Work Group activities.
- Includes pre-conference educational tracks, plenary sessions, Working Group meetings, goal setting, accomplishment sharing, and networking.

Work Groups:

- Include volunteers, led by a chair and/or co-chairs, that focus on specific topics.
- Meet virtually throughout the year at a time and frequency convenient for its members in order to complete their objectives.
- Welcome all interested individuals to join in and participate!

Care Coordination

PROJECT TEAM

Co-Leaders

Mary Hook, PhD, RN-BC, Research Scientist, Advocate Aurora Health Care

Lori Popejoy, PhD, RN, FAAN, Associate Professor, Helen E. Nahm Endowed Professor, University of Missouri

Members

Chelsea Biel

Kyle Carson

Greg Craig

Laura Hermann Langford

Stephanie Hartleben

Sharon Hewner

Stephanie Johnson

Matthew Keller

Jean Scholz

Pauline Sokolow

Christine Spisla

Brooke Trainum

Nikki VandeGarde

Bonnie Wakefield

PURPOSE

To identify nursing-sensitive essential shareable and comparable data elements for exchanging across settings to support care coordination activities and improve patient outcomes. Based on group input, missing information includes patient preferences, goals, strengths, ability to self-management

To use a cross-sectional survey methodology with care coordinators (managers/direct care providers) AIM: to describe: 1) characteristics of care coordinators, 2) how they do their work, 3) the current state of information that they collect, and 4) identify gaps/missing information needed to facilitate the communication and care across the care continuum

To identify specific data elements used by professional nurse care coordinators to support the exchange of vital information between all stakeholders [future]

CURRENT ACTIVITIES

1. The team has reviewed the literature and created working document to describe the workflow for transitional and problem-focused care coordination and a working list of data elements described in the literature (e.g. AHRQ, CMS, etc.) and used by care coordinators
2. Team members collaborated on publishing on transitional care
3. The team is working to finalize a research protocol with an on-line survey and a purposive recruitment technique to sample a wide variety of settings where care coordinators work. We are finalizing the survey tool and communication instructions for submission to the IRB. Goal to distribute tool in July 2020 using a variety of sources to support distribution (e.g. BDNS/Workgroup member personal contacts, ANI, ANA, and outreach to AAACN). Analysis will be completed in August with work toward dissemination

RECENT AND UPCOMING PRESENTATIONS

None

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

1. Hewner, S., Chen, C., Anderson, L., Pasek, L., Anderson, A., & Popejoy, L. (in press). Transitional care models for high-need, high-cost adults in the United States: A scoping review and gap analysis. Professional Case Management

RECENT AND UPCOMING OTHER PRODUCT

1. Survey results will be analyzed and summarized as a manuscript for publication

Clinical Data Analytics

PROJECT TEAM
Co-Leaders

Lisiane Pruinelli, PhD, RN, FAMIA, Assistant Professor, University of Minnesota, School of Nursing

Bonnie L. Westra, hD, RN, FAAN, FACMI, Associate Professor Emerita, University of Minnesota, School of Nursing

PURPOSE
Demonstrate the value of sharable and comparable nurse-sensitive data to support practice and translational research for transforming health care and improving patient quality and safety. The subgroups are: Data Science and Information Modeling (previously Information Model Validation)

DATA SCIENCE SUBGROUP
Apply data science methods, using validated information models derived from diverse sources of health care data, to address nurse-sensitive research questions that have the potential to inform nursing and multidisciplinary approaches for better patient care and outcomes

INFORMATION MODELING SUBGROUP
Validate previously developed information models from flowsheet data to extend national standards with nurse-sensitive data; assist with information modeling when requested i.e. Admission History and Screening task force; and, continuously improve and adapt information model validation and creation from flowsheet data and other nurse-sensitive information

CURRENT ACTIVITIES – DATA SCIENCE SUBGROUP
1. Nursing data science Year in Review. Literature review across all publish papers in the last year that were related to Nursing Data Science
2. Developed and explore cloud data science environments capable of being sharable across institutions, such as Google BigQuery. These shared environments allow workgroup members to explore data science techniques, machine learning and working with large healthcare datasets for complete research projects, while sharing the same virtual desktop
3. Current research project is focused on building a model for predicting ventilator associated pneumonia (VAP) in the ICU using the MIMIC III dataset. We are redefining research question based on covid-19 pandemic, and focus on a covid-19 related question with a covid-19 related environment capable of being sharable across institutions
4. Developing a literature/educational resource targeting nurse leaders in the use of data science for research and quality improvement

RECENT AND UPCOMING PRESENTATIONS
1. Pruinelli L. Applied Healthcare Data Science Roadmap to Accelerate Quality Improvement. Workshop on Implementation of Innovations in the Nursing and Healthcare Clinical Practice. March 12, 2020. Curitiba, Brazil
2. Pruinelli L. Big Data Science and Implications for Nursing. Workshop on Implementation of Innovations in the Nursing and Healthcare Clinical Practice. March 11, 2020. Curitiba, Brazil
3. Pruinelli L. Research in Nursing Informatics and Big Data. Workshop on Implementation of Innovations in the Nursing and Healthcare Clinical Practice. March 10, 2020. Curitiba, Brazil
4. Pruinelli L. Nursing in the Big Data Era. Workshop on Implementation of Innovations in the Nursing and Healthcare Clinical Practice. March 9, 2020. Curitiba, Brazil

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Clinical Data Analytics

5. Pruinelli, L., Winden, T.J., Johnson, S.G. Hands-On Full Life Cycle Data Science Tutorial. Medinfo 2019. Lyon, France
6. Westra, B., Pruinelli, L., Androwich, I., Wilson, M., Harper, E. Nursing Knowledge Big Data Science Panel. Medinfo 2019. Lyon, France

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS
1. Schultz, MA., Walden RL., et al. (under review). Nursing-relevant patient outcomes and clinical processes in data science literature: 2019 year in review. Submitted to: CIN: Computer, Informatics, Nursing
2. Pruinelli L, et al. (under review). The Symbiotic Collaboration between Family Nursing and Data Science. Submitted to: CIN: Computer, Informatics, Nursing
3. Pruinelli, L., Winden, T.J., Johnson, S.G., Fesenmaier, B., Coviak, C., Delaney, C. (2020). An Applied Healthcare Data Science Roadmap for Nursing Leaders: A workshop development, conceptualization and application. CIN: Computers, Informatics, Nursing: March 4, 2020 - Volume Publish Ahead of Print - Issue - doi: 10.1097/CIN.0000000000000607

RECENT AND UPCOMING OTHER PRODUCTS
1. Hands-On Full Life Cycle Data Science Tutorial materials: https://github.com/nkbds/medinfo2019
2. Several queries to explore and capture information about VAP
3. Shared query environment in GoogleBigQuery

CURRENT ACTIVITIES – INFORMATION MODELING SUBGROUP
1. Updating flowsheet metadata for validating information models. In process of developing an updated data source for mapping nursing data to IM's
2. Sent two surveys for external validation of the GU and Fall Prevention information models
3. Completed the GU Model and formed a collaborative group with Encoding and Modeling Workgroup to clearly specify definitions and context when adding terminologies
4. Submitted an article on modeling process and exemplar from the GU IM for publication to JAMIA. This has been revised twice and we are waiting for a response
5. Completed the Fall Prevention survey, finalizing value set definitions, and will send final model to Encoding group in June
6. Cross walked the Pain IM spreadsheet of concepts with the LOINC/ SNOMED CT mapping spreadsheet from Susan Matney
7. Developing an article on the Fall Prevention IM
8. Created an initial VTE IM model. Since this is a very interprofessional topic, revised process to show handoffs between physicians/ advanced practitioners and nurses. This included swim lane diagrams for workflow, formal UML modeling as well as Excel spreadsheet of classes, concepts (questions), value sets (answers), relationships, and definitions
9. Collaborated with the Admission History and Screening task force to complete definitions and do the UML modeling. Communicated with Cerner to evaluate similarities and differences in their Adult History/ Screening compared with the task force. Actual modeling/ data standardization to begin after June 2020

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Clinical Data Analytics

10. Identified the need to develop Guiding principles – similar to what the Admission/ History group did and then display all the time to keep focus on inclusion/ exclusion criteria for the models

11. Provided feedback to Young Park, DNP Student on development of a CLABSI IM

12. Requested support from the Alliance for Nursing Informatics for participation in future surveys to validate IMs. Received a positive response

13. Initiated discussion about process for updating IMs in the future once they are completed. Agreed to have a running document of requests, but models would be updated only every 3-5 years.

14. Collaborated with CMS Technical Expert Panel (TEP) for hospital harm clinical quality measure development for Falls with Injury. Shared our Fall Prevention IM with them.

15. Identified 3 issues for cross workgroup sharing:

    a. Initiated discussion on Copyright/ Licensing of products created by the Workgroup. Requested assistance for how to do this process across Workgroups

    b. Developed a policy on "Research Data Management: Acquisition, Use, Retention and Removal Flowsheet Metadata for Information Modeling"

    c. Discussed dissolving the Clinical Data Analytics Workgroup and instead the 2 subgroups (Data Science and Information Modeling) would become workgroups. Also discussed whether the IM subgroup could merge with the Encoding and Information Modeling workgroup. There were significant concerns that the group would become too big so for this next year, the recommendation is to have cross subgroups by topic i.e. VTE that provides expertise from informatics nurses in practice/academia and experts in data standards. The intent is to develop a model to merge these groups in the future if this is successful

RECENT AND UPCOMING PRESENTATIONS

1. Adams, M. (September, 2019). Nursing Leadership: Quality, Safety, Regulatory and Informatics, Role of Nursing in Leadership Lecture. Anoka Ramsey Community College, Coon Rapids Minnesota

2. Akri, M., Hook, M. (Submission for 2020 conference). Using Information Modeling to Support Wisdom in Practice. Magnet Conference. Atlanta, GA

3. Furukawa, M. (July 24, 2019). Information Management and Knowledge Generation, Data Analytics. Class in the UCLA Nursing Informatics Fellowship program, Los Angeles, CA

4. Furukawa, M., Akri, M.- (March 9, 2020). Improving Care Outcomes: Start with Standardization of Nursing Knowledge Information Models. HIMSS20 Nursing Informatics Symposium. Orlando, FL

5. Johnson, S.G., Pruinelli, L., Westra, B.W. (November 18, 2019). Machine Learned Mapping of Local EHR Flowsheet Data to Standard Information Models using Topic Model Filtering. AMIA Annual Symposium, Washington, DC

6. Lytle, K.S., Westra, B.L., Hook, M., Adams, M., Ali, S., Furukawa, M., Johnson, S.G., Rajchel, T., Collins Rossetti, S., Settergren, T., Whittenburg, L. (November

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Clinical Data Analytics

18, 2019). Analyzing Flowsheet Data to Refine and Validate Information Models. AMIA Annual Symposium, Washington, DC

7. Lytle, K.S., Westra, B.L., Hook, M., Adams, M., Ali, S., Whittenburg, L. (Submission for Fall 2020). Fall Prevention Information Model Validated Using Flowsheet Metadata, AMIA Annual Symposium, Washington, DC

8. Westra, B.L. (November 22, 2019). Nursing Knowledge Big Data Science Initiative. VCU, Richmond, VA

9. Whittenburg, Luann. (December 2019), Guidance on the Clinical Care Classification Implementation in Electronic Health Records, 4th Clinical Care Classification User Meeting, Nashville, TN

10. Whittenburg, L, Turner, T. & Anderson, J. (2020 submission, pending). Standards, Standards, Standards: Interoperability Frameworks and Health Information Exchange, American Medical Informatics Association, Clinical Informatics Conference (AMIA CIC), Seattle, WA

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

1. Westra, B.L., Lytle, K.S., Adams, M., Ali, S., Furukawa, M., Hartleben, S., Hook, M., Johnson, S.G., Collins Rossetti, S., Settergren, T., Whittenburg, L. A (Submitted October 1, 2010). Refined Methodology for Validation of a Genitourinary Information Model Derived from Flowsheet Data. JAMIA

2. Lytle, K. (2019). Information Models Offer Value for Nursing. Nursing2019, 49(7), 61-62

RECENT AND UPCOMING OTHER PRODUCTS

1. Genitourinary Information Model (finalized)

2. Fall Prevention Information Model (finalized)

3. Pain Information Model with LOINC/ SNOMED CT codes

4. Participated on posting on LinkedIn Big Data Empowering Health

Context of Care

PROJECT TEAM

Co-Leaders

Amber Oliver, DNP, RN-BC, Director Clinical Informatics, Sanford Health

Heather Shirk, MSN, RN, Clinical Informatics Nurse, WellSpan Health

PURPOSE

Demonstrate sharable and comparable nurse data across the care continuum by capturing nursing "big data" in the Nursing Management Minimum Data Set (NMMDS), the Nursing Minimum Data Set (NMDS) and the Nursing Knowledge: Big Data Science Conference Nursing Value Data Set (NVDS) to increase nurse data usability, provide patient, family and community centric data and, fortify data generated by nurses, about nurses and nursing care across the care continuum and across care transitions in all settings where nurses provide care

CURRENT ACTIVITIES

1. Work with the SDOH group to promote #SocialVitalSigns & Continuity of Care MDS
   a. Ongoing collaboration with SDOH identifying potential Social Vital Signs vendor engagement & pilot organization
2. Secondary examination of existing data set from one of the workgroup participants
   a. Completed August 2019
3. Literature Review for Mental/Behavioral Health Taxonomy Selection
   a. Initial Literature Review completed November 2019 & remains ongoing
4. SDOH & Psychosocial Asmt EHR Vendor Crosswalk for Information Model
   a. Cerner & Epic Model SDOH crosswalks completed September 2019
   b. Epic client SDOH comparison completed November 2019
5. Review of Continuity of Care (Intake/Discharge Information) for SDOH & Mental/Behavioral Health
   a. Initial Information Model & Interoperability Design completed
   b. Proof of Concept data exchange of patient demographics, allergies, meds & problem list successfully completed from data aggregation level of data repository without mapping at a discrete field level
   c. Actively working on cross vendor export & import of Facesheet, Diagnosis List with ICD10 codes, awaiting initial data extract
   d. Received approval for expansion of Proof of Concept work to include SDOH, Infection Control Flags, Care Plan NNN, Treatments & Activities Record, Discharge Summary, & last Head to Toe Assessment data. Will be built as a cross vendor export to import data exchange Acute to Post Acute
6. Application of findings to taxonomy design for Danger to Self/Others Plan of Care
   a. Ongoing goal for 2020

RECENT AND UPCOMING PRESENTATIONS

None at this time

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

1. Hewner S, Chen C, et al. Transitional care models for high-need, high-cost adults in the United States. Professional Case Management. DOI: 10.1097/NCM.0000000000000442

RECENT AND UPCOMING OTHER PRODUCTS

None at this time

Education

PROJECT TEAM

Co-Leaders

Marisa L Wilson, DNSc, MHSc, RN-BC, CPHIMS, FAMIA, FAAN, Associate Professor, Specialty Track Coordinator Nursing Informatics Director, Nursing Health Services Leadership Pathway, University of Alabama at Birmingham, School of Nursing

LaVerne Manos, DNP, RN-BC, FAMIA, Director, KUMC Center for Interprofessional Health Informatics, Clinical Associate Professor, Kansas University Medical Center, School of Nursing

PURPOSE

To recognize and address the significant gaps in faculty knowledge related to informatics processed and the use of information and communication technologies in care settings; significant gaps in competency and capability in students who are expected to use these technologies to move data to information to knowledge to improve outcomes and efficiencies; faculty knowledge to advance the uptake of the work done by the Nursing Knowledge Big Data Science Initiative into the classroom and out into the care environment; and need for significant faculty development in response to the AACN Re-Envisioning of the Essentials Domain 8, Informatics, Information and Communication Technology, with specific competency and measurable subcompetency expectations at the Entry to Practice and Advanced Nursing levels

CURRENT ACTIVITIES

2. Created subgroups:
   a. Review of Materials
   b. Development of Case Study
      i. Creating complex case studies which will serve as linkage to materials
   c. Faculty Development Plan
      i. Synthesizing assessment tool evidence
   d. Visual/Graphic Development for Repository
3. Monitor changes to AACN Re-Envisioning of Essentials
4. Monitor changes to ANA Scope and Standards of Nursing Informatics Practice
5. Coordinate with organizations focused on competency development

RECENT AND UPCOMING PRESENTATIONS

1. Summer Institute in Nursing Informatics, July 17, 2019, Baltimore, MD
2. MedInfo 2019, August 25-30, 2019, Lyon FR
3. AACN Review of Re-Envision Essentials
   a. Entry to Practice (March 4-6, 2020, Atlanta GA)
   b. Advanced (June 17 & 23, 2020 Virtual)
4. Summer Institute in Nursing Informatics, Baltimore, MD July 15-19, 2020 (moved to 2021)
5. NI2020, Brisbane Australia, August 4-8, 2020 (moved to MedInfo 20210 in Sydney, AU)

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

None at this time

RECENT AND UPCOMING OTHER PRODUCTS

1. Educational materials
2. Faculty Development plan
3. Case study to link materials
4. Graphic tools to place into the NKBDSI repository

Encoding and Modeling

PROJECT TEAM

Co-Leaders

Tess Settergren, MHA, MA, RN-BC, Independent

Stephanie Hartleben, RN-BC, MSN, MHA, Senior Manager, Clinical Informatics, Elsevier

PURPOSE

Develop LOINC and SNOMED Clinical Terms content for electronic health record nursing data and incorporate the content into a framework and repository for dissemination

CURRENT ACTIVITIES

1. Review Basic Physiologic Assessment Value Sets for Publication in VSAC
2. Pain assessment tools:
   a. Prioritized list provided for LOINC to obtain copyright permissions:
      i. Permission granted: N-PASS, NIPS, rFLACC, CNPI
      ii. Seeking developer permission: PAINAD
   b. LOINC panel build:
      i. N-PASS panels submitted to LOINC
      ii. Building NIPS, PAINAD, rFLACC, CNPI
3. Mapping Heuristics Foundations: Completed
4. Content Request Process:
   a. Draft to be reviewed by Information Modeling team
   b. Finalize June/July time frame
5. Education:
   a. Provided learning opportunities to WG members to promote mapping expertise (LOINC panel building, CIMI & FHIR education by Susan Matney)
   b. Completed content for Education WG/Marisa Wilson (audience non-NI Faculty)
   c. Updated foundational slides for WG member use

RECENT AND UPCOMING PRESENTATIONS

1. WG priorities & accomplishments to LOINC Nursing Subcommittee (7-19-19)
2. N-PASS Submission & Content Request Process to LOINC Nursing Subcommittee (3-2-20)
3. North Dakota Center for Nursing Annual Conference (3-13-20)
4. Foundational Heuristics Document Creation to LOINC Nursing Subcommittee (5.3.20)

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

None

RECENT AND UPCOMING OTHER PRODUCTS

1. GU Model
2. Nursing Admission History
3. Falls Model
4. VTE Model
5. PAINAD Pain Scale
6. PIPP Pain Scale
7. NIPS Pain Scale (hope to be submitted by July)
8. rFLACC Pain Scale (hope to be submitted by July)
9. CNPI Pain Scale (hope to be submitted by July)
10. Explore appropriate pre-conference/conference opportunities for presentations (e.g. SINI)
11. Continue to monitor for opportunities to publish the work

eRepository

PROJECT TEAM

Leader

Lyn Hardy, PhD, RN, FAAN, Associate Professor of Clinical Practice; Director, Data Science, and Discovery, College of Nursing, The Ohio State University

PURPOSE

The purpose of this workgroup is to house exemplars of best practices, in a vendor-neutral way, to prevent the need to start from scratch with each EHR implementation. In addition aims to increase learning, sharing wisdom and lessons learned, create the ability to build upon prior generations, and prevent process redundancy

CURRENT ACTIVITIES

1. Continue platform development
   a. Repository is built on Drupal
   b. Work products are tagged to the assigned document type
   c. A public face was built with a navigational association to the "Resource Center"
   d. Work products are housed on a public server
2. Evaluation of repository methodology to include the use of repository software that would ease the repository development
   a. This software is open source but there is a cost to housing data within the University of Minnesota's ecosystem
3. Description and suggestion of copyright for work products not yet published to protect the intellectual property
4. Pilot submissions, Phase I and II is complete; site revisions being made post pilot
5. Development of submission guidelines to assist persons submitting work products to include items without difficulty

RECENT AND UPCOMING PRESENTATIONS

1. The eRepository Workgroup continues to emphasize the need for data sharing and has mentioned the work done and in progress at conferences such as MedInfo in Lyon, France

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

None at this point

RECENT AND UPCOMING OTHER PRODUCTS

1. Further development of repository site with easier access and public submission privileges
2. Development of training resource/guideline to assist individual submissions of work products
3. Encouragement for copyright protections
4. "Elevator speech" for individuals attending conferences (virtual or in person)

Mobile Health for Nursing

PROJECT TEAM

Co-Leaders

Melissa Breth, DNP, RN-BC, CPHIMS, Director, Clinical Informatics; Burwood Group, Inc

Christie Martin, MN, MPH, RN, PHN, LHIT-HP Registered Nurse, Abbott Northwestern Hospital, Allina Health Graduate Research Assistant, University of Minnesota School of Nursing

PURPOSE

Explore the use of mobile health (mHealth) data by nurses including both nursing-generated data and patient-generated data. Identify and support activities and resources to address unmet needs and create opportunities to utilize mHealth data within nursing workflows

CURRENT ACTIVITIES

1. Completed Systematic Review and submitted for publication
2. Obtained sample of data fields within a Korean health app to examine what is asked of patients, data collected, and potential role of the nurse
   a. Examine the role of the nurse in mobile health app development and deployment
   b. Explore mobile health data collection
      i. What data are collected?
      ii. How could nursing better utilize the data?
   c. Impact of COVID-19 on mobile health
      i. Access to care; Telehealth
      ii. Data available, collected, used, and examined

RECENT AND UPCOMING PRESENTATIONS

None

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

1. Martin, C. L., Bakker, C., Gao, G., Lee, K., Lee, M.A., Breth, M., … Janeway, L. (2020). What is the efficacy of mobile health interventions used to manage acute or chronic pain? A systematic review. Submitted for publication
2. Bakker, C., Gao, G., Janeway, L., Lee, M., Martin, C. L., Serna, M., ... Wyatt, T. H. (2019). What is the efficacy of mobile health interventions used to manage acute or chronic pain? A systematic review [CRD4202013059]. PROSPERO: International prospective register of systematic reviews. https://proxy.qualtrics.com/proxy/?url=https%3A%2F%2Fwww.crd.york.ac.uk%2Fprospero%2Fdisplay_record.php%3FID%3DCRD42020130591&token=jA%2BdgQPjGuCBHlmQEB0WFP3Os5BX%2Fc0nHVY41B6HyVQ%3D

RECENT AND UPCOMING OTHER PRODUCTS

None

Nursing Value

PROJECT TEAM

Co-Leaders

John Deckro, DNP, RN-BC, CPHIMS, RN Clinical Information Systems Coordinator, Providence VA Medical Center, VA Nursing Academic Partnership (VANAP) Faculty, Providence VAMC & Rhode Island College School of Nursing

Martin Michalowski, PhD, Assistant Professor, School of Nursing, University of Minnesota

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

CURRENT ACTIVITIES

1. Complete transitions of both a leadership and extending the breath of focus
2. Validate the fiscal contributions that nurses bring to health care continues to be of great importance
3. Especially in this current time as the world is faced with a pandemic for which there is not yet a cure or vaccine, traditional nursing values such as care have gained importance, recognition of informal measures of impact, and as essential to addressing wellbeing
4. Shift towards broadening the concepts of nursing value beyond financial
5. Include employing AI to discern evidence-based practices which contribute to the value of nursing and caring
6. Consider additional outcomes could include length-of-stay, mortality, complication rates, decreasing 30-day readmissions, spirituality, patient/family satisfaction, and workforce retention and wellbeing, including the Quadruple aim
7. Celebrate current workgroup members, and heartily invite past and new members to engage in the NKBDS Nursing Value Workgroup

Policy and Advocacy

PROJECT TEAM

Leader

Whende M. Carroll, MSN, RN-BC, Founder, Nurse Evolution

PURPOSE

To elevate the voice and visibility of each workgroup's nurse-led Big Data initiatives and recommend policy statements and advocacy to support the dissemination of leading-edge collateral and work products.

CURRENT ACTIVITIES

1. Name Change
   a. Implement full impact of workgroup name, formerly known as "Equip and Engage Nurses in Health IT Policy" to meet the information dissemination needs of the Nursing Knowledge Big Data Science (Big Data) initiative workgroups to also focus efforts on policy topics essential to the Big Data agenda, as well as offer advocacy support to any other Big Data workgroup to advance policy development and information dissemination of collateral and work products

2. Unique Nurse Identifier
   a. Continued engagement with the following organizations for advocacy of the Unique Nurse Identifier:
      i. American Medical Informatics Association (AMIA)
      ii. American Nurses Association (ANA)
      iii. Alliance for Nursing Informatics (ANI)
      iv. American Academy of Nursing (AAN)
      v. Healthcare Information and Management Systems Society (HIMSS)
      vi. National Council of State Boards of Nursing (NCSBN)
      vii. Office of the National Coordinator (ONC)
   b. Exploring proof-of-concept (POC) pilots with healthcare organizations and health IT systems vendors to determine the technical feasibility and benefits of using the unique nurse identifier. Three organizations and several vendors have expressed interest or are actively working on pilots
   c. Advance HIMSS blog published in September 2019 "Advocating for a unique nurse identifier". Link to blog: https://www.himss.org/news/health-impact-unique-identifiers-nursing-documentation
   d. Distribute the National Council of State Boards of Nursing (NCSBN) published an article in their "Leader to Leader" Fall 2019 newsletter about the use of the unique nurse identifier. The article was distributed to 14,000 recipients. Link to article: https://www.ncsbn.org/L2L_Fall2019.pdf
   e. Finalize policy statement to outline our recommendations for the Unique Nurse Identifier, and present for approval at the ANI Business Meeting in June 2020

3. Advocacy
   a. The workgroup developed a Frequently Asked Questions (FAQs) Document and distributed it to all workgroups for information about our name change and mission, definitions and how we will lend advocacy support
   b. Consult with Care Coordination Workgroup in October 2019 to discuss our advocacy support for drafting a policy statement to develop recommendations for a minimum data set, and advocate for the creation

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Policy and Advocacy

of a standardized list of data elements to support nurse-led care coordination/decision-making with a focus on selecting unique elements relevant to the patient/person plan of care, support their purpose of identifying nurse-sensitive shareable and comparable data to support care coordination activities and improve patient outcomes

4. Social Media Strategy
   a. Developed a Social Media-Digital Strategy Guide to equip members with the resources and knowledge to inform the public and disseminate our collateral and work products on multiple social media platforms

RECENT AND UPCOMING PRESENTATIONS

1. Poster titled "A Call to Adopt a Unique Nurse Identifier" at the HIMSS20 Nursing Informatics Symposium in March 2020. The poster is now available at: https://www.himssconference.org/sites/himssconference/files/u241/A-National-Nurse-Identifier-Updates-from-the-NKBD-Workgroup.pdf

2. [A workgroup member was presenting a poster at the Summer Institute in Nursing Informatics (SINI). Topic: Unique Nurse Identifier. This event has been cancelled.]

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

1. Sensmeier, J., Androwich, I. M., Baernholdt, M., Carroll, W.M., Fields, W., Fong, V., Murphy, J., Omery, A., and Rajwany, N. (2019). Demonstrating the value of nursing care through use of a unique nurse identifier. Online Journal of Nursing Informatics (OJNI), 23(2).

   Available at: https://www.himss.org/library/demonstrating-value-nursing-care-through-use-unique-nurse-identifier

2. Textbook (includes Case Study about the Nursing Big Data initiative and annual conference):

   Carroll, W.M. (Ed.). (2021). Emerging Technologies for Nurses: Implications for Practice (1st ed.). Springer Publishing Company: New York City. ISBN: 9780826146496

   Link to textbook: https://www.springerpub.com/emerging-technologies-for-nurses-9780826146496.html

RECENT AND UPCOMING OTHER PRODUCTS

1. The Unique Nurse Identifier policy statement will be presented for approval at the ANI Business Meeting on 2020. We will also distribute this document to other workgroups to use as an example for their policy statements

2. Publication submission in 2020: ANA American Nurse article – Topic: Unique Nurse Identifier

3. Poster submission in 2020: American Academy of Nursing 2020 Conference – Topic: Unique Nurse Identifier

4. Development of a policy and advocacy toolkit to serve as a toolkit to help other workgroups advocate for their work products.

5. Continue advocacy on the unique nurse identifier with healthcare organizations and health IT systems vendor partners

Social and Behavioral Determinants of Health

PROJECT TEAM

Co-Leaders

Susan C. Hull, MSN, RN-BC, NEA-BC, FAMIA, Chief Health Information Officer CareLoop

Erin D. Maughan, PhD, RN, APHN-BC, FNASN, FAAN, Director of Research National Association of School Nurses

PURPOSE

To support the inclusion, interoperability and data exchange of Social Determinants of Health (SDOH) data in electronic health records, personal and m-health tools, community and public health portals across care settings, and empower nurses (practice, education, research, policy) to use SDOH data as context for planning and evaluating care

CURRENT ACTIVITIES

1. Advocacy and recommendations for inclusion of SBDOH in the 2030 Future of Nursing report, focusing on:
   a. The role of the nurse and the difference between social needs and social determinants of health, SBDOH as social vital signs
   b. The inclusion of standardized terminologies for collecting, measuring and reporting data use regarding SBDOH (Erin Maughan, Susan Hull, Sarah DeSilvey, Joyce Sensemier)

2. Outreach to the current Future of Nursing Campaign for Action to discuss health equity toolkit-and possible addendum to include data and a more cohesive approach of SBDOH (Erin Maughan, on behalf of group)

3. Participation to include SBDOH in new ANCC new Essentials, https://www.aacnnursing.org/About-AACN/AACN-Governance/Committees-and-Task-Forces/Essentials (Marisa Wilson)

4. Participation in UCSF Siren sponsored Gravity Project, an HL7 FHIR Accelerator, Health Coding Collaborative consensus effort on 3 national standards for food security, housing instability, and transportation, https://www.hl7.org/gravity/ (Sarah DeSilvey, Ruth Wetta, Sharon Hewner, and Lynn Choromanski)

5. Participation in National Alliance to Impact Social Determinants of Health, including Technology Workgroup (Susan Hull)

RECENT AND UPCOMING PRESENTATIONS

1. Wetta RE, Severin RD. (2020). An Evidence-based Strategy to Achieve Equivalency and Interoperability for Determinants of Health Assessment, Storage, Exchange and Use. Presented at the AMIA Virtual Clinical Informatics Conference, May 20, 2020

2. Hewner, S. (2019, Sept). Role of Health IT to Improve Care Transitions: Presenting results of the coordinating transitions project and addressing the role of clinical decision support tools to improve the quality of transitions for adults with multiple chronic diseases. Invited panelist in the AHRQ National Web Conference

3. Maughan, E.D. (2019, October). School Nurses: Data driven youth experts. Presentation at Robert Wood Johnson Foundation-Campaign for Action. New Orleans, LA

4. Wetta, R.E., Severin, R. (2019) Evidence-based strategy to achieve equivalency in the assessment, storage and use of Social and Behavioral Determinants of Health (SBDH). Presented at the proceedings of the LOINC Spring Clinical Conference, February 19, 2019, Salt Lake City, Utah

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Social and Behavioral Determinants of Health

5. Wetta, R.E., Severin, R. (2019) Evidence-based strategy to achieve equivalency in the assessment, storage and use of Social and Behavioral Determinants of Health (SBDH). Presented at the proceedings of the LOINC Nursing Subcommittee meeting, March 4, 2019, online webinar

6. Wetta, R.E., Severin, R., Dodd, D. D. (2019) Strategies to Address Complexities Associated with the Assessment, Storage and Use of Social-Behavioral Determinants of Health in the Electronic Health Record. Presented at the proceedings of the Summer Institute In Nursing Informatics Conference, July 17, 2019, Baltimore, Maryland

7. Wetta, R.E. (2019) Methodology to Address Complexities with the Assessment, Storage and Use of Social-Behavioral Determinants of Health in the Electronic Health Record. Presented at the Mid America Resource Council (MARC) Data Collaborative meeting, August 14, 2019, Kansas City, Missouri

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

1. Jeffery, A.D., Hewner, S., Pruinelli, L., Lekan, D., Lee, M., Gao, G., Holbrook, L., Sylvia, M. (2019). Risk prediction and segmentation models used in the U.S. for assessing risk in whole populations: a critical literature review with implications for population health nursing. JAMIA Open, 0(0): 1–10, doi: 10.1093/jamiaopen/ooy053

2. Maughan, E.D. (2020, March). Using data and research to heal the future. NASN School Nurse, 35(2), 82-84. https://doi.org/10.1177/1942602X19898835

3. McLean E., Bagchi-Sen, S., Atkinson, J., Ravenscroft, J., Hewner, S. Schindel, A. (2019). Country-level analysis of household fuel transitions. World Development 114 (2): 267-280 https://doi.org/10.1016/j.worlddev.2018.10.006

4. Sullivan, S. S., Hewner, S., Chandola, V., & Westra, B. (2019) A Predictive Model to Identify Mortality Risk in Homebound Older Adults Using Routinely Collected Nursing Data. Nursing Research 68 (2): 156-166. https://www.ncbi.nlm.nih.gov/pubmed/30531348

5. Wetta, R.E., Severin, R.D., Gruhler, H. (Oct 29, 2019) Epub ahead of print. An Evidence-based Strategy to Achieve Equivalency and Interoperability for Social-Behavioral Determinants of Health Assessment, Storage and Use. doi: 10.1177/1460458219882265

6. Wetta RE, Severin R, Gruhler H, Lewis, N. (2019) Capturing Health Literacy Assessment in the Electronic Health Record through Evidence-Based Concept Creation: A Review of the Literature and Recommendations for Action. Health Informatics Journal, 25(3) 1025–1037

7. Wetta RE, Severin RD, Jarrett L. (under review – 2019). System Dynamics Analysis of Complexities Associated with Storing Determinants of Health in the Electronic Health Record. Submitted December 14, 2019 to the American Journal of Public Health. [AJPH-201928847]

RECENT AND UPCOMING OTHER PRODUCTS

1. Develop a toolkit for school nurses to address social determinants of health

Transforming Documentation

PROJECT TEAM

Co-Leaders

David Boyd, DNP, RN, CNS, RN-BC,
Regional Director - Nursing Informatics,
Kaiser Permanente

Shannon L. Hulett, DNP, RN, CNL,
Manager - Nursing Technology,
Gundersen Health System

PURPOSE

To explore ways to decrease the nursing documentation burden and serve up the information already in the electronic health record at the right time in the workflow to support evidence-based and personalized care; elevate purpose-driven, role-based, patient-centric, evidence-informed documentation transformation to capture nurse observations and interventions and drive purposeful secondary-use & precision nursing; and engage in transformation that enhanced data utilization to drive and measure improvement in patient outcomes and illuminate nursing's value and contribution in healthcare

The Admission History Cross-WG Task Force is charged with defining a model for Nursing Admission History for the adult patient admitted to an acute care facility for medical/surgical care. The outputs will guide continued work in defining Nursing Admission History and Screening for other patients/settings

CURRENT ACTIVITIES

1. Finalized foundational Guiding Principles & process documentation for Admission History WG
2. Developed & reached consensus/approval on a clinical content format/ worksheet for hand-off to Encoding/Modeling group for terminology mapping
3. Completed and forwarded finalized worksheet for Regulatory review by HCA Subject Matter Expert & The Joint Commission. Team is reviewing post-pandemic handoff timing to Encoding/Modeling WG
4. Drafted communication plan for content and mapping dissemination and publication
5. Drafted publication for leadership journal on admission history WG purpose & process
6. Epic plans to incorporate content in Foundation system for customer use
7. Next steps for post-pandemic WG activities: Can documentation burden reductions for pandemic response be maintained? Focus on new standard content/workflow – e.g. pediatric admission? Move to new focus on cognitive burden/decision support/predictive analytics (beyond the EHR 'haircuts')?

RECENT AND UPCOMING PRESENTATIONS

1. P. Sengstack, NENIC Annual Symposium, April 2019: Think Globally, Act Locally: Reducing the Burden of Documentation in the EHR
2. S. Hulett, Epic XGM May 2019 Nursing Leadership Collaborative/Doc Burden: On the Balance Beam
3. J. Englebright, SINI July 2019: Reducing documentation burden: Results from the front line
4. S. Hulett, SINI July 2019: Electronic Health Record Remodeling: Gundersen Health System's Nursing Journey
5. R. Freeman, SINI July 2019: Documentation Burden: A View from the Top
6. B. Adrian, 2020 HIMSS Nursing Informatics Symposium: Project Joy-Giving Time Back to Nurses by Reducing Documentation Burden

RECENT AND UPCOMING OTHER PRODUCTS

None

Care Coordination

PROJECT TEAM

Co-Leaders

Mary Hook, PhD, RN-BC, Research Scientist, Advocate Aurora Health Care

Lori Popejoy, PhD, RN, FAAN, Associate Professor, Helen E. Nahm Endowed Professor, University of Missouri

Members
Mari Akre

Carol Reynold Geary

Sharon Hewner

Laura Heerman Langford

Jeff Morse

Denise Nelson

Lana Pasek

Suzanne Sullivan

PURPOSE

To identify nursing-sensitive essential shareable/exchangeable and comparable data elements to support care coordination activities and improve patient outcomes; Identify gaps/missing information needed to individualize care (e.g. patient preferences, goals, strengths, ability to self-manage, etc.)

ANNUAL GOALS

1. Conducting a descriptive study to identify information that is gathered and used to support care coordination in ambulatory settings
   a. Study Aims: Use a cross-sectional survey methodology to describe: 1) characteristics of professional care coordinators, 2) what /where information is gathered, 3) what/when information is used in the care coordination process
   b. Sample: Professional care coordinators who work in ambulatory settings (goal = 200)
   c. Methodology: Subjects will be invited to participate in the study via an e-mail message containing a brief description of the study, their right to choose to participate, and lack of consequences if they choose not to participate. The email will contain a link to the google docs survey
   d. Development: Q1-2 2020
   e. IRB Submission: August/Sept
   f. Recruitment: Q4 2020 - distribute survey using a variety of sources including NBDS Workgroup and larger group personal contacts and professional organizations to reach sample
   g. Analysis: Q4 2020 – Q1 2021 to identify similarities and differences
   h. Dissemination: Q1 2020
2. Future: To identify specific data elements used by professional nurse care coordinators to support the exchange of vital information between all stakeholders [future]

Context of Care

PROJECT TEAM

Co-Leaders

Amber Oliver, DNP, RN-BC, Director Clinical Informatics, Sanford Health

Heather Shirk, MSN, RN, Clinical Informatics Nurse, WellSpan Health

Members

Laura Block

Lana Pasek

Piper Ranallo

Cheryl Wagner

PURPOSE

To demonstrate sharable and comparable nurse data across the care continuum by capturing nursing "big data" in the Nursing Management Minimum Data Set (NMMDS), the Nursing Minimum Data Set (NMDS) and the Nursing Knowledge: Big Data Science Conference Nursing Value Data Set (NVDS) to increase nurse data usability, provide patient, family and community centric data and, fortify data generated by nurses, about nurses and nursing care across the care continuum and across care transitions in all settings where nurses provide care

ANNUAL GOAL

1. Work with the SDOH group to promote #SocialVitalSigns & Continuity of Care MDS
   a. Ongoing collaboration with SDOH identifying potential Social Vital Signs vendor engagement & pilot organization
2. Work with pilot healthcare organization to build unidirectional interface from EPIC Acute Care to PCC LTC including the following data for phase 1:
   – Demographics
   – DNR Status
   – Allergies
   – Nursing Problem & Medical Diagnosis List
   – Discharge Medication List (after discharge Medication Reconciliation)
   a. Phase 2 project to explore bidirectional interface & additional location data sharing
3. Complete literature Review for Mental/Behavioral Health Taxonomy Selection.
   a. Initial Literature Review completed November 2019 and remains ongoing
4. Review of Continuity of Care (Intake/Discharge Information) for SDOH & Mental/Behavioral Health
   a. Initial Information Model & Interoperability Design completed
   b. Proof of Concept data exchange of patient demographics, allergies, meds & problem list successfully completed from data aggregation level of data repository without mapping at a discrete field level
   c. Actively working on cross vendor export & import of Facesheet, Diagnosis List with ICD10 codes, awaiting initial data extract
   d. Received approval for expansion of Proof of Concept work to include SDOH, Infection Control Flags, Care Plan NNN, Treatments & Activities Record, Discharge Summary, and last Head to Toe Assessment data. Will be built as a cross vendor export to import data exchange Acute to Post Acute
5. Apply findings to taxonomy design for Danger to Self/Others Plan of Care
   a. Ongoing goal for 2020

Data Science and Clinical Analytics

PROJECT TEAM

Co-Leaders

Steven G. Johnson, PhD, Assistant Professor, Institute for Health Informatics, University of Minnesota

Lisiane Pruinelli, PhD, RN, FAMIA, Assistant Professor, School of Nursing, University of Minnesota

Members

Bonnie Adrian

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Jung In Park

Anita Reger

Jethrone Role

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Max Topaz

Ann Wieben

Dana Womack

PURPOSE

To apply data science and clinical analytic methods, incorporating validated information models derived from diverse sources of health care data to address nurse-sensitive clinical research questions that have the potential to inform and educate nursing and multidisciplinary approaches for better patient care and outcomes

ANNUAL GOALS

1. Nursing Data Science Year in Review target January 2021 for next publication, includes a librarian who helps to perform the search strategy, and will rotate first authors, providing the opportunity to everyone lead a manuscript
2. Data science and clinical analytics education, best practices and projects
   a. Data Science infrastructure and education resources
      i. Continue building cloud environment and expanding use
      ii. Submit grant and funding opportunities to support workgroup activities, such as PCORI, RWJF
      iii. Incorporate MIMIC OMOP data model and tools to show nursing relevant research and data
3. Projects
   a. Predicting ventilator associated pneumonia (VAP) in the ICU
   b. Viral pneumonia endotypes
4. Explore NCATS N3C COVID Database
   a. Establish Nursing Task Group under N3C to reinforce nursing visibility and data representativeness
5. Establish resources for nurses and nursing leaders to support data science for research, quality improvement and clinical analytics
   a. Explore another workshop options, such as for NKBDS 2021 and Medinfo 2021
      i. Deeper dive into one part of life cycle rather than an overall workshop
      ii. Data exploration and team science is one of the topics where people need the most
   b. Health System or company nurse centered data science success stories
      i. Show examples of benefit of data science in Nursing
      ii. Demonstrate why anyone should care about data science. What can it do for you?
      iii. Explore Award and showcase projects
         1. Criteria for entry, publish paper highlighting, data challenge
         2. Nursing data science success stories
         3. UCHealth success story to share
6. Recruit new members
   a. Target members who can add skills, experience, projects to the team, such as pneumonia or VAP clinician
   b. Reach out to Grad students and PostDocs interested in learning more about data science and clinical analytics
   c. Changing meeting time if the current one doesn't work the best

Education

PROJECT TEAM

Co-Leaders

Marisa L. Wilson, DNSc, MHSc, RN-BC, CPHIMS, FAMIA, FAAN, Associate Professor. Interim Department Chair: Family, Community and Health Systems, Health Systems Leadership Pathway Director, Specialty Track Coordinator, MSN Nursing Informatics, The University of Alabama at Birmingham School of Nursing

Dorcas Kunkel, DNP, RN, CNE, PHNA-BC, CPHIMS, Assistant Professor, Nursing Programs, Keigwin School of Nursing, Jacksonville University

Members

Deb Adams
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Juliana Brixey
Jane Carrington
Heather Carter-Templeton
Cathy Fant
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Susan Newbold
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Mary Jane Rivard
Denise Sandell
Mari Tietze
Donni Toth
Marie Vanderkooi
Gwen Verchota
Cheryl Wagner
Ann Weiben
Dongjuan Xu

PURPOSE

To ensure a nursing workforce capable of using digital technology to innovate, to create efficiencies, and to generate knowledge through collaborating with other workgroups and organizations and developing tools and strategies and disseminate

ANNUAL GOALS

1. Substantiate and disseminate through literature synthesis the existence of an informatics competency gap among nursing faculty which is key data to inform this workgroup's efforts given the mandate to strengthen the domain
2. Evaluate and recommend competency self-assessment tools for faculty
3. Collaborate with the leadership of the Canadian Association of Schools of Nursing (CASN) to understand lessons learned from their initiatives for workforce and faculty development
4. Synthesize from each NKBDSI Workgroup the teachable content packets that they want to disseminate to ensure important concepts are not overlooked
5. Continue to coordinate with other organizations (AACN, AMIA, ANIA, HIMSS, QSEN, NLN, TIGER, CAHIIM) overseeing aspects of competency, accreditation, and professional development so that joint learning activities can occur to reach the maximum audience
6. Develop an evaluation plan for the interventions using evidence informed models and the experiences of CASN and other international nursing organizations

Encoding and Modeling

PROJECT TEAM

Co-Leaders

Tess Settergren, MHA, MA, RN-BC, Independent

Stephanie Hartleben, RN-BC, MSN, MHA, Senior Principal, Clinical Informatics, Elsevier Clinical Solutions

Members

Mischa Adams
Samira Ali
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Kay Lytle
Chris Macintosh
Susan Matney
Luz Ortiz-Corral
Roberta Severin
Christine Spisla
Darinda Sutton
Rachel Tharp
Mariaelena Thiodeaux
Cyndalynn Tilley

Ad Hoc members
(call upon as needed)

Mari Akre
Kathy Dudding
Chad Fairfield
Mary Hook
Marisa Wilson
Joe Zillmer

PURPOSE

To curate LOINC and SNOMED-CT mappings for nursing-specific value sets, submit requests for new codes where appropriate, and incorporate the content and standards into a framework and repository for dissemination

ANNUAL GOALS

1. Complete 2020 projects:
   a. Publish Basic Physiologic Assessment in VSAC
   b. Pain assessment tools in LOINC
   c. Pain interventions mapping in context of FHIR procedure resource
2. Continue process/heuristics development in collaboration with KM WG
3. Partner with Knowledge Modeling WG to encode/map knowledge models:
   a. Genitourinary
   b. Falls
   c. VTE
   d. Nursing History/Screening
4. Harmonize content across NKBDS work groups and other entities
5. Increase education/awareness:
   a. Provide learning opportunities to WG members
      i. Structure: Learn CEM model base types & FHIR templates
         1. Start with observations (e.g. assertion of presence)
         2. Develop processes to map interventions & outcomes
      ii. Promote mapping expertise
   b. LOINC Conference presentation: "Sharing Your Pain" (October 16, 2020)
   c. Submit abstract to 2021 SINI
6. Explore possible funding sources to expedite the projects
7. Collaborate with EHR vendors on data standards implementation
   a. Determine implementation 'owners'
8. Publish copyrighted work artifacts on NKBDS LinkedIn site
   a. Processes & heuristics—creating the models, terminology mapping, FHIR resources
   b. Create style guide: "How to use these models to standardize your documentation"—with vendor collaboration

eRepository

PROJECT TEAM
Co-Leaders
Lyn Hardy, PhD, RN, FAAN, Associate Professor, Director, Data Science and Discovery The Ohio State University, College of Nursing

Members
Maribeth Slebodnik

Charlotte Weaver

Bonnie Westra

PURPOSE
To house exemplars of best practices, in a vendor-neutral way, to prevent the need to start from scratch with each EHR implementation; increase learning, sharing wisdom and lessons learned across workgroups and in the broader community; create the ability to build upon prior generations; and prevent process redundancy

ANNUAL GOALS
1. Obtain feedback on usability of the eRepository and continue with further development
2. Create an education video to (E3)
   a. Explain the site
   b. Encourage contributions
   c. Establish intellectual property protections
3. Explore the ability of future storage capabilities related to UMN resources
4. Expand the workgroup to include representatives of other workgroups to encourage uploading their work products
5. Expand use of the eRepository through marketing to reach
   a. Dean's group
   b. Associations
6. Encourage idividuals wishing to place their work product in the repository to copyright their information using Creative Commons

Knowledge Modeling

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PURPOSE
To validate previously developed information models from flowsheet data to extend national standards with nurse-sensitive data, continuously improve and adapt knowledge model validation and creation from flowsheet data and other nurse-sensitive information, and harmonize nursing data standards across workgroups

ANNUAL GOALS
1. Submit publication on Fall Prevention Information Model
2. Post Fall Prevention Information Model in the data repository and publicize availability and use
3. Develop a process to disseminate and publicize materials and resources using social media with standardized messages
4. Complete validation of the VTE Knowledge Model
5. Start the validation of the Admission History and Screening Information Model
6. Collaborate with Encoding & Modeling Workgroup on the Fall Prevention Information Model coding steps
7. Proposal to harmonize nurse-sensitive data elements across workgroups.
   a. Notifiy Workgroups about the opportunity for standardization and request for sharing.
   b. Establish a platform (i.e. Google spreadsheet) for sharing and comparing.
   c. Involve terminology experts to recommend best practices for consistent standardization across projects.

Mobile Health for Nursing

PROJECT TEAM

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PURPOSE

To explore the use of mobile health (mHealth) data by nurses including both nursing-generated data and patient-generated data and identify and support activities and resources to address unmet needs and create opportunities to utilize mHealth data within nursing workflows

ANNUAL GOALS

1. Promote Nursing involvement in the creation, storage, and exchange of mobile health data
   a. Develop and publish a white paper on nurse-participation on mobile health application development teams
   b. Support and encourage nurse-involvement in mHealth R & D teams that build infrastructure and backend databases to store and retrieve valuable content
   c. Promote participation in the mHealth Institute among mHealth group funded by NIH
2. Survey US nurses to determine use of mobile health apps and associated tools in telehealth related to COVID-19 purposes
   a. Survey US nurses to determine how mobile health apps, including the use of biometrics/wearables, are used for remote patient monitoring for COVID purposes?

Nursing Value

PROJECT TEAM

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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

ANNUAL GOALS

1. Recruit members to the group with a variety of expertise, including artificial intelligence and data science
2. Study the appropriateness of existing value model(s) to capture expanded notions of value as defined by the group
3. Find relevant data sources to use in development and validation of nursing value model

Policy and Advocacy

PROJECT TEAM

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PURPOSE

To elevate the voice and visibility of each workgroup's nurse-led Big Data initiatives BY recommending policy statements and advocacy to support the dissemination of leading-edge collateral and work products

ANNUAL GOALS

To advance Unique Nurse Identifier by:

1. Policy Statement Dissemination
2. ANI Sponsored Webinar
3. ANA American Nurse Article – Topic: Unique Nurse Identifier Nursing Knowledge: Big Data Science – Policy and Advocacy Toolkit
4. Unique Nurse Identifier – Presentations, posters, webinars at virtual and live nursing conferences and events in 2020-2021:
   a. HIMSS21 Global Conference. August 2021
   b. NCSBN 2021 Annual Conference, Winter 2021
   c. ANIA 2021 Annual Conference, Spring 2021
   d. NI2021 Annual Conference, Summer 2021
5. Unique Nurse Identifier – FAQ Document with Infographic
6. Advocacy Summary/Statement – Telehealth: Data empowerment for Patient access, Integration/Interoperability, Reimbursement, Consumer incentives, and Measuring outcomes
7. Collaboration with Nurse Value Workgroup

Social and Behavioral Determinants of Health

PROJECT TEAM

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PURPOSE

To support the inclusion of Social and Behavioral Determinants of Health (SBDOH) in electronic health records and digital health tools to empower nurses to partner with patients, families and communities for whole person care

ANNUAL GOALS

1. Partner in conducting pilots and projects to contribute data to the Simplified Omaha System Terms in MyStrengths+MyHealth in partnership with Karen A. Monsen, PhD, RN, FAMIA, FAAN and Robin R. Austin, PhD, DNP, RN-BC
2. Contribute to the Coordination of Nurse Sensitive Data elements across workgroups
3. Continue participation in the Gravity Project including development and ballot an HL7 FHIR SDOH Implementation Guide
4. Continue advocacy activities for inclusion of SBDOH in the 2030 Future of Nursing report and future activities. Focusing on the role of the nurse and the difference between social needs and social determinants of health, social vital signs, and the inclusion of standardized terminologies for collecting, measuring and reporting data use

Transforming Documentation

PROJECT TEAM

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PURPOSE

To explore ways to decrease the nursing documentation burden and serve up the information already in the electronic health record at the right time in the workflow to support evidence-based and personalized care, elevate purpose-driven, role-based, patient-centric, evidence-informed documentation transformation to capture nurse observations and interventions and drive purposeful secondary-use & precision nursing, and enhance data utilization to drive and measure improvement in patient outcomes and illuminate nursing's value and contribution in healthcare

The Admission History Cross-WG Task Force is charged with defining a model for Nursing Admission History for the adult patient admitted to an acute care facility for medical/surgical care. The outputs will provide the foundation for continued work in defining Nursing Admission History for other patient populations and care settings

ANNUAL GOALS

1. Continue monthly WG meetings
2. Deliver Nursing Admission history dataset to Information Modeling/Encoding & Modeling WGs
3. Develop 'How To' dissemination/implementation guide/toolkit for the work
4. Establish plan for next dataset for burden reduction and plan for data harmonization (e.g. pediatric admission)
5. Engage at least 2 major EHR vendors regarding the Nursing Admission history dataset and integration plans with their core software (offering to existing and new customers)

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