WELCOME TO HEALTH SCIENCES

www.utwente.nl/go/hs
IN THIS PRESENTATION

1. Introduction
2. Optimization of healthcare processes
3. Personalized monitoring and coaching
4. Innovation in public health
5. Master Assignments and Career prospects
1. INTRODUCTION
GOVERT VERHOOG, PROGRAMME MANAGER
A health scientist of the University of Twente has a focus on improving the quality of (health)care in terms of efficiency and effectiveness.
ROLE HEALTH SCIENTIST

The health scientist does so by looking at:

- Patient and caretaker level
- Healthcare organization
- Healthcare system & society
ROLE HEALTH SCIENTIST

The processes and systems are analyzed, (re)designed, implemented and evaluated.

The health scientist possesses the ability to evaluate and define the value of technology within healthcare from a multi-disciplinary perspective and to advise relevant stakeholders with the implementation of (medical) technologies.
MULTIPLE STAKEHOLDERS HAVE DIFFERENT (OFTEN CONFLICTING) OPTIONS

- Government
- Patient
- Insurance companies
- Doctors
- Hospital
- Developers

Breath-analysis / e-Nose
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HEALTH ECONOMIC MODELLING

- Students will learn the basic concepts of systematic reviews and evidence synthesis.

- They will learn and present about different types of health economic models, and how these can be used for decision making in healthcare.

- Particular attention is paid to patient-level models as means to accurately reflect real-world clinical practice.
STAKEHOLDER PREFERENCE ELICITATION AND DECISION SUPPORT

- Catalogue methods to elicit patient preferences, values and needs and apply these in health care decision making in the clinical, organizational and societal context
- Design, analyze and interpret the results of a preference study to perform a stakeholder centered health technology assessment analysis
DATA SCIENCE

- Basis skills in data preparation and data visualization
- Data mining (discovering patterns in large datasets)
2. SPECIALIZATION

OPTIMIZATION OF HEALTHCARE PROCESSES
## PROGRAMME STRUCTURE

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OPTIMIZATION OF HEALTHCARE PROCESSES

- Optimizing processes in and between healthcare organizations
- Using technology, innovations or by finding alternative ways of organizing healthcare
- Effectively and efficiently design and implement healthcare processes
FINANCE & HEALTHCARE PURCHASING

Healthcare purchasing as a management issue: both from the perspective of a healthcare provider and a healthcare insurer / municipality.

Main subjects:

- The purchasing process of healthcare providers and insurers
- Sourcing, financing and contracting of care
- Negotiations
- Group purchasing organizations
- Healthcare marketing and entrepreneurship
- WMO purchasing
- Healthcare purchasing strategies and supplier management
OPTIMIZING HEALTHCARE PROCESSES

- To provide students with various tools and instruments for the analysis and optimization of healthcare processes

- To train Health Sciences students in Operations Management (OM) topics:
  - Planning and scheduling
  - Capacity management
  - Inventory control
  - Warehousing
  - Maintenance management
  - Transportation

- Apply these tools to (simple) healthcare settings
QUALITY MANAGEMENT IN HEALTHCARE

Quality and safety issues are becoming increasingly important in healthcare organizations, especially in those with complex, technological processes.

- Quality management, accreditation and improvement techniques
- Benchmarking and the relation with efficiency
- The impact of value based healthcare
- Indicator design and application in process improvement
- Safety, risk management and reputation effects
- Communicate on quality and safety issues
3. SPECIALIZATION
PERSONALIZED MONITORING & COACHING
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PERSONALIZED HEALTHCARE IN A DATA DRIVEN SOCIETY

- Personalized healthcare
  - Tailoring products, services to needs of *individual* clients
  - From disease-centered to patient-centered; *health as the ability to adapt and to self manage*, (Huber, 2011)

- Monitoring and coaching
  - Monitoring: collecting multiple types of data
  - Coaching: using this data to coach people in a personalized way
Walter has diabetes :-(

This is Walter
WHAT IS EHEALTH?

Ehealth refers to the use of technologies to improve health, well-being and healthcare.

Not solely a technical development, but a way of thinking on how to improve health(care) and how technology can support this.
WHY EHEALTH?

Trends in health(care):

- More than 50% of the world lives with chronic disease.
- Self-management.
- Prevention.
- Efficiency.
- Shared decision-making.

→ eHealth might be a solution
A CONTEXTUAL INQUIRY

- Mixed-methods: data collection (FitBit) & interviewing
- Exercising & sedentary behaviour
DESIGNING PERSUASIVE TECHNOLOGY
- Monitoring & coaching of forensic psychiatric patients
- Persuasive features
- Prototyping
- Gamification, Virtual Reality
EVALUATING EHEALTH

- Mixed methods
- Log data analysis
- Personal Health Records; web-based interventions
4. SPECIALIZATION
INNOVATION IN PUBLIC HEALTH
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THE HEALTHCARE DELIVERY SYSTEM

Impact of ecological degradation
ASSESSMENT OF CARE INTERVENTIONS
Safety and the built environment

ANTIBIOTICS RESISTANCE
Toxicity of foodstuffs

Self-reliance of the aging population

Risk of particulate matter
CROSS-BORDER PANDEMIC STRATEGIES

Developing world perspective
POPULATIONS AT RISK, MIGRATION
PACKAGING MARKETING FOODSTUFFS

RECREATIONAL SAFETY
Cholesterol, blood pressure, obesity

SMOKING CESSATION

UNIVERSITY OF TWENTE.
INNOVATION IN PUBLIC HEALTH

This track is about public healthcare and how it can be approved.

Public health focuses on health at various levels:

- Populations at risk
- Communities
- Health differences in developing countries
- Health at a global scale
BEYOND INDIVIDUAL HEALTH AND HEALTHCARE
HEALTH IN ALL POLICIES
APPLICATION

How can I facilitate the process of policy-law-regulation-making?

How can I promote / facilitate interaction between various agents?

How can I give voice to people, so that their interests are heard?
IS SES ASSOCIATED WITH DISEASE MANAGEMENT PROGRAMME PARTICIPATION IN ALMELO?
How does money flow in the field of public health?
What consequences may we expect?
What is effective?
What is efficient?
5. MASTER ASSIGNMENTS AND CAREER PROSPECTS
IS RIGHT FOR YOU?

WHAT KIND OF JOB IS RIGHT FOR YOU?

Local
Health policy advisor

National
Healthcare provider (hospital)

International
Design & implementation of prevention programmes

Inter-national
Insurance

Researcher

Data analyst

Health technology industry (Philips, Demcon)

In nursing

Health process innovator

In physio-therapy

………

In nursing

………
OUR GRADUATES NOW WORK ORGANIZATIONS WHERE
EXAMPLES OF MASTER ASSIGNMENTS

1st & 2nd YEAR THESIS:

- Health Technology Assessment van verbeterde methode voor de diagnostiek van darmkanker
- Early health technology assessment of a point-of-care analyzer to improve the diagnosis of diabetes
- Patient satisfaction on the ZGT fast track poli ‘chest pain’
- E-health in early cardiac rehabilitation: Development and evaluation of an online exercise program for patients who underwent cardiac surgery
- Cost-effectiveness of a self-management intervention for patients with Chronic Obstructive Pulmonary Disease and common comorbidities
Thesis: Assessing the cost impact of the transition of medical imaging from the secondary to the primary care: a growing responsibility for the general practitioner

Life after Breast Cancer: late effects and quality of life up to five years after treatment

Development of a technology supported lifestyle intervention for obesity

Anderhalve lijnszorg in twente, Onderzoek namesn zorgverzekeraar Menzis, naar de optimalisatie van anderhalve lijnszorg in Twente.

Effect of guidelines and decision trees on the care plan determined in the multidisciplinary team meetings.
YOU DESIGN THE FUTURE OF HEALTHCARE
6. QUESTIONS?