Advancing Nursing Informatics in the Next 5-10 years: What are the Next Steps?

Research
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Greetings
University of Minnesota Colleagues
“Thank you for your excellence and commitment to informatics”

One of the largest international surveys on the future trends in NI encompassing 31 countries

- Maxim TOPAZ
- Charlene RONQUILLO
- Laura-Maria PELTONEN
- Lisiane PRUINELLI
- Raymond Francis SARMIENTO
- Martha K BADGER
- Samira ALI
- Adrienne LEWIS
- Mattias GEORGSSON
- Eunjoo JEON
- Jude L. TAYABEN
- Chiu-Hsiang KUO
- Tasneem ISLAM
- Janine SOMMER
- Hyunggu JUNG
- Gabrielle Jacklin ELER
- Dari ALHUWAIL
Survey

- August and September 2015
- Six languages (Arabic, English, Korean, Portuguese, Spanish and Swedish)
- Twenty-four questions, both structured and open-ended response options
- 402 total survey participants, 272 (67.7%) response rate
- Responders represented 31 different countries in Asia, Africa, North and Central America, South America, Europe, and Australia
- ~1/3 formal Informatics education
- ~1/3 held PhDs
- ~1/5 (20%) of responses focused on research

- Qualitative Responses open ended survey question:

  “What should be done (at a country or organizational level) to advance nursing informatics in the next 5-10 years?”
Thematic analysis of survey responses: 5 broad key areas for action

- Research, practice, education, collaboration, and visibility

This presentation focuses on:
- RESEARCH
- RESEARCH relationship to:
  - Practice
  - Education
  - Collaboration
  - Visibility
Survey findings:

- Expand research; what foci should NI research take?
  - big data science-based research
  - personalized health
  - electronic data capture to represent the expanse of nursing and interprofessional care across the continuum of care
Survey findings:

- **Expand research; what foci should NI research take?**
  - **big data science-based research**
    - See 4 years of Big Data/Data Science national initiative of experts and organizational leaders hosted by University of Minnesota [z.umn.edu/bigdata](http://z.umn.edu/bigdata)
This presentation focuses on:
RESEARCH

Survey findings:
- Expand research; what foci should NI research take?
  - big data science-based research
  - personalized health


- Consider: person-centric care - & credibility / interchange with HER
- Consider: Biobehavioral/Social Determinants of Health
This presentation focuses on: RESEARCH

Survey findings:

❖ Expand research; what foci should NI research take?
  ❖ big data science-based research
  ❖ personalized health
  ❖ electronic data capture to represent the expanse of nursing and interprofessional care across the continuum of care
    ❖ Extended clinical data capture and exchange
    ❖ Context of care data (Nursing Management Minimum Data Set/LOINC)
    ❖ National Center for Interprofessional Practice & Education, National Center Data Repository/Innovation sites
      ❖ https://nexusipe.org/
      ❖ https://nexusipe.org/advancing/nexus-innovations-network
This presentation focuses on: RESEARCH

Survey findings:

❖ Expand research; what foci should NI research take?

❖ Continue conducting research showing the impact of NI on improving patient care via improved decision making by nurses
  ❖ consider: visualization
  ❖ consider: mobile
  ❖ consider: social media
Improvement Group 2
Westra, B. et al [westr006@umn.edu]

Older adults with no problems in daily activities

Healthier physiological and psychosocial elderly

Household Management
Using Data Visualization to Detect Client Risk Patterns

Monsen, K. A. et al., 2014

Each image (sunburst) was created in d3 from public health nursing assessment data for a single patient. Data were generated by use of the Omaha System signs and symptoms and Problem Rating Scale for Outcomes.

Key:
- Colors = problems
- Shading = risk
- Rings = Knowledge, Behavior, and Status
- Tabs = signs/symptoms

Documentation patterns suggest a comprehensive, holistic nursing assessment.

Kim et al. found that the presence of mental health signs and symptom tends to be associated with more diagnostic problems and worse patient condition.

Using Data Visualization to Detect Nursing Intervention Patterns

Monsen, K. A. et al., 2014

Each image (streamgraph) was created in d3 from longitudinal public health nursing intervention data for a single patient. Data were generated by use of the Omaha System in clinical documentation.

Key:
- Colors = problems
- Shading = actions (categories)
- Height = frequency
- Point on x-axis = one month

From 403 images, 29 distinct patterns were identified and validated by clinical experts.

Documentation patterns suggest both a unique nurse style and consistent patient-specific intervention tailoring.

Mobile data
Top 15 Most Popular Social Networking Sites | March 2016

Top 15 Most Popular Social Networking Sites as derived from our eBizMBA Rank which is a continually updated average of each website's Alexa Global Traffic Rank, and U.S. Traffic Rank from both Compete and Quantcast. "**#**" Denotes an estimate for sites with limited data.

http://www.ebizmba.com/articles/social-networking-websites

1,100,000,000 + 310,000,000 + 255,000,000 + 250,000,000

120,000,000
Visibility
Collaboration and Integration
Funding - $ € BZ$ ¥ kr ₹ ₩ CHF

CTSA
https://ctsacentral.org/

PCORI
http://www.pcori.org/
• Multiple layers of demographic, physiologic, anatomic, biologic and environmental data about a particular individual.
• Possible, but not feasible.

13 Animal-to-Human Diseases Kill 2.2 Million People Each Year


6977 Airports Spanning Globe

OpenFlights Airports Database 01/2012

http://openflights.org/data.html
• Boldly continue with IMIA, IMIA NI, and all related components with conferences, HIMSS and AMIA engagement
• Assertively increase stakeholder representation
• Completely share knowledge and resources
Partnerships are hard – figure out a way to align interests
Policy is hard – require time with government regulators
Perseverance is hard – takes energy

The Third Wave – Steve Chase