

Translational research informatics

Enhancing the adoption of best practices in the community

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Trends

From treatment to **lifestyle management** and **prevention** and **early diagnosis** towards **personalized medicine** and **care** giving more **power** and **responsibility to the patient**



Translational research informatics

- From bench to bedside
- From research to practice



Vision

- Higher percentage of healthy people due to
- personal lifestyle management based on genetic disposition, clinical evidence and environmental factors and social behavior
 - more accurate early diagnosis
 - individual targeted therapies

Future?

Healthons

= distributed affective Intelligent Caring Creatures (ICCs)
(Bushko, 2005)

Future?

"ICCs are *healthons* carried by consumers in their bodies, on their bodies and are embedded in their homes, offices, cars, planes, furniture, and robo-pet assistants."

"Healthons are tools combining prevention with diagnosis and treatment based on

- continuous monitoring and
- analyzing of our vital signs and biochemistry of the body."

"Healthons will be able to talk to each other and be able to explain what is happening with consumer's health at any moment."

"Healthons in 2050 will be like vitamins in 2005 – broadly available and used by everyone, but personalized and intelligent."

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Prerequisites today

- Basic research
 - Open source; large amounts of data; analysis tools
- Clinical research
 - Evidence-based medicine; disease specific national registers
- Clinical practice
 - Bad compliance with evidence; individual decision making
 - Available IT infrastructure according to industrial standards; closed systems with large local differences; high security; compliance with legislation
- Discrepancies
 - Goals
 - Standards

Challenges

- How to adapt current and future knowledge to individual care?
- Technical: Common standards and ontologies for semantic interoperability; standardized data integration; “intelligent” analysis and combination of large amounts of data
- Medical: From disease-specific to holistic
- Social: Change management
- Regulatory: Legislation and Ethics
- Economical: High cost for new therapies?

The roadmap (some milestones on the way...)

- Consumer/patient as “door opener”?
- Integration of evidence-based clinical decision support into EHR
- Adopting the PHR
- Integration of genetic information into the PHR
- Regulations/ethics
- Education, education, education...

"We try to change a pre-industrial environment with industrial tools to meet post-industrial needs and requirements"

Free after Martin Ingvar, said at KI-NKS meeting 090313

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