MEDINFO23

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From data to evidence-informed leadership and management in care
- current state and future directions

Laura-Maria Peltonen

Adjunct professor, FEANS, FIAHSI

University of Turku, Finland

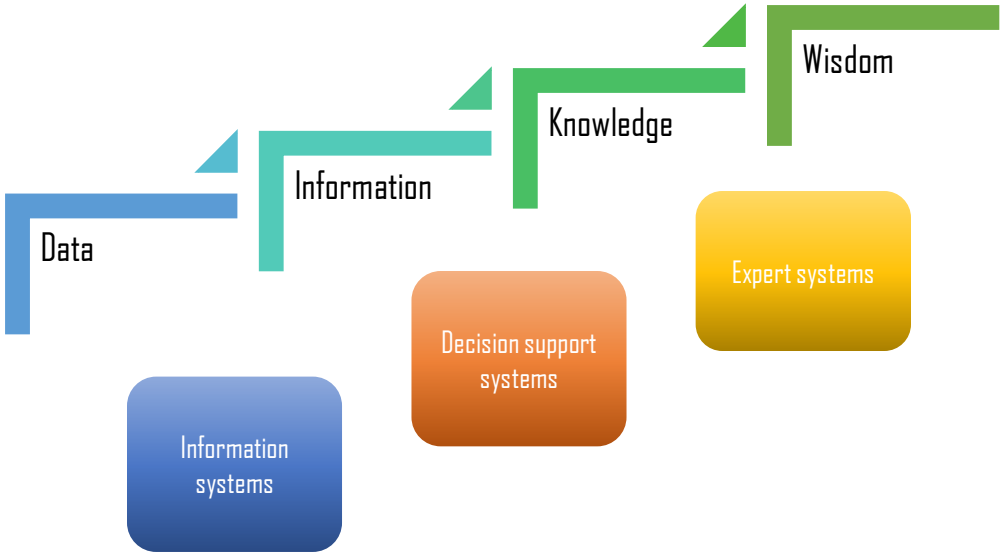
laura-maria.peltonen@utu.fi

AIDH IMIA

Conceptual context

Information to support leadership and management

- Context-related knowledge
- Systems thinking
- Inter-/transdisciplinary efforts
- Preparedness
  - understanding technologies
  - active role in development and implementation of technologies
  - renewable knowledge, skills and attitudes



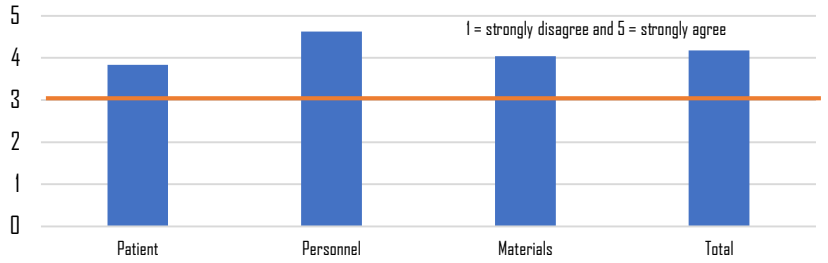
Information systems developed for leadership

- Information systems are associated with improved efficiency, higher quality of care, better productivity and lower costs (Cozzoli et al. 2022, Cui et al. 2016, Sligo et al. 2017)
- Research on information needs exist (Peltonen 2018, Siirala et al. 2020, Lundgrén-Laine 2013)
- Development of solutions to support leadership and management is limited.
- Research on the impact of managerial information systems is scarce.

Satisfaction with information systems (n=435) (Peltonen et al. 2018)

	Median (IQR)
Information systems	1=fully disagree, 5= fully agree
1. support decision-making	4 (3-4)
2. ease access to information	4 (3-4)
3. speed up access to information	3 (3-4)
4. have been developed to assist me	3 (2-4)
5. I use several information systems to support decision-making on a daily basis	4 (3-5)
6. I prefer one information system to collect essential information into one display	5 (4-5)

Situational awareness (n=322) (von Gerich et al. 2022)



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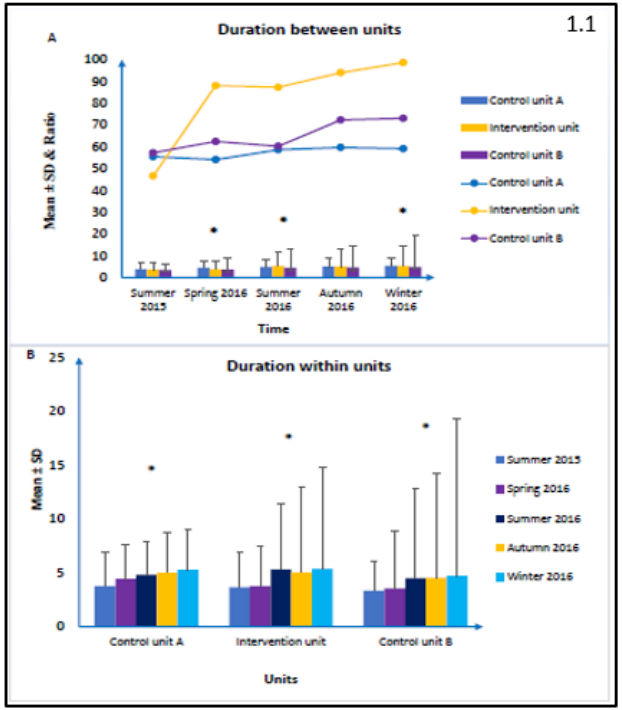
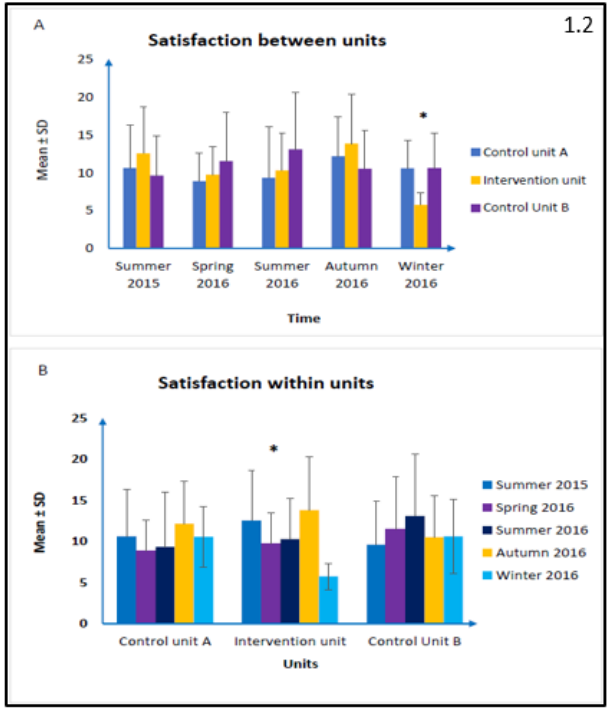
Evaluating information system impact

(Kahsay et al. 2021)

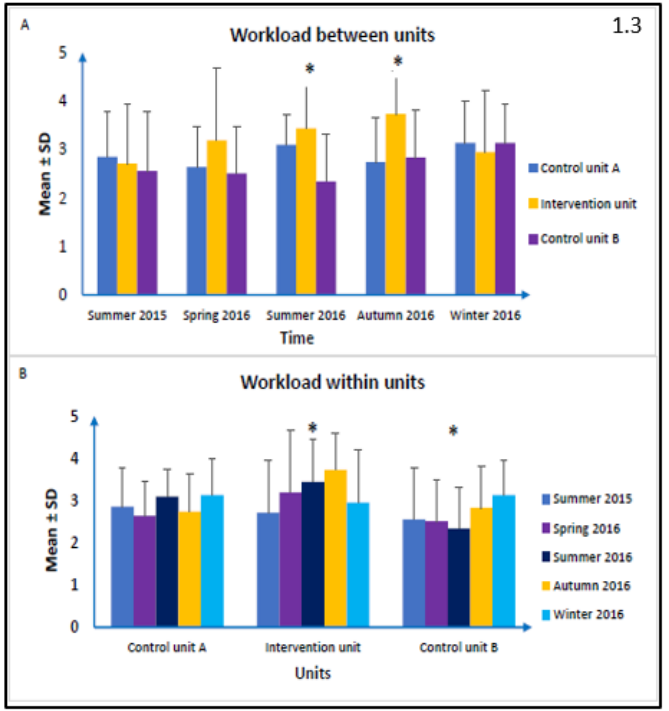
1.1



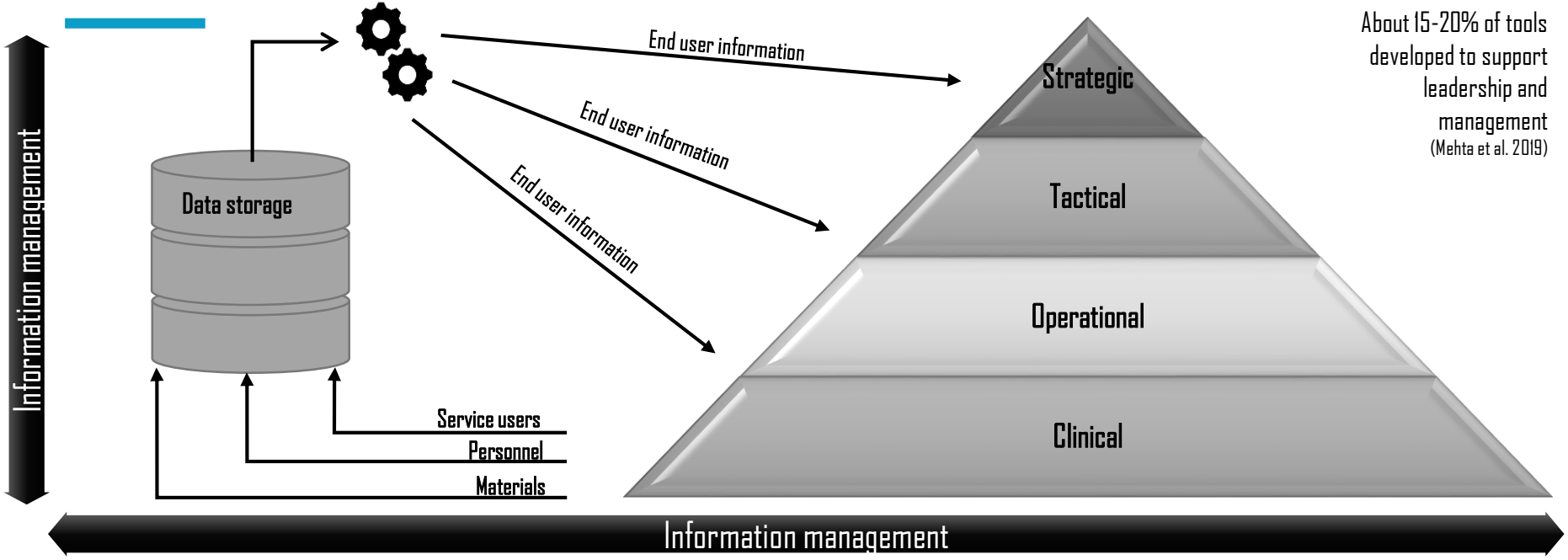
1.2



1.3



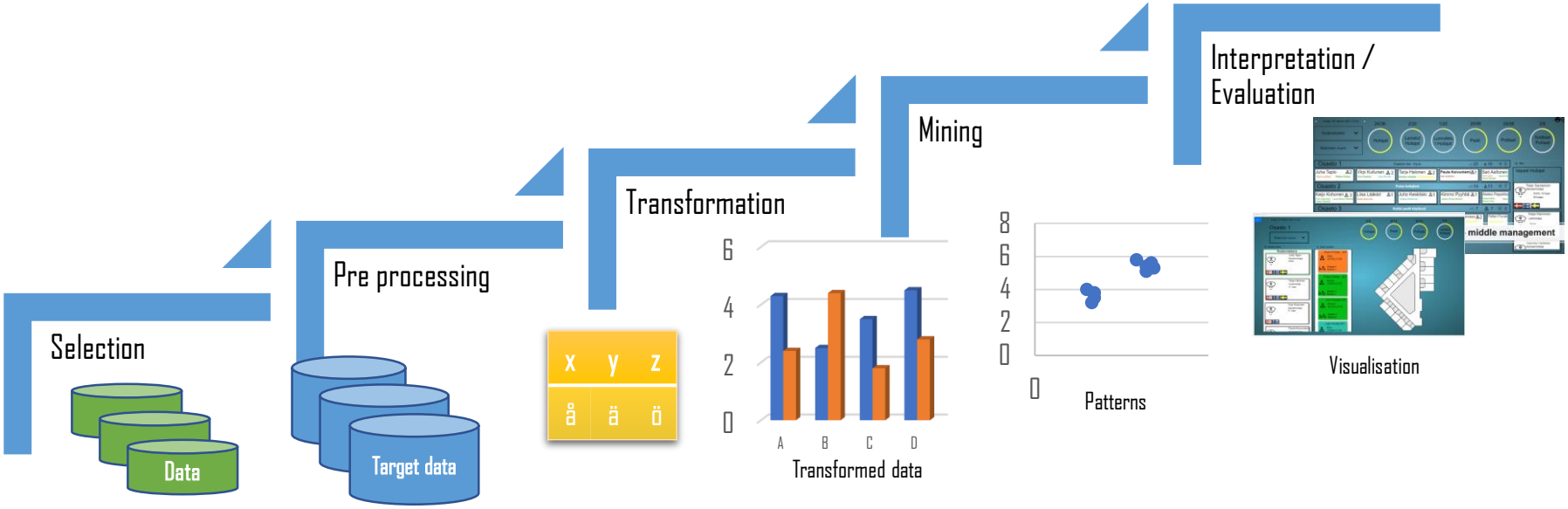
What to measure and how to display it?



About 15-20% of tools developed to support leadership and management (Mehta et al. 2019)

(adapted from Peltonen 2022)

Process of data utilisation



Quality and safety assessment

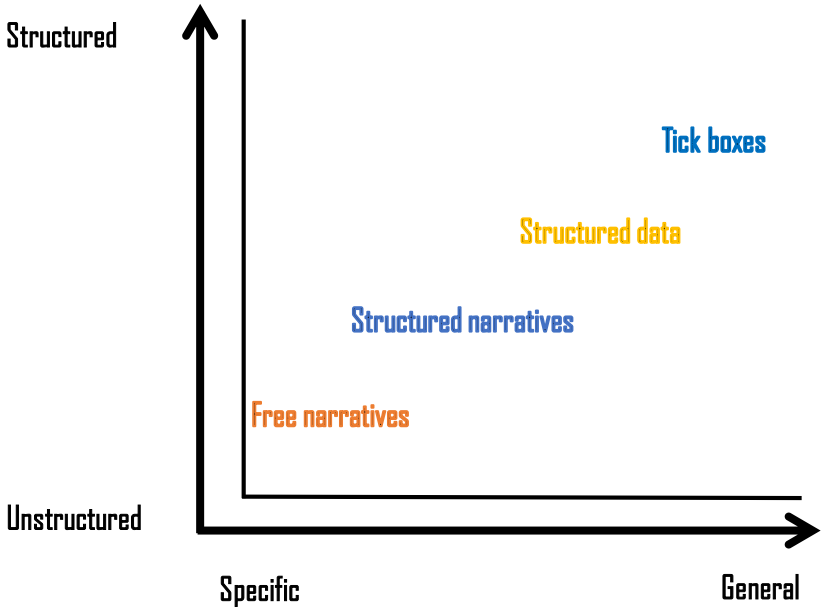
- Meaningful for the organisation, professional and patient
  - Care go beyond technical quality
  - Perceived vs. clinical quality
  - Different points in process
  - Immediate and upstream drivers
  - Collective and individual assessment
- Clearly defined, valid, reliable and available measures.
- Development of measures requires skills to define specifications, data collection and statistical analysis.

(Hanefeld et al. 2017)

Health records as data source for leaders

Understanding structures and contexts that data are collected wherein.

- Inconsistent nature of how data are collected.
- Clinicians typically document "clinically relevant" data.
- Data may reflect cognitive biases and implicit biases.
- Bias and validity issues exist on social determinants of health data and some data are missing nonrandomly.
- Data extraction and pre-processing procedures to be acknowledged as well as structure and comprehensiveness of data.



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EDITORIAL | Free Access

Artificial intelligence in health care: Implications for nurse managers

Laura-Maria Peltonen PhD, Maxim Topaz PhD

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The systemic effect of digitalisation, technological developments, improved information processing infrastructures, and the use of data is rapidly transforming health care systems internationally. An increasing pace of development and adoption of artificial intelligence-based technologies have raised expectations, discussions, and concerns. These technologies offer great potential to support different stakeholders in the health care setting; however, all direct and indirect impacts of using these technologies are not always clear. Assessment frameworks have been introduced for generating evidence for decision-makers regarding, for example, health, economic, organisational, social, legal, and ethical implications of these

Categories found:
1. Relevance and ethical issues
2. Assessing and improving quality of care
3. Risk prediction
4. Robotics in nursing
5. Nurses' experiences of AI-base applications

applications and priorities in health care and nursing management?

Yanjiao Chen PhD, Paulo Moreira PhD, Wei-wei Liu MA, Michelle Monachino PhD, Thi Le Ha Nguyen PhD, Aihua Wang MD

Journal of Nursing Management

Artificial intelligence and robot nurses: From

Conclusions

- Information management as key organisational process –requires context and systems thinking.
  - Inter-/transdisciplinary approaches
  - End-user involvement
  - Competencies and structures for support
- Research on the topic is challenging and a variety in results may be explained by weaknesses study designs.
- Evidence-informed leadership requires intuitive customised solutions that allow real-time and error-free situational snapshots based on high-quality data in the right format.

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