



# HCI in Healthcare – Introductory Session

4 March 2019



Fakultät für Informatik | Technische Universität Wien

## Lecturers etc

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## Introductions

- Us
- You
  - Your name
  - Background: Media or Medical Informatics
  - Why you have chosen to do this course, what you hope to get out of it

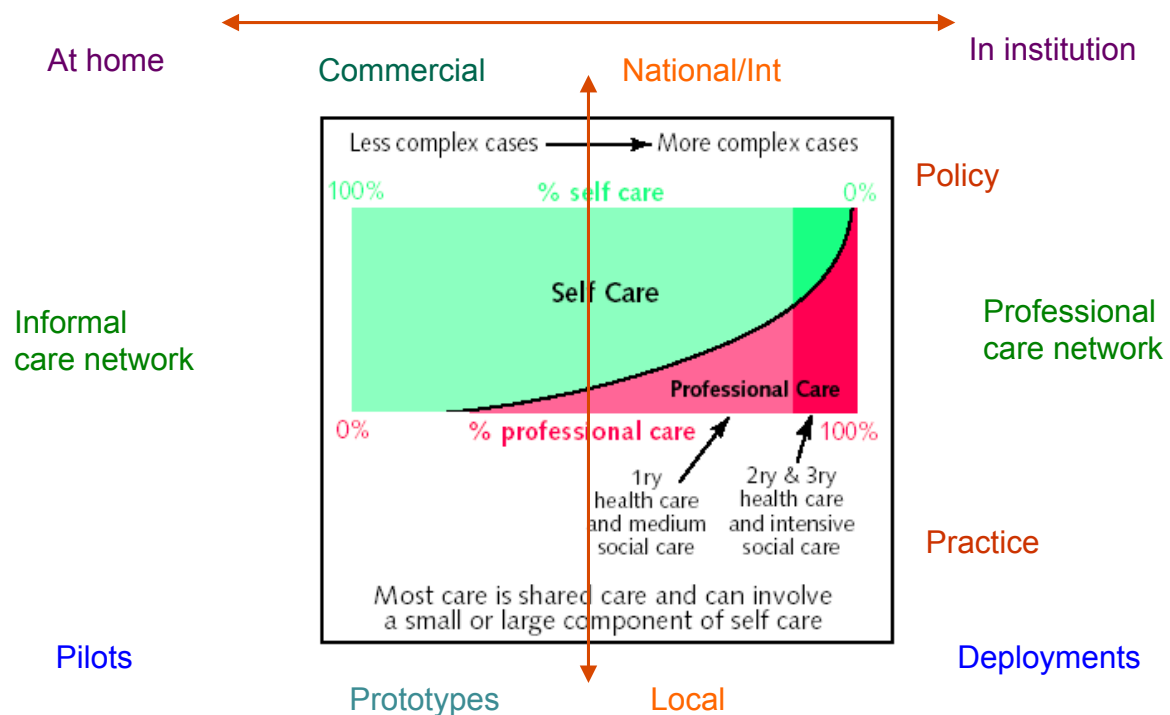


## Aims

- Understand the basic principles (theories, concepts and methods) of **Human Computer Interaction (HCI)** and **user-experience design**
  - be able to apply the basic principles in practical work
- Understand the specific HCI-related issues in **designing ICT for healthcare**, taking into account a range of healthcare settings and applications
  - be able to design health applications from an HCI perspective
  - be able to critically reflect and evaluate systems from an HCI perspective

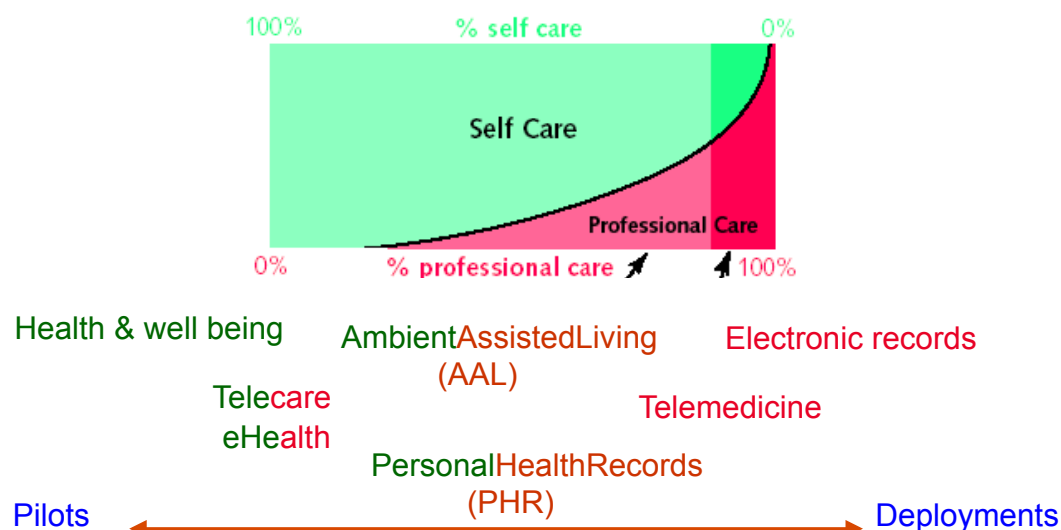


# Healthcare – complex multi-dimensional space!



[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_1101762.ppt](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_1101762.ppt)

## Technologies across the spectrum

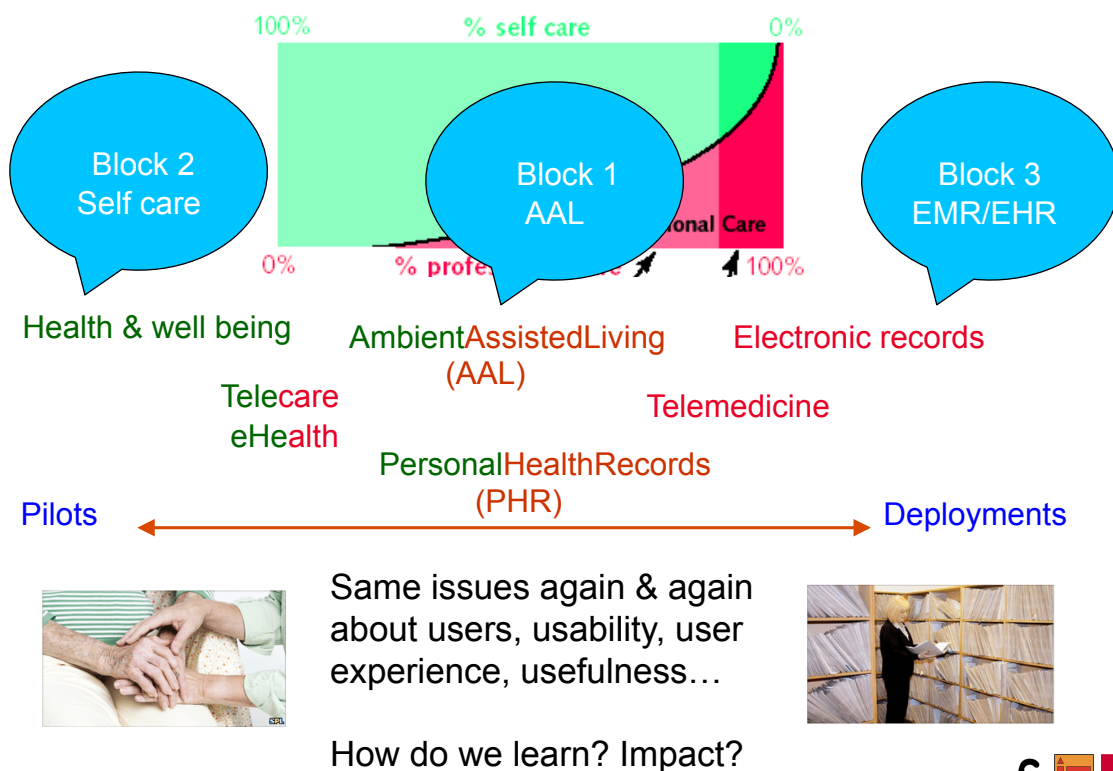


Same issues again & again about users, usability, user experience, usefulness...



How do we learn? Impact?

## Three content blocks exploring different points on the spectrum (after an Intro block)



## Broad topics

- Introduction
  - Human Computer Interaction - Including user experience design, user-centred design and usability
  - Healthcare-specific issues in
    - designing interfaces and interactions in healthcare
    - understanding the broader collaborative context of healthcare
- Designing health IT systems
  - To fit in with healthcare workpractices
  - To support shared care at home
  - To support self care
- Evaluation of healthcare systems in use



## Broad topics

- Introduction [INTRO BLOCK & FINAL ESSAY]
  - Human Computer Interaction - Including user experience design, user-centred design and usability
  - Healthcare-specific issues in
    - designing interfaces and interactions in healthcare
    - understanding the broader collaborative context of healthcare
- Designing health IT systems
  - To support shared care at home [AAL BLOCK 1]
  - To support self care [SELF CARE BLOCK 2]
  - To fit in with healthcare workpractices [EMR BLOCK 3]
- Evaluation of healthcare systems in use [EMR BLOCK 3]



## Teaching and Learning Approach

Two broad parts

- Basics of HCI (from Interaction Design to CSCW concerns)
  - More lecture-based with mini exercises – depending on your background and knowledge
- HCI-specific issues related to Health IT
  - Case studies; (lots of!) readings from literature
- Overall approach
  - More small group based
  - In-class presentations/discussions
  - Mix of individual and group exercises eg
    - Analysis of videos of doctor interactions with an EPR
    - Hands-on design, prototyping and evaluation project (self-care scenario)



## Teaching and Learning Approach

- Masters level students!
  - Explore issues together
  - Highly interactive and discursive
  - Details of topics / foci for group work etc to be decided together
  - Learning by hearing, discussing, doing and reflecting ...
  - **\*\*\*Will require significant self-work\*\*\***  
eg reading in preparation for lectures, and hands-on exercises between sessions, group work



## Dates and times

- Blocked sessions / Lectures planned for
  - 09:00-12:00 on some Mondays
  - Library also available at this time when no lecture for your own work
  - Proposed schedule in TISS
- TUWEL site
- Wiki (see later slide)



## 2019 SS Schedule & content outline

### BLOCK 0: INTRO

- 11 March: Healthcare and interface/interaction design issues
  - Review HCI; User Centred Design process
  - Review healthcare and why HCI in Healthcare is important (bad design kills!)
  - After this session, you will be asked to complete a number of exercises and to document them on the wiki (see later slides for more information)

### BLOCK 1: AAL

- 25 March: AAL – introduction and experience issues
- 1 April: AAL – robots in AAL
- 29 April – presentations (format TBD)



## 2019 SS Schedule & content outline

### BLOCK 2: Self care

- 8 April: Self care, mHealth etc, experiences of self care – patient perspective
- 6 May: Self care (Cont)
- 13 May: (Optional: work in progress – opportunity for feedback)
- 20 May: Presentations (TBD)

### BLOCK 3: Electronic health records (EHR)

- 27 May: Hospitals/institutions & Electronic medical records – design issues
- 3 June: EHR (Cont)
- 17 June: Presentations: EHR video analysis



## Workload distribution

- 6 ECTS = **150 hours** of work

*Might be some interchange in these amounts and of course always depends on you as an individual!*

- In-class sessions - 26 hours (Note: while we have the room booked 9-12, some sessions will finish earlier)
- Reading prep & Block 0 exercise [10 marks] - 10 hours
- Group work – 80 hrs/person
  - Block 1 AAL (group or ind TBD) project work [20 marks] – 25 hrs
  - Block 2 Self care group project work [25 marks] – 30
  - Block 3 EMR group project work [20 marks] – 25
- Individual assessment work [25 marks] – 34 hours



## Grading – content & due dates

- Block 0: Exercise based on prep readings (TBD) 10% [22 March]
- Block 1: AAL design ideas (Group or ind TBD) 20% [29 April]
  - Report/presentation [final format TBD]
- Block 2: UCD – self care project (Group) – 25% [19 May]
  - UCD-based design-prototyping-evaluation project with a healthcare focus (User research, iterative design, development, evaluation of prototype; peer feedback, presentation and report )
- Block 3: EHR video analysis project (Group) – 20% [17 June]
  - Group report/presentation [final format TBD]
- Individual report – 25% [30 June]
  - Essay – critical synthesis/literature review on topic of your choice (20%); Reflective learning report - 5%



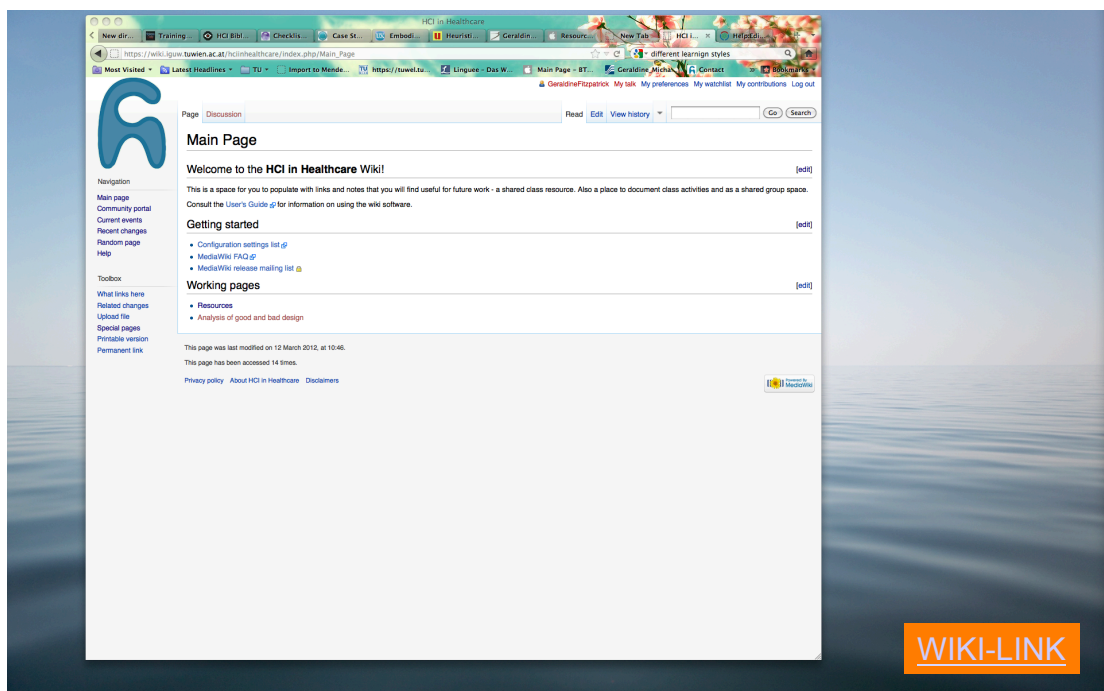


## Policies around assessments/final note

- Once you submit a first piece of assessed work, you will receive a note for this course
- To pass the course overall you need to
  - Submit and pass each component of the course
- We are happy to re-negotiate deadlines with consensus agreement from the whole class
  - But once deadlines are agreed they are taken seriously
- Late submissions will be subject to a late penalty
  - 5% (24 hours late)
  - 10% (1 day-1 week late)
  - 25% (>1 week)



## Wiki – for group project work etc



Contributions supported by class Wiki as working space

~~\*Email Florian Holzner [flho@igw.tuwien.ac.at](mailto:flho@igw.tuwien.ac.at) for wiki access\*~~



## Communication

- Students post notes on the wiki (see previous slide)
- Students upload assignments on TUWEL
- Students can send questions to the lecturers, of course. Send general questions, or if you are not sure whom to ask, to [florian.gueldenpfennig@tuwien.ac.at](mailto:florian.gueldenpfennig@tuwien.ac.at) as well as [maximilian.ulreich@tuwien.ac.at](mailto:maximilian.ulreich@tuwien.ac.at)
- Lecturers make announcements on TISS → so please all students, check your mail account that is associated with TISS regularly
- Lecturers post exercises on TUWEL (after announcements in class and on TISS)
- Lecturers send individual mails to student email accounts, e.g., wiki access data



## HCI and Healthcare: Resources

Geraldine Fitzpatrick

Human Computer Interaction (HCI)



## Suggestions - healthcare

- Subscribe to 'telecare aware' newsletter to keep up to date with discussions in the healthcare sector
  - <http://www.telecareaware.com/> (twitter: @telecareaware)
- Subscribe to 'table of content' alert emails whenever a new issue of a journal is published eg
  - [International Journal of Medical Informatics](#)
  - [Health Informatics Journal](#)
  - [Journal of the American Medical Informatics Association](#)
  - [Journal of Medical Internet Research](#)
  - [Methods of Information in Medicine](#)
- Follow these people on twitter
  - [@trishgreenhalgh](#) @clarkmike (UK telehealth and care); @icmssupdate; @ehrandhit;



## Healthcare related Resources

- Dedicated **conferences**
  - [Pervasive Health](#) in Trento May 2019
  - [dHealth Summit](#) in Vienna May 2019, Schönbrunn
- Various **workshops @ CHI conference** – current 'hot topics'
  - [Infrastructuring Work of Patients and Caregivers](#) (2019)
  - [Computing in Mental Health](#) (2016)
  - [Advances in DIY Health and Well Being](#) (2016)
  - [Tangibles for Health](#) (2016)
  - [HCI and Health](#) (2015) [HCI fieldwork in Healthcare](#) (2014)
  - [MedCHI – Safer interaction in medical devices](#) (2013)
- Medical informatics **organisations**
  - [MedInfo](#), [AMIA](#), [IMIA](#)
- Loads of sites talking about ICT & health/care eg
  - [Future of health](#)



### **Overview ‘Review’ Articles**

\*\*\* Fitzpatrick, G. and Ellingsen, G. (2012)

[A Review of 25 Years of CSCW Research in Healthcare: Contributions, Challenges and Future Agendas](#). *Computer Supported Cooperative Work (CSCW)*, Online First.

\*\*\* Tentori, Hayes & Reddy (2011) *Pervasive Computing for Hospital, chronic and preventive care*, Foundations and Trends in Human-Computer-Interaction, Vol 5 No 1. [[pdf](#)]

Nunes, F., Verdezoto, N., Fitzpatrick, G., Kyng, M., Grönvall, E., and Storni, C. Self-care Technologies in HCI: Trends, Tensions, and Opportunities. *ACM Trans. On Computer-Human Interaction (TOCHI)*, 2015, 22:6, article 33.

PLUS Numerous healthcare informatics, medical informatics books

