

Nursing Informatics Research Year in Review

Spring 2017 – Winter 2018

Trends in Clinical Informatics: A Nursing Perspective

April 27, 2017



Nurses Transforming Healthcare Through Informatics

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*Nurses Transforming Healthcare
Through Informatics*

Conflict of Interest

Andrew Phillips

Has no real or apparent conflicts of interest to report.

Learning Objectives

- Evaluate themes that impact nursing informatics.
- Identify gaps in nursing informatics research.
- Generate logical next steps in advancing nursing informatics research.

Arksey and O'Malley¹

- Step 1 – Identify the Research Question
- Step 2 – Identify Relevant Studies
- Step 3 – Study Selection (Iterative process which can change over time)
- Step 4 – Charting the Data
- Step 5 – Collating, summarizing, and reporting the results
- Step 6 – Consultation – This is you guys

¹Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International journal of social research methodology*, 8(1), 19-32.

Step 1: Research Question

- What trends and themes emerge from a survey of the published literature in the area of nursing informatics during the past year
- Make meaning of current and past themes – historical context.

Step 2: Identify Relevant Studies

- Search Strategy

- Databases: PubMed and CINAHL

- Search terms

- (“nurse” or “nursing”) AND “informatics”) OR “nursing informatics”

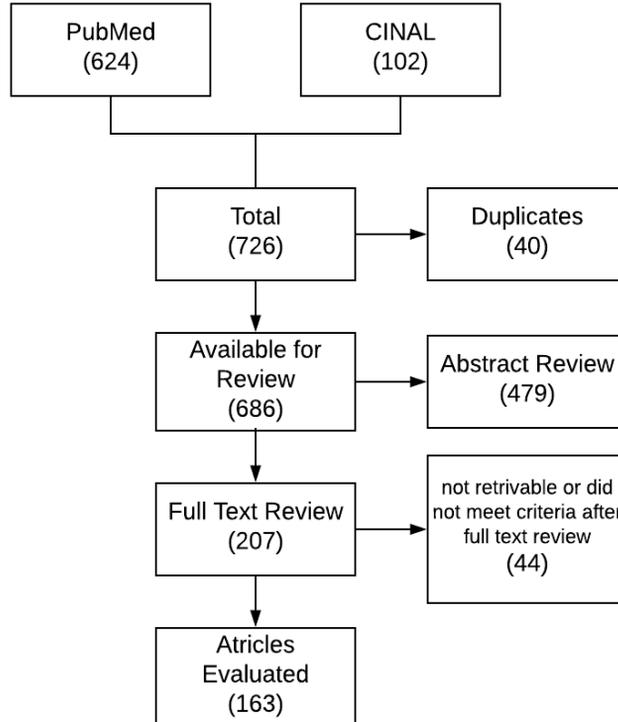
- Publication Dates 3/1/2017 – 2/28/2018

Step 3: Study Selection

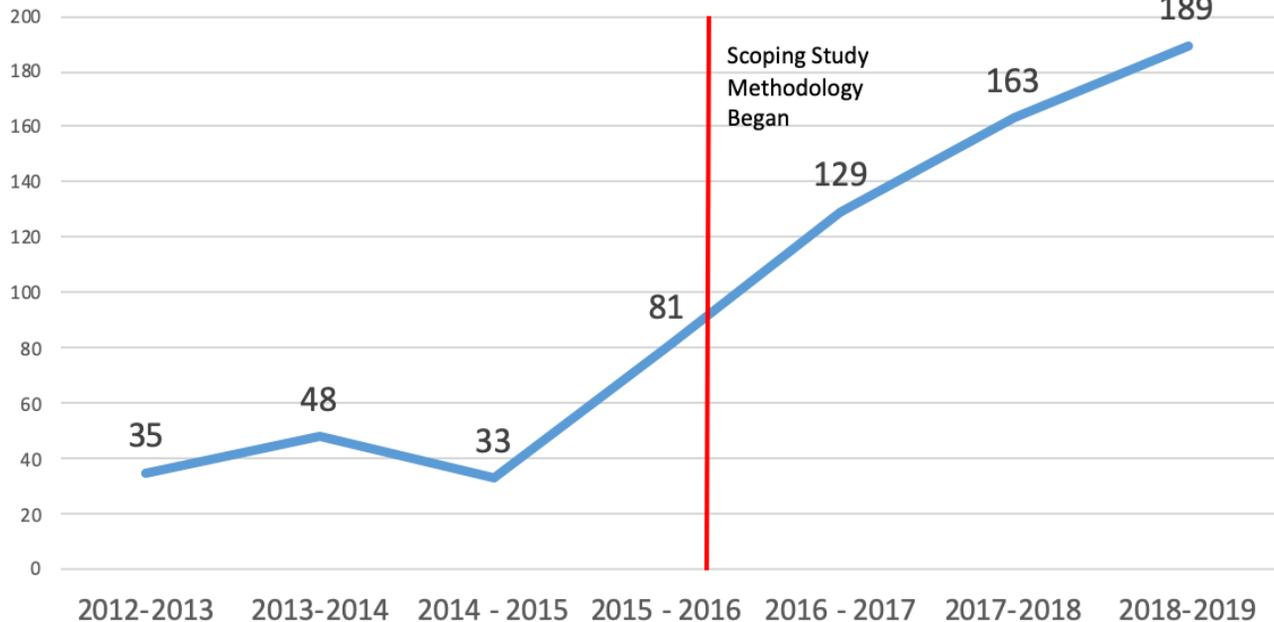
Inclusion and Exclusion Criteria

- Inclusion criteria: Research, contributes to nursing informatics knowledge base, prototype development and testing, clinical care delivery focus; informatics
- Exclusions: Articles that focused on informatics education programs, nursing education, nursing students

Search Results (flow chart)

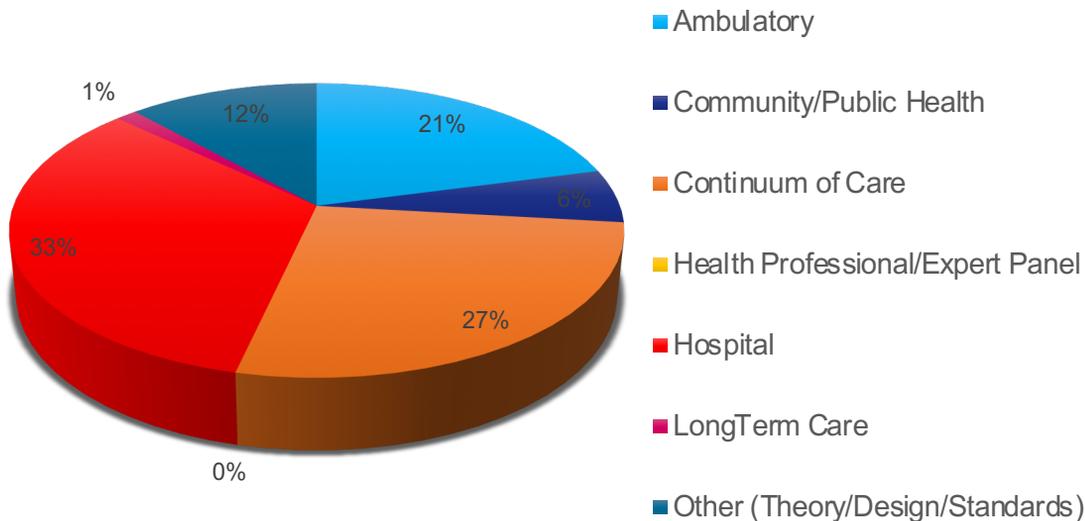


Articles Included in Evaluation

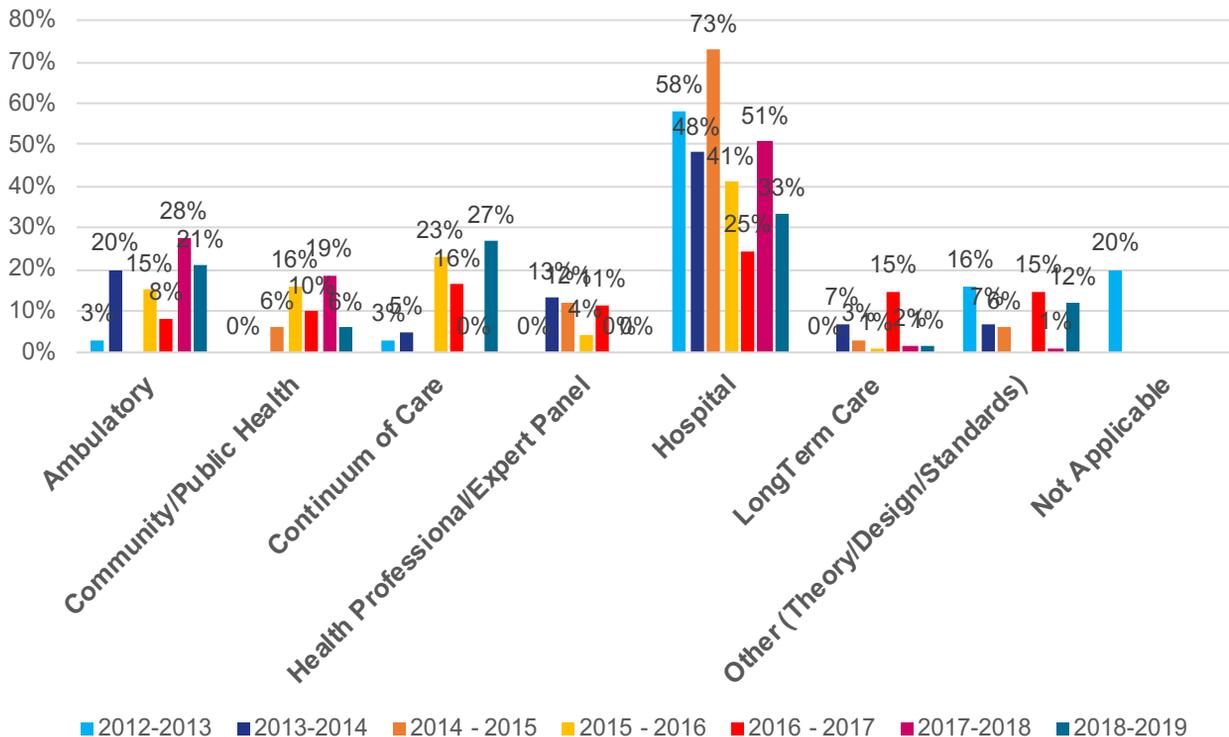


Step 4: Charting the Data

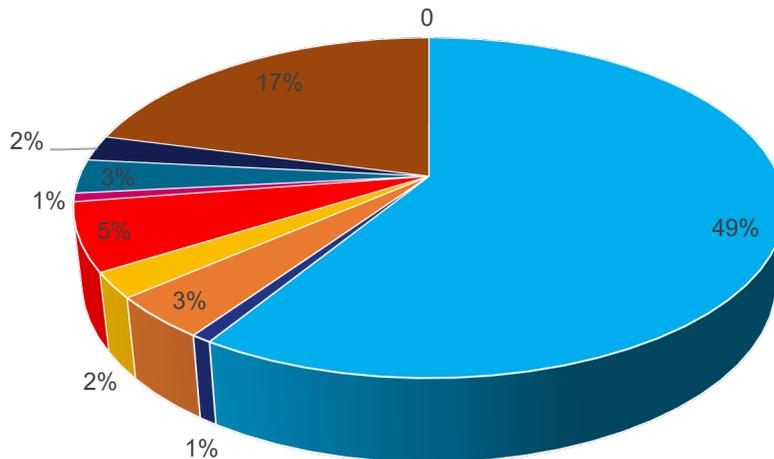
Research by Setting (%) 2017-2018



Research Setting (%) By Year

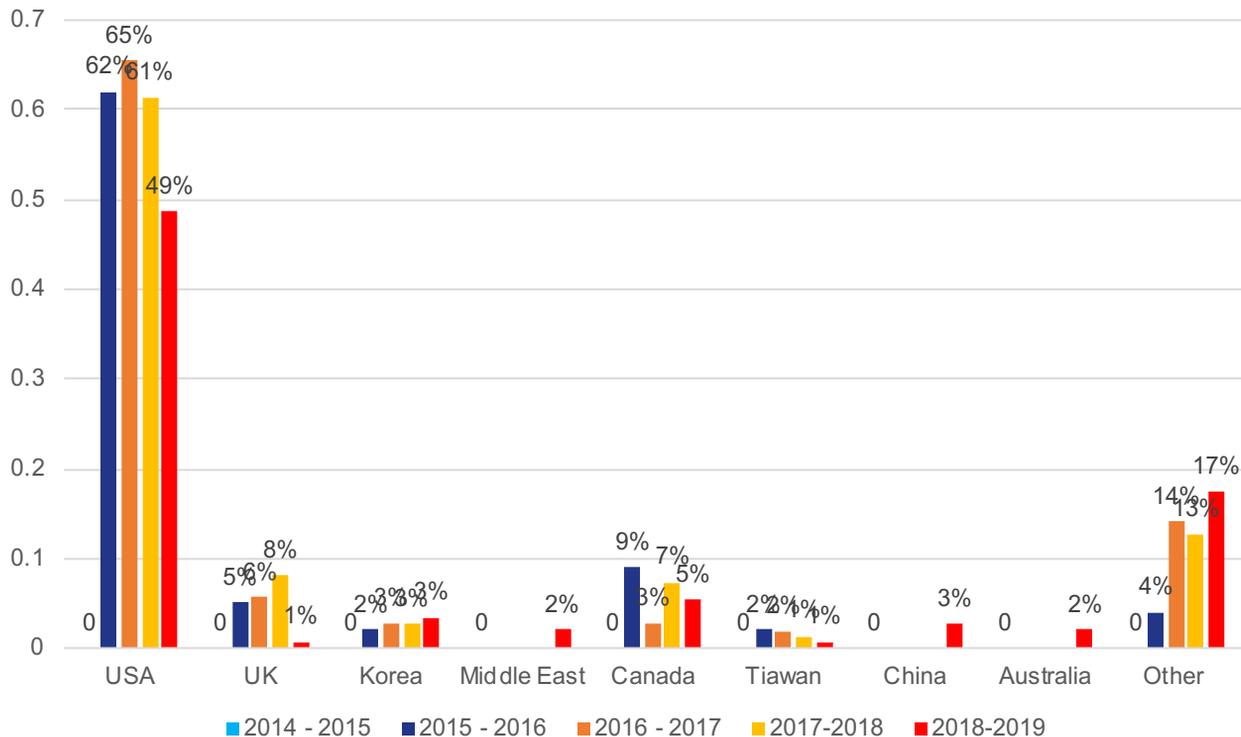


By Country (%) 2017-2018

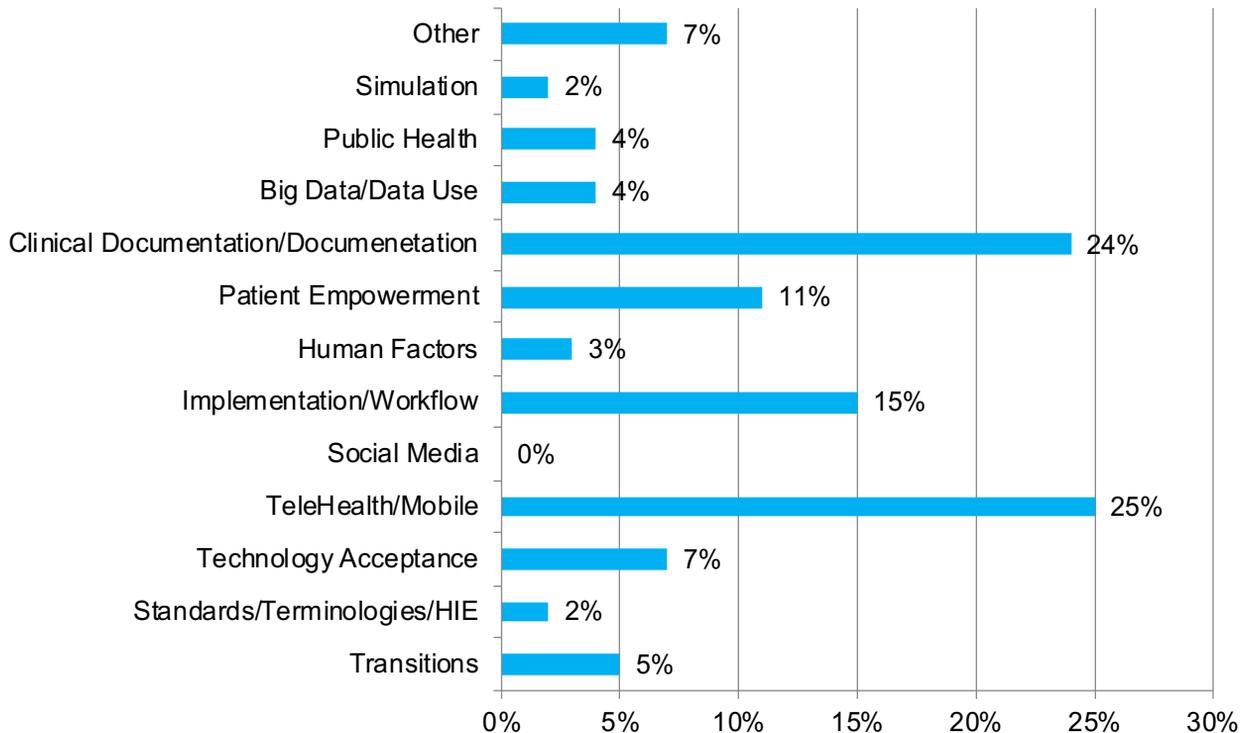


■ USA
 ■ UK
 ■ Korea
 ■ Middle East
 ■ Canada
 ■ Tiawan
 ■ China
 ■ Australia
 ■ Other
 ■

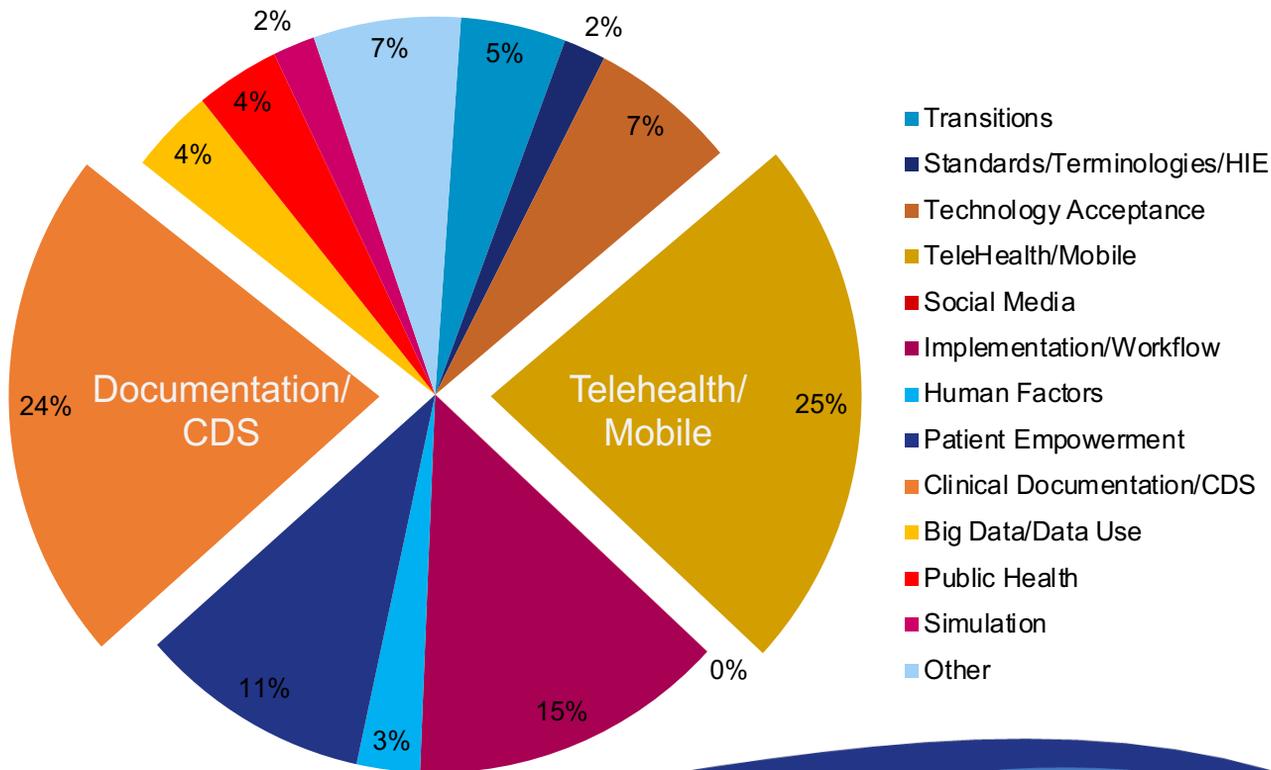
Research Country (%) By Year



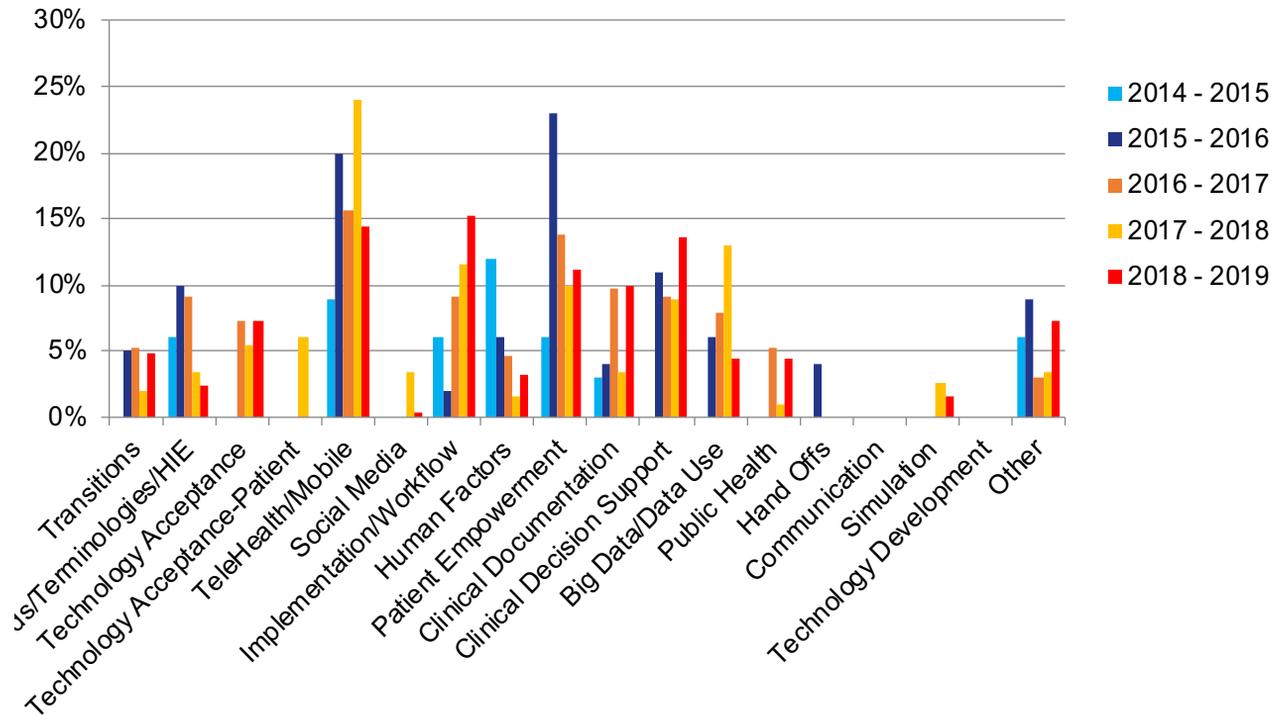
Topic (%) 2017-2018



By Topic (%)



Topic (%) by Year



Step 5 – Collating, summarizing, and reporting the results

Themes Identified

-
1. Clinical decision support (errors) and clinical documentation still main focus ~50% of studies.
 - **Use of EHR data greater for predictive tools – disease progression, deterioration**
 - **New tools related to AI and machine learning, natural language processing**
 2. Patient Empowerment/Self-care
 - Disease management
 - Continuum of care (keep patients out of hospital)
 3. Technology Acceptance by Patient
(Portals, Telehealth, Mobile)
 3. Telehealth **Standards**
 4. Social Media lacking from data (buried in telehealth?)
 5. **Use of telehealth to address health disparities and access**
 6. Patient Reported Data
 - **Sustainability of patient facing technologies**
 7. Patient clearly recognized as stakeholder
 8. Big Data Continues
 - Data Mining and Use, AI, Machine learning
 - Public and Population Health genomic, pharm, other
 9. Inter-professional Care, Care Coordination, Shared Decision Making

Representative Citations

- Hewner, S., Sullivan, S. S., & Yu, G. (2018). Reducing Emergency Room Visits and In-Hospitalizations by Implementing Best Practice for Transitional Care Using Innovative Technology and Big Data. *Worldviews on Evidence-Based Nursing*, 15(3), 170-177.
- Mosley, J. D., Feng, Q., Wells, Q. S., Van Driest, S. L., Shaffer, C. M., Edwards, T. L., ... & Thompson, W. (2018). A study paradigm integrating prospective epidemiologic cohorts and electronic health records to identify disease biomarkers. *Nature communications*, 9(1), 3522.
- Reading, M., Baik, D., Beauchemin, M., Hickey, K. T., & Merrill, J. A. (2018). Factors Influencing Sustained Engagement with ECG Self-Monitoring: Perspectives from Patients and Health Care Providers. *Applied clinical informatics*, 9(04), 772-781.
- Reading, M. J., & Merrill, J. A. (2018). Converging and diverging needs between patients and providers who are collecting and using patient-generated health data: an integrative review. *Journal of the American Medical Informatics Association*, 25(6), 759-771.
- Saleh, S., Alameddine, M., Farah, A., El Arnaout, N., Dimassi, H., Muntaner, C., & El Morr, C. (2018). eHealth as a facilitator of equitable access to primary healthcare: the case of caring for non-communicable diseases in rural and refugee settings in Lebanon. *International journal of public health*, 63(5), 577-588.
- Topaz, M., Murga, L., Gaddis, K. M., McDonald, M. V., Bar-Bachar, O., Goldberg, Y., & Bowles, K. H. (2019). Mining fall-related information in clinical notes: Comparison of rule-based and novel word embedding-based machine learning approaches. *Journal of biomedical informatics*, 90, 103103.

Step 6 – Consultation

Feedback and Professional
Input...

