

2021

NURSING KNOWLEDGE: BIG DATA SCIENCE

CONFERENCE PROCEEDINGS

JUNE 9-11, 2021

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Introduction to the 2021 Nursing Knowledge: Big Data Science Proceedings

For the 9th year, the Nursing Knowledge: Big Data Science Conference (NKBDS) was convened to support our commitment of lifting up the NKBDS Initiative’s vision and transformative work to advance better health outcomes resulting from the standardization and integration of nursing data, information, and knowledge. This year, as a result of several changes due to the COVID-19 pandemic, the conference was held online over three days, June 09-11, 2021. The online format followed a think-tank style; participants were motivated to discuss, think, and take action to move the Initiative’s vision forward.

Congruent with previous proceedings, this includes conference summary, workgroup reports of achievement for the year 2020-2021, and workgroup action plans for the year 2021-2022. We acknowledge our outstanding number of attendees, totaling 188 attendees from the United States, Canada, Finland, and Thailand, during three days of intensive learning and knowledge sharing.

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

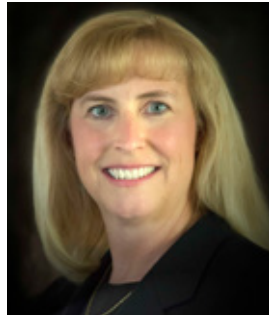
<https://www.linkedin.com/groups/12096820>

2022 Conference Dates

Nursing Knowledge: Big Data Science Conference will be held online June 8-10, 2022

PRE-CONFERENCE SUMMARY

The pre-conference on June 09 hosted five tracks that were delivered in a workshop format. These tracks covered a variety of topics and aimed to focus on content of interest to the participants and generate knowledge to foster participants' understanding of current issues, skills, and resources available to the nursing informatics community. Every track devoted three hours to content and exercises. A description of each Track is provided below.



TRACK 1

Nursing on FHIR: Conceptual Definitions and Hands-on Tutorial

This track was led by: Laura Heermann Langford PhD, RN, FAMIA, Intermountain Healthcare, Salt Lake City UT; University of Utah College of Nursing, Salt Lake City UT, Russell Leftwich, MD, FAMIA, Senior Clinical Advisor, Interoperability for InterSystems and Adjunct Assistant Professor of Biomedical Informatics at Vanderbilt University School of Medicine; and James C. McClay, MD, FACEP, FAMIA, Associate Professor for

the Department of Emergency Medicine at the University of Nebraska Medical Center. The track was designed to educate attendees about HL7 FHIR and tools available to access, review, and provide feedback to the HL7 FHIR team regarding the evolving HL7 FHIR standard. It was also intended to make the audience aware of the potential of FHIR for innovation in their organizations. The faculty provided lectures describing HL7 FHIR history, background, and fundamental principles. Examples of applications using the SMART on FHIR platform were also discussed. The new federal requirements for FHIR APIs in EHR systems were outlined. After this initial overview of FHIR, the attendees were guided through using online tools to examine HL7 FHIR Resources (the basic building blocks of FHIR) and build basic common FHIR Profiles (implementation guides for specific use cases).



TRACK 2

Data Validation and Clinical Documentation Accuracy: The Process to Use "Good" Data for Clinical Applications and Infrastructure?

This track was led by Rebecca Freeman, PhD, RN, FAAN, FNAP, Vice President of Health Informatics for the University of Vermont Health Network; and Jane Englebright, PhD, RN, FAAN, Chief Nurse Executive and Senior Vice President for HCA Healthcare. This track reviewed common pitfalls in reusing clinical documentation data for performance management. The issues are widespread, spanning education (in technology and data literacy), governance, semantic interoperability, the standardization of approach to documentation and coding, and others. This session discussed the promise of the reuse of clinical data, and offered suggestions for closing gaps.



TRACK 3

Hands-on Data Science

This track was led by Steve Johnson, PhD, FAMIA, Assistant Professor, Institute for Health Informatics and Scientific Director, CTSI Clinical Informatics Services, University of Minnesota; and Alvin Jeffrey, PhD, RN-BC, CCRN-K, FNP-BC, Assistant Professor of Nursing & Biomedical Informatics, Vanderbilt University; Nurse Scientist, U.S. Department of Veterans Affairs. This track aimed to address the following questions: Machine learning, deep learning and recurrent neural networks? What does it all mean? In this workshop, participants conducted an exploration of various types of machine learning techniques. Through a combination of presentations and hands-on exercises, participants learned about the most common machine learning approaches, their advantages, disadvantages and where they can best be applied in healthcare settings.



TRACK 4

Interprofessional Core Data and its Potential for Team Care

This track led by Connie White Delaney, PhD, RN, FAAN, FACMI, FNAP, Professor & Dean, University of Minnesota School of Nursing; and Kristen K. Will, PhD, MHPE, PA-C, Director, Clinical Programs and Accreditation; Clinical Associate Professor, College of Health Solutions, Arizona State University. This 3-hour interactive track focused on the utility and efficacy of utilizing Interprofessional core data sets and the electronic health records to study team-based care and allowed the participant to apply the knowledge gained during the track to apply the concepts and develop a strategy to leverage big data in order to better study teams and their impact on desired patient outcomes. Participants also discussed and reflected upon the implications for future research to study teams utilizing a big data approach.





TRACK 5

Transforming Documentation – Admission history and Nursing Notes Release

The track was led by Rebecca Freeman, PhD, RN, FAAN, FNAP, Vice President of Health Informatics for the University of Vermont Health Network; Jane Englebright, PhD, RN, FAAN, Chief Nurse Executive and Senior Vice President for HCA Healthcare; and David L. Boyd, DNP, RN, CNS, CPHIMS, RN-BC, Regional Director – Nursing Informatics, Kaiser Permanente



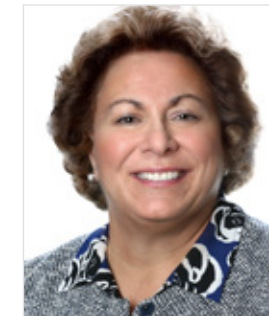
* Patient Care Services – Northern California. This track discussed the current imperatives driving the need for improved nursing documentation. The track’s leaders focused on the impact of regulations on the release of nursing to patients, evaluating the consequences of transparency on nursing documentation. It also focused on the national movement towards a standardized nursing

assessment, to reduce documentation burden. Track’s leaders highlighted lessons learned and opportunities for advancement; and also employed breakout groups to solicit feedback on how to create successful national initiatives for standardization.

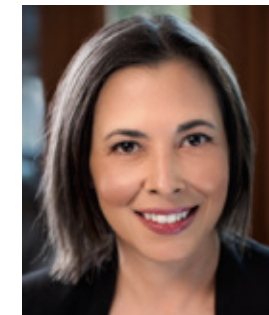
CONFERENCE SUMMARY



The main conference was opened by the keynote “Five Ways Big Data is Changing Nursing” delivered by Molly K. McCarthy MBA, RN-BC, Managing Director, Health Providers and Plans, Microsoft. Ms. McCarthy brought her 26-years of experience in the health and technology industries, showing her passion on uniting technology, clinicians and patients to improve care delivery, safety, and outcomes. Ms. McCarthy emphasized the massive and increasing open-source data to support and drive discovery of artificial intelligence. Ms. McCarthy highlighted that to move forward, healthcare will need to focus on the quintuple aim, adding the “techQuity” to the already quadruple aim of better outcomes, lower costs, improved patient experiences, and improved clinician experiences. Responsible artificial intelligence and considering ethical aspects for research and practice will be drivers for better health care. And nurses are well positioned to drive this change, as drivers of change in healthcare and well-aligned with the Nursing Knowledge Big Data Science Framework.



A reactor panel with Rebecca Freeman, PhD, RN, FAAN, FNAP and three experts from different perspectives joined to discuss and challenge the future of nursing based on the keynote speech. The panel included Judy Murphy RN, FACMI, LFHIMSS, FAAN, Nurse Executive, Health IT Leader; Whende M. Carroll, MSN, RN-BC, FHIMSS, Nurse Informacist Specialist, Contigo Health; and Martin Michalowski, PhD, FAMIA, Assistant Professor, School of Nursing University of Minnesota. They were challenged to think how nurses are changing their roles with artificial intelligence and emerging technology, bias and flows around artificial intelligence development, and also how



we nurses do as a society. More hands-on education is needed, where students are exposed to decision-making with computer science concepts and solutions, and be able to decide when a model is good or bad, understand basic model validity metrics, what and how better manage the data they collect. To achieve that, leadership knowledge and understanding on how to disseminate artificial intelligence and other technologies through nurses’ different levels of practice and education is paramount.

The conference brought together the 10 NKBDS workgroups. They reported their achievements and discussed priorities for the upcoming year. A fully detailed workgroup report and action plan for each workgroup are published in this proceeding. The workgroup leaders discussed cross collaboration, overlap, and what is missing to meet the initiative vision of sharable and comparable nursing data, always encompassing current policies, and national and international directions of nursing as a profession. They emphasized the need to educate nurses in practice, why collect data, document, and why use the unique nurse identifier. How to incorporate knowledge into faculty teaching was a frequent topic of discussion across all workgroups. They question how to implement what workgroups are creating and matters to nurses. They point this as the main current gap. Again, workgroup leaders discussed how to coordinate nurses' voice to be heard.

The conference also showcased the Nursing Big Data eRepository. Connie White Delaney, PhD, RN, FAAN, FACMI, FNAP, Professor and Dean School of Nursing University of Minnesota; Charlotte Weaver, PhD, RN, MSPH, and James Pfankuch presented the background, rationale and demonstrated the website, and how to explore the resources available. The eRepository goal is to build a user-friendly platform and process, where excellent resources, including historical documents, are available to everyone. Other options to disseminate knowledge generated by workgroups would be the creation of YouTube big data channel, podcasts, nursing big data branding for additional products, and a triage process for meaningful dissemination.

NKBDS STEERING COMMITTEE

Connie W. Delaney

(co-chair), PhD, RN, FAAN, FACMI, FNAP, Professor & Dean, University of Minnesota School of Nursing, Minneapolis, MN

Rebecca Freeman

(co-chair), PhD, RN, FAAN, FNAP, Vice President of Health Informatics for the University of Vermont Health Network, VT

Lisiane Pruinelli

(co-chair), PhD, RN, FAMI, Assistant Professor, University of Minnesota School of Nursing, Minneapolis, MN

Christel Anderson

(Member), MA, Vice President, Informatics, HIMSS, Chicago, IL

Jane Englebright

(Member), PhD, RN, FAAN, Chief Nurse Executive and Senior Vice President for HCA Healthcare, Frankil, TN

Alvin Jeffrey

(Member), PhD, RN-BC, CCRN-K, FNP-BC, Assistant Professor of Nursing & Biomedical Informatics, Vanderbilt University; Nurse Scientist, U.S. Department of Veterans Affairs, Nashville, TN

Laura Heermann Langford

(Member), PhD, RN, FAMI, Intermountain Healthcare, Salt Lake City UT; University of Utah College of Nursing, Salt Lake City, UT

Susan Matney

(Member), PhD, RNC-OB, FAAN, FACMI, FHIMSS, FAMI, FHL7, Intermountain Healthcare, Salt Lake City UT; University of Utah College of Nursing, Salt Lake City, UT

Erin Maughan

(Member), PhD, RN, Director of Research, National Association of School Nurses, Silver Spring, MD

Judy Murphy

(Member), RN, FACMI, LFHIMSS, FAAN, Nurse Executive, Health IT Leader, Lake Elmo, MN

Joyce Sensmeier

(Member), MS, RN-BC, FHIMSS, FAAN, Senior Advisor, Informatics, HIMSS, San Marcos, CA

Charlotte Weaver

(Member), PhD, RN, MSPH, Board Director, PIH Health, Whittier California, Seattle, WA

SAVE THE DATE!

NEXT YEAR'S NURSING KNOWLEDGE:
BIG DATA SCIENCE CONFERENCE WILL BE HELD IN
MINNEAPOLIS, JUNE 8-10, 2022.

More information about current and future activities related to the Initiative can be found at the conference website, z.umn.edu/bigdata. Everyone is also invited to join the conversation via the LinkedIn platform Nursing Big Data Repository at nursingbigdata.org.

2020-2021 PROGRESS ON THE NATIONAL ACTION PLAN

Care Coordination

PROJECT TEAM

Co-Leaders

Mary Hook, PhD, RN-BC, Research Scientist, Center for Nursing Research and Practice Aurora Sinai Hospital

Lori Popejoy, PhD, RN, FAAN, Associate Dean for Innovation and Partnerships, Associate Professor University of Missouri

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.)

CURRENT ACTIVITIES

- Group is actively conducting a descriptive study to identify the role of ambulatory care coordinators and the information that they gather and use to support care coordination
 - 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
 - Sample: Professional care coordinators who work in ambulatory settings (goal = 200)
 - Methodology: Currently identified care coordinators 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
 - IRB Submission: August/Sept 2020
 - Recruitment: Q4 2020 – Q2 2021 distribute survey using a variety of sources including NKBDS Workgroups and larger group personal contacts and professional organizations to reach sample size
 - (Recruitment was put on hold Q1 2021 due to COVID-19)
 - Analysis: Q2 2021 to identify similarities and differences
 - Summarize findings and disseminate: Q2-3 2021
 - Implications: Use findings to identify specific data elements used by professional nurse care coordinators to support the exchange of vital information between all stakeholders
- Workgroup held a joint meeting with the Social Determinants of Health Workgroup to identify opportunities to collaborate on future work

RECENT AND UPCOMING PRESENTATIONS

N/A

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

N/A

RECENT AND UPCOMING OTHER PRODUCTS

N/A

Context of Care

PROJECT TEAM

Co-Leaders

Amber Oliver, DNP, RN-BC, System Executive 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

- Point Click Care to Epic Interoperability Project
 - Contract signed
 - 2 Pilot Sites Identified
 - Build with timeline as follows:
 - Build: 1/11/21 – 3/19/21
 - Integrated/UAT Testing: 3/15/21 – 5/17/21
 - Training: 5/10/21 – 5/28/21
 - Go-Live: 6/1/21
 - Initial data flow to include the following:
 - Demographics
 - Medications (Discharged Medication Reconciliation List)
 - Allergies
 - Medical Problem List with ICD10 Dx
 - DNR Status

RECENT AND UPCOMING PRESENTATIONS

N/A

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- Gilmore-Bykovskyi A, Block L, Kind AJH. Bridging the Hospital-Skilled Nursing Facility Information Continuity Divide. JAMA Netw Open. 2021;4(1):e2035040. doi:10.1001/jamanetworkopen.2020.35040
- 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

N/A

Data Science and Clinical Analytics

PROJECT TEAM

Co-Leaders

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

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

PURPOSE

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.

CURRENT ACTIVITIES – DATA SCIENCE SUBGROUP

The workgroup meets every other week.

- Nursing Data Science Year in Review
 - The 2019 manuscript was accepted in the Fall 2020 to be published at CIN
 - The 2020 year-in-review is under way. The group is writing up findings, and the plan is to submit for publication in June in the Applied Clinical Informatics journal. It is expected that publishing in ACI will have a much quicker review & publication timeline; thus, making findings timely available to everyone.
- Real world data science and clinical analytics education, best practices and projects
 - Data Science infrastructure and education resources
 - Continue building cloud environment using Google Cloud/BigQuery
 - Investigating grant and funding opportunities to foster the work
 - A project on viral pneumonia characterization is underway. We have identified and described 6 clusters in the final analysis, and we are finalizing a publication for submission in the Summer
- NCATS N3C COVID-19 Database
 - The nursing role inside the N3C seems very limited and there is only a small amount of nurse sensitive data in the repository
 - But there is an N3C Nursing Domain Team that is forming. Our NKBDS Data Science and Analytics group will consider joining to better evaluate the nursing potential of the data and to support procurement of nurse sensitive data
- Resources for nurses and nursing leaders to support data science for research, quality improvement and clinical analytics
 - Planning to develop an instructional video and make it publicly available to nurse leaders
- Recruit new members
 - There are a few new members interested in joining the workgroup

RECENT AND UPCOMING PRESENTATIONS

- Lee, M. Exploring a large mental health emergency care claims data set to identify population health inequity. Doswell Nursing Informatics Conference, TWU The Houston J. and Florence A. Doswell College of Nursing, Dallas, TX. (2021, April 30)
- Pruinelli, L. "Round Table iNMDS & Big Data Computing," 13th ACENDIO conference 2021 ACENDIO - The Association for Common European Nursing Diagnoses, Interventions and Outcomes, Groningen, Netherlands. (March 20, 2021). Invited

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Data Science and Clinical Analytics

- Role, J. *Data science and informatics in healthcare: An overview*. 1st Virtual International Research Conference, Adventist University of the Philippines, Silang, Cavite, Philippines. (2020, October 30). Invited

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- Austin, R., Chi, C., Delaney, C., Kirk, L., Michalowski, M., Pruinelli, L., Rajamani, S., & Monsen K. (2021). COVID-19 response empowered through nursing knowledge generated through existing IT infrastructure. *Online Journal of Nursing Informatics (OJNI)*, 25(1). Available at: <https://www.himss.org/resources/online-journal-nursing-informatics>
- Pruinelli, L. Editorial: Nursing and Data: Empowering Nursing Leaders for "Big Data" Science. *The Brazilian Nursing Journal (Revista Brasileira de Enfermagem - REBEn)*. [Accepted: 2021] [Non-Refereed]
- Schultz, M.A., Walden, R.L., Cato, K., Coviak, C.P., Cruz, C., D'Agostino, F., Douthit, B.J., Forbes, T., Gao, G., Lee, M.A., Lekan, D., Wieben, A., & Jeffery, A.D. Nursing-relevant patient outcomes and clinical processes in data science literature: 2019 year in review. *CIN: Computers, Informatics, Nursing*; May 6, 2021 – Volume Publish Ahead of Print – Issue – doi: 10.1097/CIN.0000000000000705

RECENT AND UPCOMING OTHER PRODUCTS

- Video: Applied Healthcare Data Science Roadmap for Nurse Leaders (under production)

Education

PROJECT TEAM

Co-Leaders

Marisa L. Wilson, DNSc, RN-BC, CPHIMS, FAMIA, FIAHSI, FAAN, Associate Professor, The University of Alabama at Birmingham

Dorcas Kunkel, DNP, RN, CNE, PHNA-BC, CPHIMS, Assistant Professor, Jacksonville University

PURPOSE

To ensure a competent nursing workforce capable of using digital technology to innovate, to create efficiencies, and to generate knowledge. This workgroup will collaborate with other workgroups and organizations; develop tools and strategies for increasing competency of faculty and students; disseminate information, and provide trainings.

CURRENT ACTIVITIES

- Led workgroup with the American Association of Colleges of Nursing (AACN) task force to develop Domain 8: Information and Healthcare Technology competencies and sub competencies for the Re-Envisioned Essentials
- Worked with faculty across the country during AACN listening sessions to begin the professional development of those faculty members as they work to integrate these competencies
- Lead sections of the revision of the American Nurses Association Scope and Standards of Nursing Informatics Practice
- Develop or locate an appropriate informatics self-assessment tool that aligns with the Essentials for faculty
- Continue to disseminate data on the informatics competency gap among nursing faculty which is key given the mandate to strengthen the domain
- Collaborate with the leadership of the Canadian Association of Schools of Nursing (CASN) to understand lessons learned
- Synthesize from each NKBDSI Workgroup the teachable content packets that they want to disseminate to ensure important concepts are not overlooked
- Create clinically focused, patient/population-based cases to align to teaching material so that faculty can see the connections between data, information, technologies, and care
- Determine how the Repository can be used as an interactive storage area for materials
- Continue to coordinate with other organizations (AACN, AMIA, ANIA, HIMSS, QSEN, NLN, TIGER) overseeing aspects of competency, accreditation, and professional development so that joint learning activities can occur to reach the maximum audience

RECENT AND UPCOMING PRESENTATIONS

- Wilson, M.L. Re-Envisioning the Essentials of Academic Nursing Domain 8: Informatics and Information Technology (2020). Nursing Informatics 2020. Brisbane, Australia, (Conference postponed to 2021)
- Drake, R., Skiba, D., Wilson, M.L., Swinscoe, C., & Procter, P. eRostering-can big data and machine learning/AI offer a flexible solution? (2020). Nursing Informatics 2020. Brisbane, Australia, (Conference postponed to 2021)
- Wilson, M.L. American Association of Colleges of Nursing. Fall Faculty Forum

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Education

- Wilson, M.L. Re-Envisioning the Essentials of Academic Nursing Domain 8: Informatics and Information Technology. Summer Institute in Nursing Informatics, Baltimore MD
- Wilson, M.L. Ensuring Competent Nurses Working in Technology and Data Rich Environments. DelMarVa Chapter of American Nursing Informatics Association

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- Wilson, M.L. (2020). Aligning Core Health Informatics Competencies. *Health Informatics*. HIMSS. <https://www.himss.org/resources/health-informatics>
- Wilson, M.L. & Sylvia, M. (2020). Social and Behavioral Data. In: M. Sylvia & I. (EdS.), *Population Health Analytics*. Burlington, MA: Jones and Bartlett Publishing. (in process)
- Wilson, M.L., Elias, B.L. & Moss, J.A. (2020). Education in Nursing Informatics. In: E.S. Berner (Ed.), *Informatics Education in Healthcare: Lessons Learned (2nd Ed.)*. New York, NY: Springer Publishing. (in process)
- Wilson, M.L. & Procter, P.M. (2020). Social Determinants of Health, Electronic Health Records, and Health Outcomes. In: V. Saba & K.A. McCormick (EdS.), *The Essentials of Nursing Informatics (7th Ed.)* New York, NY: McGraw-Hill Publishing
- Nahm, E-S., Mills, M.E., & Wilson, M.L. (2020). Nursing Curriculum Reform and Healthcare Information Technology. In: V. Saba & K.A. McCormick (EdS.), *The Essentials of Nursing Informatics (7th Ed.)* New York, NY: McGraw-Hill Publishing

RECENT AND UPCOMING OTHER PRODUCTS

N/A

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

PURPOSE

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.

CURRENT ACTIVITIES

- New LOINC panels for pain assessment scales included in the Pain Knowledge Model request
 - N-PASS, NIPS, CNPI, & PAINAD submitted to LOINC
 - rFLACC, PIPP-R, CRIES status: Parking lot due to lack of response
 - CPOT status: Requested developer to allow total score and nursing interpretation submission to LOINC ‘for free’
- Exacerbating & Alleviating Factors Value Sets
 - Completed preliminary analysis of value sets
 - Heuristics development initiated
- Genitourinary Knowledge Model
 - Completed preliminary analysis of value sets
 - Clarified heuristics to employ for mapping certain value sets
- Falls Knowledge Model
 - Participating on cross-workgroup team
 - Standardized Scale analysis initiated
- Heuristics Documentation
 - Foundational Heuristics (original Jan 2020) updated
 - Standardized Scales/Surveys New Term Request Rules/Heuristics documented
 - Standardized Scales/Surveys Request Spreadsheet “Tips” documented
- Content for use by nursing faculty/nurse educators developed for Education Workgroup

RECENT AND UPCOMING PRESENTATIONS

- LOINC Conference October 2020: “Sharing Your Pain” (Tess Settergren, Kay Lytle, Susan A. Matney, Nathan Davis)

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

N/A

RECENT AND UPCOMING OTHER PRODUCTS

N/A

Knowledge Modeling

PROJECT TEAM

Co-Leaders

Bonnie Westra, PhD, RN, FAAN, FACMI, Associate Professor Emerita University of Minnesota, School of Nursing

Kay Lytle, DNP, RN-BC, NEA-BC, CPHIMS, FHIMSS, Chief Nursing Information Officer Duke University Health System

PURPOSE

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. Harmonize nursing data standards across workgroups.

CURRENT ACTIVITIES

- Harmonizing nurse-sensitive data elements across workgroups
- Collaborating with the Encoding and Modeling Workgroup to add data standards (LOINC and Snomed-CT codes) to the Genitourinary Information Model
- Collaborating with the Encoding and Modeling Workgroup and CMS to add data standards to Fall Prevention Information Model (LOINC and Snomed-CT codes)
- Starting modeling on the Admission History and Screening handed off from the Transforming Documentation Workgroup
- Mapping health care organization’s data to the VTE Information model in FloMap
- Increasing generalizability of information models by inclusion of representatives from Cerner and Meditech to submit metadata for comparison of information models across EHR vendors
- Encouraging nurse responses to ONC for inclusion of nurse-sensitive data in the US Core Data Set for Interoperability <https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi>.
- Request support from the Steering Committee
 - Submitting materials to the eRepository – we submitted the GU Information Model and are ready to submit the Fall Prevention Information Model – but the eRepository Workgroup has not made progress in publishing the GU Model
 - Need a common sharable method of sharing documents in process as some members cannot access Dropbox and others cannot access Google docs.
 - How can we follow up from the workgroups based on Molly Cummings from AMIA forwarded a request for nurses to get involved in N3C - <https://covid.cd2h.org/n3c>

RECENT AND UPCOMING PRESENTATIONS

- Sharing Your Pain. (October 16, 2020, 2020 LOINC Virtual Conference). Settergren, T., Lytle, K., Matney, S. A., & Davis, N
- Fall Prevention Information Model Validated Using Flowsheet Metadata. (November 17, 2020, AMIA 2020 Virtual Annual Symposium). Lytle, K.S., Westra, B.L., Hook, M., Adams, M., Ali, S. & Whittenburg, L
- Using Information Modeling to Support Wisdom in Practice. (August 6, 2021). ANIA Conference, Akre, M., Hook, M
- Improving Care Outcomes: Start with Standardized Nursing Knowledge Information Models, (November 2, 2020, ANIA Midwest webinar), Akre, M., and Furukawa M

Knowledge Modeling

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- Westra, B.L., Lytle, K.S., Whittenburg, L., Adams, M., Ali, S., Furukawa, M., Hartleben, S., Hook, M., Johnson, S., Collins Rossetti, S., Settergren, T. (2020). A Refined Methodology for Validation of Information Models Derived from Flowsheet Data and Applied to a Genitourinary Case, *Journal of the American Medical Informatics Association*, ocaa166, <https://doi-org.ezp2.lib.umn.edu/10.1093/jamia/ocaa166>.
- Lytle, K.S., Westra, B.L., Whittenburg, L., Adams, M., Ali, S., Akre, M., Ali, S., Furukawa, M., Hartleben, S., Hook, M., Johnson, S., Settergren, T., Thibodeaux, M. (Accepted January 2021). Information Models Offer Value to Standardize EHR Flowsheet Data: A Fall Prevention Exemplar. *Journal of Nursing Scholarship*

RECENT AND UPCOMING OTHER PRODUCTS

- Completed a document on defining the role of contributing authors
- Reference Information Mode for Venous Thromboembolism (VTE) Prevention Information Model
- Plan for dissemination of our work products
- Cross Workgroup nurse-sensitive data elements

Mobile Health for Nursing

PROJECT TEAM

Co-Leaders

Melissa C.S. Breth, DNP, RN-BC, CPHIMS, Northwest Community Healthcare, Part of NorthShore - Arlington Heights, IL

Tami H. Wyatt, PhD, RN, ANEF, FAAN, University of Tennessee, Knoxville College 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

- Promote nursing involvement in the creation, storage, and exchange of mobile health data
 - Developing materials to describe nurses' roles on research & development, product development, or product life cycle
 - Presentation at the HIMSS21 nursing informatics symposium
 - Networking resource potentially established to align Nurse Informaticists with Software Development Industry to encourage more engagement
 - White Paper discussing role of Nurse in mHealth including positions.
 - Will upload to NKBDS Repository
 - Scoping Review to learn the literature on nurse informaticists' role in mHealth is in progress
 - Plan to publish a scoping review
- Survey US nurses to determine use of mobile health apps and associated tools in telehealth related to COVID-19 purposes
 - Worked with ANA—COVID 19 surveys to determine appropriate fit to incorporate questions in current large COVID study. Outcome: not a fit and determined nurses are being over-surveyed at this time
- Explore possible secondary data analysis from mHealth product of clinicians at sea in South Korea
 - Collaborate with the Maritime Medical Research Center (MMRC) at the Pusan National University Hospital
 - Review database content collected through Korean mobile electronic medical record software utilized by South Korean clinicians at sea
 - Currently on hold with plan to restart efforts this summer

RECENT AND UPCOMING PRESENTATIONS

- Podium presentation at HIMSS21 Nursing Informatics Symposium Pre-Conference, August 9, Las Vegas: *Nurse Informaticists: Bringing value throughout the product life cycle of mHealth Apps*
- Poster presentation submitted to HIMSS21 Nursing Informatics Symposium Pre-Conference: *The efficacy of mobile health interventions used to manage acute or chronic pain: A systematic review*

Mobile Health for Nursing

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- Martin, C.L., Bakker, C., Breth, M.S., Gao, G., Lee, K., Lee, M.A., Tiase, V.L., Tunby, L.J., Wyatt, T.H., Janeway, L.M. (2020). The efficacy of mobile health interventions used to manage acute or chronic pain: A systematic review. *Research in Nursing and Health*. 44(1), 111-128. <https://doi.org/10.1002/nur.22097>

RECENT AND UPCOMING OTHER PRODUCTS

- Possible published database or repository of nurse informaticists interested in mHealth product development
- Upcoming scoping review about the nurse's role in mHealth product development to be published
- *Nurse Informaticists: Bringing value throughout the product life cycle of mHealth Apps* conference proceedings to be published

Nursing Value

PROJECT TEAM

Co-Leaders

Martin Michalowski, PhD, FAMIA, Assistant Professor, Population Health and Systems Cooperative, University of Minnesota, School of Nursing

John Deckro, DNP, RN-BC, CPHIMS, RN CIS, Coordinator & VA Nursing Academic Partnership (VANAP) Faculty, VA Providence Health Care System & Rhode Island College School of Nursing

PURPOSE

To continue development and testing of a Nursing Value Model, with respect to a broad definition as to the value of nursing. Value in reference to nursing refers to quantitative metrics such as cost and available resources, and also more holistic and qualitative metrics such as caring, engagement, connectedness and spirituality. Investigations guided by artificial intelligence methods will be explored to further define the application of nursing values in service to health and health care.

CURRENT ACTIVITIES

- Confirmed access to MIMIC database
- Continued exploration of relevant data sources (large EHR databases) for use in the development and validation of nursing value models
- Engaging inter-disciplinary methodologies/models for articulating values as an influencer in decision making
- Recruit members with diverse clinical, data science and analysis backgrounds
- Defining three axes of research related to Nursing Value:
 - Knowledge representation for building a Value model
 - Methodological exploration for analysis of data
 - Implementation science to deploy Value model in clinical settings
- Setting up an hour-long CE program on AI marketed to the VHA Nursing Informatics Field Council scheduled for early 2022

GRANT ACTIVITY

N/A

RECENT AND UPCOMING PRESENTATIONS

N/A

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- Zeffiro V, Sanson G, Welton J, Maurici M, Malatesta A, Carboni L, Vellone E, Alvaro R, D'Agostino F (2020). Predictive factors of a prolonged length of stay in a community Nursing-Led unit: A retrospective cohort study. *Journal of Clinical Nursing*, 29(23-24):4685–4696. doi: <https://doi.org/10.1111/jocn.15509>
- Deckro, J., Phillips, T., Davis, A., Hehr, A. T., & Ochylski, S. (2021). Big data in the Veterans Health Administration: A nursing informatics perspective. *Journal of Nursing Scholarship*

RECENT AND UPCOMING OTHER PRODUCTS

N/A

Policy and Advocacy

PROJECT TEAM

Leader

Whende M. Carroll, MSN-RN, BC, FHIMSS, Director, Clinical Optimization, Contigo Health Founder, Nurse Evolution

PURPOSE

The mission of the Big Data Policy and Advocacy workgroup is to elevate the voice and visibility of each workgroup's nurse-led Big Data initiatives. We will be recommending policy statements and advocacy to support the dissemination of leading-edge collateral and work products

CURRENT ACTIVITIES

- Continued collaboration with the following for advocacy of the NCSBN unique nurse identifier:
 - American Medical Informatics Association (AMIA)
 - American Nurses Association (ANA)
 - Alliance for Nursing Informatics (ANI)
 - American Academy of Nursing (AAN)
 - Healthcare Information and Management Systems Society (HIMSS)
 - National Council of State Boards of Nursing (NCSBN)
 - Office of the National Coordinator (ONC)
- Seeking partnership with other workgroups to develop an Advocacy Summary/ Statement – 'Telehealth: Data empowerment for Patient Access, Integration/ Interoperability, Reimbursement, Consumer Incentives, and Measuring Outcomes'
 - Policy and Advocacy Toolkit – Drafted, developing
 - Developing plan to get work products and collateral into e-Repository
 - Supporting active and potential unique nurse identifier proof-of-concept (POC) projects with the Center for Medical Interoperability, HCA Healthcare, University of Alabama – Huntsville, Epic, Kamana Health, and Microsoft.

RECENT AND UPCOMING PRESENTATIONS

- List any presentation the workgroup performed related to the workgroup work and/or mentioned the Nursing Knowledge Big Data Science Initiative
- ANI Webinar: *Big Data Unique Nurse Identifier Policy Statement*
- Microsoft 2021 Women in Cloud Presentation: *Nurses and Big Data – The Value and Impact of Information, Knowledge, and Wisdom*
- ANIA 2021 Monthly Webinar: *A Unique Nurse Identifier: Demonstrating Nursing Value*
- ANIA 2021 Poster: *The Value of a Unique Nurse Identifier to Improve Patient Outcomes*
- AONL 2021 – Small Group Discussion: *Unique Nurse Identifier*
- HIMSS 2021 Nursing Informatics Symposium Presentation: *Understanding the Vital Role of a Unique Nurse Identifier*

Policy and Advocacy

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- List any publication the workgroup produced related to the workgroup work and/or mentioned the Nursing Knowledge Big Data Science Initiative
- ANA American Nurse – Manuscript under review: *The Fingerprint of Nursing: What a Unique Nurse Identifier Means for our Future*
- Computers, Informatics, Nursing – ANI Connection – Publication: *Improving Patient Outcomes Through Sharable, Comparable Nursing Data Using a Unique Nurse Identifier*
- Nursing Education Perspectives – Publication: *Using Nursys® as a Primary Source for Licensure Information*
- NCSBN Leader-to-Leader Newsletter article: *Updates on the Unique Nurse Identifier (Nurses' NCSBN ID)*
- National Academy of Medicine: *The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity (2021) Recommendations for a national unique nurse identifier*
- Nursing Informatics for the 21st Century – Drafting Chapter: *Unique Nurse Identifier*

RECENT AND UPCOMING OTHER PRODUCTS

- List any product/output the workgroup produced related to the workgroup work and/or mentioned the Nursing Knowledge Big Data Science Initiative
- ANI-endorsed Unique Nurse Identifier Policy Statement – Approved November 2020
- ANI-endorsed Educational Materials – Unique Nurse Identifier: Live webinar presentation, slide deck, Policy Statement, Infographic, FAQ document, and POC summary
- Submitted comments for USCDI v.2.0 – (Provider ID) NCSBN Unique Nurse ID – April 2021
- Collaboration with Education and connection with Nurse Value Workgroups
- Developing plan to get work products and collateral into the e-Repository
- Policy and Advocacy Roadmap

(continued next page)

Social and Behavioral Determinants of Health

PROJECT TEAM

Co-Leaders

Robin Austin, PhD, DNP, RN-BC, FAMIA, FNAP, Assistant Professor, University of Minnesota School of Nursing

Ruth Wetta, PhD, MPH, MS, RN, DataInsights Lead Clinical Researcher Cerner

PURPOSE

Support the inclusion of Social 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.

CURRENT ACTIVITIES

- 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
- Contribute to the Coordination of Nurse Sensitive Data elements across workgroups
- Continue participation in the Gravity Project including development and ballot an HL7 FHIR SDOH Implementation Guide
- Continue advocacy activities for inclusion of SDOH 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

RECENT AND UPCOMING PRESENTATIONS

- Holt, JM, Austin, RR, Monsen, KM (2021). Mapping Social Determinants of Health Screeners to Simplified Omaha System Terms: Patient-reported Social and Behavioral Determinants of Health and Resilience using MyStrengths+MyHealth: A Personal Health Application
- Monsen, K.A., Austin, R.R. (2020). Exploring large Community- and Clinically-generated Datasets to Understand SDOH AND Resilience Before and During the COVID-19 Pandemic. Office of the National Coordinator (ONC). Advancing Interoperability: Social Determinants of Health Virtual Workshop

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- Austin, R., Holt, J., Atadja, R., Noonan, T., Cole, M., Monsen, K.A.(2020) Mapping Social Determinants of Health Screeners to Simplified Omaha System Terms: Patient-reported Social and Behavioral Determinants of Health and Resilience using MyStrengths+MyHealth: A Personal Health Application. (in-progress)

RECENT AND UPCOMING OTHER PRODUCTS

- SDOH Member Survey: To support planning efforts, a brief, six-item survey was developed by the Co-Chairs of the Nursing Big Data Social Determinants of Health (SDOH) workgroup. The survey assessed preferences for meeting times/dates and SDOH interests among workgroup members
- Meeting Time Preferences: Preferences for meeting times and dates indicate that Tuesdays between 9-11 am during the second week of the month was the highest preference among respondents
- Workgroup Member Social Determinants of Health (SDOH) Interests and Practice Setting: A survey item that assessed members' interest in uses of SDOH data indicated that nursing practice (43.8%) as the most frequent interest area, followed by nursing research (37.5%) and policy (18.7%).

Transforming Documentation

PROJECT TEAM

Co-Leaders

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

Bonnie Adrian, PhD, RN, Research Nurse Scientist, Clinical Informatics, UC Health

PURPOSE

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. Transformation supports 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 provide the foundation for continued work in defining Nursing Admission History for other patient populations and care settings.

CURRENT ACTIVITIES

- Continue monthly WG meetings
- Delivered Nursing Admission history dataset to Information Modeling/Encoding & Modeling WGs
- Develop 'How To' dissemination/implementation guide/toolkit for the further work at June 2021 virtual meeting
- Engage at least 2 major EHR vendors regarding Nursing Admission history dataset and integration plans with their core software (offering to existing and new customers) – Cerner and Epic
- Explore making permanent some documentation burden reduction efforts for pandemic response – escalate to Regulatory partners for support (e.g., CMS for Care Plan waiver)

RECENT AND UPCOMING PRESENTATIONS

- Adrian, B. "Project Joy". Panel Presentation: Exemplar and Key Successes for the 25 By 5: Symposium to Reduce Documentation Burden on U.S. Clinicians by 75% by 2025 American Medical Informatics Association, Columbia University, Vanderbilt University, NIH National Library of Medicine), 2021
- Adrian, B. "Project Joy: Giving Time Back to Nurses for Patient Care," co-presented with Katherine Howell, American Organization for Nursing Leadership conference scheduled for Nashville rescheduled to virtual, 2020
- Adrian, B. "Project Joy: From Taking Care of the Computer to Taking Care of Patients," American Nursing Informatics Association Conference scheduled for Chicago rescheduled to virtual, 2020
- Adrian, B. Closing Keynote "Project Joy: Giving Time Back to Nurses by Reducing Documentation Burden" HIMSS Nursing Informatics Symposium, originally scheduled for Orlando and rescheduled to virtual, 2020

PUBLISHED, ACCEPTED, AND UNDER REVIEW PUBLICATIONS

- Englebright, J., Michel, S., Boyd, D., & Hulett, S. A Framework for National Collaboration to Reduce Documentation Burden and Design for Usable and Reusable Data. JONA Volume 51, Number 3, pp 162-167

RECENT AND UPCOMING OTHER PRODUCTS

- Admission History Implementation Guide

2021-2022 NATIONAL ACTION PLAN

Care Coordination

PROJECT TEAM

Co-Leaders

Mary Hook, PhD, RN-BC, Research Scientist, Center for Nursing Research and Practice Aurora Sinai Hospital

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Laura Heermann

Sharon Hewner

Lisa Moon

Jeff Morse

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Lana Pasek

Lori Popejoy

Suzanne Sullivan

Sandra Washington

Donna Mayo

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

- Conclude data collection for the descriptive study to identify the role of ambulatory care coordinators and the information that they gather and use to support care coordination
 - Finalize recruitment of participants for the study and reply to the survey
 - Gather the information needed via the responses from the survey during the Summer 2021
 - Propose a role of ambulatory care coordinators based on surveys' answers
- Keep working closely with the Social Determinants of Health workgroup to further collaborate in common interest projects

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

Heather Shirk

Cheryl Wagner

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.

ANNUAL GOAL

- Continuing regular meetings working toward the following goals:
 - Complete clinical condition linkage data analysis utilizing an IDN data warehouse for taxonomy validity & system longitudinal plan of care interoperability design
 - Work with the SDOH group to promote #SocialVitalSigns & Continuity of Care MDS.
 - Ongoing collaboration with SDOH identifying potential Social Vital Signs vendor engagement & pilot organization
 - 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)
 - Phase 2 project to explore bidirectional interface & additional location data sharing
 - Ongoing Literature Review for Mental/Behavioral Health Taxonomy Selection.
 - Initial Literature Review completed November 2019 & remains ongoing
 - Review of Continuity of Care (Intake/Discharge Information) for SDOH & Mental/Behavioral Health.
 - Initial Information Model & Interoperability Design completed.
 - 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.
 - Actively working on cross vendor export & import of Facesheet, Diagnosis List with ICD10 codes, awaiting initial data extract.
 - 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.
 - Application of findings to taxonomy design for Danger to Self/Others Plan of Care.
 - Ongoing goal for 2021

Data Science and Clinical Analytics

PROJECT TEAM

Co-Leaders

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

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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

- Nursing Data Science Year in Review
 - Keep current project and process, incorporating/leaving behind some outcomes, target May 2022 for next publication. The work includes a librarian who helps to perform the search strategy. The goal is also to keep rotating first authors, providing the opportunity to everyone lead a manuscript.
 - Outcome: a manuscript reporting out the findings
- Real world data science and clinical analytics education, best practices and projects
 - Data Science infrastructure and education resources
 - Continue building cloud environment using Google Cloud/BigQuery
 - Build one project from start to end using MIMIC data
 - A project on viral pneumonia characterization, using clustering algorithm, is being finalized and will be submitted for publication in the Summer 2021.
 - Outcome: a project from the start to the end, with potential to illustrate the use of data science in real-world data
- Resources for nurses and nursing leaders to support data science for research, quality improvement and clinical analytics
 - Finalize a video to demonstrate nurse leaders the potential of using data science for clinical implementations and applications
 - The workgroup will work with the Education and Policy and Advocacy workgroup to disseminate this video
 - Outcome: a publically available “nurse-friendly” video showing the potential of data science
- Increase data science literacy for the general nurse audience, and those who interact/work with information technology personnel.
 - The workgroup will consider the use of journal clubs to revise data science publications and how to understand the importance of findings
 - Explore new data science products relevant to nursing and its conception to discuss how they are built and pros and cons from a clinical perspective
 - The workgroup will also explore other ways of being available for further clarify data science concepts among nurses
 - The educational materials will be shared and discussed with the Education workgroup for dissemination
 - Outcome: A data science tool kit may be a product from this goal

Education

PROJECT TEAM

Co-Leaders

Marisa L. Wilson, DNSc, RN-BC, CPHIMS, FAMIA, FIAHSI, FAAN, Associate Professor, The University of Alabama at Birmingham

Dorcas Kunkel, DNP, RN, CNE, PHNA-BC, CPHIMS, Assistant Professor, Jacksonville University

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Carren Ondara
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Mary Jane Rivard
Denise Sandell
Mari Tietze
Donni Toth
Marie Vanderkooi
Gwen Verchota
Cheryl Wagner
Ann Weiben
Marisa L. Wilson
Dongjuan Xu

PURPOSE

To ensure a competent nursing workforce capable of using digital technology to innovate, to create efficiencies, and to generate knowledge. This workgroup will collaborate with other workgroups and organizations, develop tools and strategies for increasing competency of nursing professionals, faculty and students; disseminate information and provide trainings.

ANNUAL GOALS

- Create a road map for Education Workgroup
- Develop informatics competency assessment for academic nursing educators/faculty
- Interpret the 2021 American Association of Colleges of Nursing, Core Competencies for Professional Nursing Education, Domain 8 Informatics and Healthcare Technologies for nursing professionals
- Disseminate the products of the NKBDSI to the appropriate audiences
- Create educational resources that specifically target the Big Data knowledge gap
- Work collaboratively with national and international groups with similar purpose

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

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Tess Settergren

Christine Spisla

Rachel Tharp

Cyndalynn Tilley

Carisa Voightman

Ad Hoc members (call upon as needed)

Mari Akre

Kathy Dudding

Chad Fairfield

Carol Geary

Mary Hook

Marisa Wilson

Joe Zillmer

PURPOSE

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

- Create/Revise Heuristics
 - Update Foundational Heuristics in alignment with evolving standards
 - LOINC Standardized Survey/Scale Heuristics
 - Document project-specific heuristics & provenance
 - Interventions mapping heuristics – start with Pain
- Encode/map knowledge models & request new terms as required:
 - Partner with Knowledge Modeling WG for use cases/workflows/definitions
 - Collaborative mapping project with LOINC Nursing Subcommittee
 - Genitourinary Knowledge Model mapping
 - Falls Knowledge Model
 - VTE Knowledge Model
 - Nursing History/Screening Knowledge Model
- Education/Awareness:
 - Provide learning opportunities to WG members
- Promote mapping expertise aligned to FHIR structure/rules
 - Submit abstracts to 2022 ANIA & SINI conferences
- Publications:
 - Publish copyrighted work artifacts on NKBDS LinkedIn site
 - Publish article(s) on LOINC heuristics

“STRETCH GOAL” PROJECTS:

- Review the USCDI gaps & possible avenues to encourage inclusion of nursing data
- Find willing participants for data standards implementation (Connectathon)—
 - Start with wound, expanded vital signs, or pain content
 - Need to determine implementation ‘owners’
 - Steering Committee help??
- Create style guide with vendor collaboration: “How to use these models to standardize your documentation”

Knowledge Modeling

PROJECT TEAM

Co-Leaders

Bonnie Westra, PhD, RN, FAAN, FACMI, Associate Professor Emerita, University of Minnesota, School of Nursing

Kay Lytle, DNP, RN-BC, NEA-BC, CPHIMS, FHIMSS, FAMIA, Chief Nursing Information Officer Duke University Health System

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Joe Zillmer

PURPOSE

To validate previously developed information models using flowsheet data to extend national standards with nurse-sensitive data, and continuously improve and adapt the knowledge model validation and creation process using flowsheet data and other nurse-sensitive information.

ANNUAL GOALS

- Complete validation of the
 - VTE Knowledge Model
 - Admission History and Screening Information Model
- Collaborate with Encoding & Modeling Workgroup on coding the
 - Genitourinary Information Model
 - Fall Prevention Information Model
- Disseminate work of the Knowledge Modeling Workgroup
 - Publicize availability and uses of the Fall Prevention Information Model in the data repository.
 - Develop a process to disseminate and publicize materials and resources using social media with standardized messages, drawing on work of Policy Statement Roadmap
- Determine future activities with the Pain FHIR profile; include advice from the Steering Committee about the following:
 - Who has oversight
 - Implementation is needed. Discuss vendors i.e. Cerner if they can see if it would fit with their work
 - Plan for a Connectathon before the Pain Information Model can be balloted at HL7
- Discuss future information models as time allows to expand the work:
 - Physical mobility (extension of fall prevention)
 - Delirium prevention
 - Wounds (build on Pressure Injury/Ulcers, Integumentary Status in Physiologic assessment, VA has done work)
 - Complete IM’s originally developed at FV – Cardiovascular System (Partial in VTE and Physiologic assessment), Gastrointestinal System, Respiratory system (partially in VTE now)

Mobile Health for Nursing

PROJECT TEAM

Co-Leaders

Tami H. Wyatt, PhD, RN, ANEF, FAAN, University of Tennessee, Knoxville College of Nursing

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Regina Wysocki

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.

ANNUAL GOALS

Promote nursing involvement in the creation, storage, and exchange of mobile health data.

- Develop materials to describe the current state of nurses' roles on product development or product life cycle to include:
 - White paper
 - Scoping review
 - Presentations
- Survey nurses to determine how mobile health is/should enhance nurses' role to promote patient and public health focusing on disparate populations.
 - Survey NKBDS group.
 - Survey other informatics groups.
 - Include in survey who should contribute to this discussion/the audience
- Create a movement to engage nurses in planning, research and development of mobile health technology that gathers data to improve nurses' roles in promoting patient and public health.

Nursing Value

PROJECT TEAM

Co-Leaders

Martin Michalowski, PhD, FAMIA, Assistant Professor, Population Health and Systems Cooperative, University of Minnesota, School of Nursing

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Cathy I. Schwartz

Marisa Sileo

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PURPOSE

Continue development and testing of a Nursing Value Model, with respect to a broad definition of value. The workgroup explores value in reference to nursing with quantitative metrics such as cost and available resources; also, more holistic and qualitative metrics related to values such as caring, engagement, connectedness, and spirituality. The workgroup will employ artificial intelligence methodologies to further define the application of nursing value/values in service to health and health care.

ANNUAL GOALS

- Explore access to data sources that may inform the nursing value work –
 - School nursing
 - Nurse-managed health centers
 - Veterans Health Administration
- Examine, validate with respect to AI applicability, and place in the NKBDS E-Repository the data dictionary formulated to date by the Nursing Value Workgroup.
- Map nursing terms that could represent compassion/caring and explore associated outcomes –
 - Research client satisfaction outcomes/surveys for insight into nursing value.
- Formulate strategies for the implementation of nursing knowledge with respect to big data and nursing value –
 - Influencing the data collected by clinical nurses

Policy and Advocacy

PROJECT TEAM

Leader

Whende M. Carroll, MSN-RN, BC, FHIMSS, Director, Clinical Optimization, Contigo Health Founder, Nurse Evolution

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PURPOSE

Elevate the voice and visibility of each workgroup's nurse-led Big Data initiatives. We will be lending advocacy recommendations to support the endorsement and dissemination of leading-edge collateral, deliverables, and work products (Updated draft to be approved by Workgroup Summer/Fall 2021).

ANNUAL GOALS

- Expand on Unique Nurse Identifier proof-of-concept pilots, completed and in progress, to move from conception to document demonstrated outcomes, technical processes, challenges, and lessons learned to help advocate for and provide instructions for the operationalization of the NCSBN ID in EHR, ERP, and other technologies. Technical specifications for all POCs will be diagrammed and disseminated to interested parties and in the Big Data e-Repository.
- Increase our outreach and partnership efforts, per our purpose, to support increased workgroup advocacy for their deliverables intended for endorsement by ANI and other entities. We will focus on consultation with the mHealth, Improving Documentation and Communication, and Knowledge Modeling workgroups. Also, we will develop an Advocacy Toolkit for workgroup's reference and submit it into the e-Repository.
- Continue our dissemination of knowledge—publications and presentations—about the Unique Nurse Identifier and other topics relevant to our workgroup. One initial idea is to discuss and publish literature about the pre-licensure use of a unique nurse identifier (one member is already authoring a manuscript in a forthcoming textbook). We will also collaborate with education and small and large tech companies to support and potentially socialize their experimental and existent use of the NCSBN ID.

Social and Behavioral Determinants of Health

PROJECT TEAM

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PURPOSE

Support the inclusion, interoperability, and use of Determinants of Health (DOH) by nurses/for nurses in electronic health records and digital health tools to empower nurses to partner with patients, families and communities and interprofessional colleagues/care teams for whole person care to improve individual, community and population health (draft proposed change to be submitted to Steering Committee and workgroup members Summer/Fall 2021).

ANNUAL GOALS

- Propose a change to the Workgroup name to "Determinants of Health" to cover a broader perspective of determinants of health.
- Conduct an 'Environmental Scan' of current organizations and professional associations conducting DOH work related to data standards, policy advocacy, and educational efforts for nurses to build and support the necessary data infrastructure for interoperable DOH data. (August – November 2021)
- Use the Environmental scan to inform and the second half of the year (Nov 2021 – June 2022) activities such as but not limited to identifying key gaps in DOH data standards, policy, or education.
- Align DOH working group efforts with national organizations/professional associations to enhance/unify the voice of nursing.
- Generate a product (e.g., publication, presentation, or white paper) for dissemination based on the Environmental scan.
- Take the lead as a DOH resource to partner across Nursing Knowledge Big Data Science conference working groups.

Transforming Documentation

PROJECT TEAM

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PURPOSE

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. Transformation supports 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.

ANNUAL GOALS

- Continue monthly WG meetings
- Delivered Nursing Admission history dataset to Knowledge Modeling/Encoding & Modeling WGs
- Engage Policy/Advocacy WG to partner on roadmap for Nursing Admission history dissemination
- Explore making permanent some documentation burden reduction efforts for pandemic response – escalate to Regulatory partners for support (e.g. CMS for Care Plan waiver, etc.)
- Continue synergy exploration with AMIA 25 x 5
- Discuss 21st Century Cures Act Final rule implications on nursing note quality
- Continue conference discussion on idea to widen scope/purpose of WG – Transforming Communication

RECENT AND UPCOMING OTHER PRODUCTS

- Full WG Schedule: 6/24/2021 * 7/22/2021 * 08/26/2021* 9/23/2021 * 10/28/2021

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**The 2022 Nursing Knowledge: Big Data Science Conference
will be held in Minneapolis June 8-10, 2022.**