Health

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April 18, 2023

Overview

1 Introducing CHI Health Subcommittee & Its History

2 Beyond CHI Health

3 Framing papers

HEALTH

This subcommittee is suitable for contributions related to **health, wellness, and medicine, including physical, mental, and emotional well-being, clinical environments, self-management, and everyday wellness**. Accepted papers will balance the rigor required in all CHI submissions with awareness of the challenges of conducting research in these challenging contexts. The research problem can be grounded in both formal and informal health and care contexts. Submissions to this subcommittee will be evaluated in part based on their inclusion of and potential impact on their stakeholders. We welcome papers that are **empirical, theoretical, conceptual, methodological, design, and systems contributions**. Papers must have a clear and novel contribution to HCI in terms of **our understanding of people's interaction with technology in a healthcare context, or the design of health and wellness technologies**. For example, systematic review or usability studies associated with clinical trials must also have contributions for the HCI community.

History of CHI Health Subcommittee

Featured Community
(CHI 2011-2013)

Gillian R. Hayes

Madhu Reddy

SIGCHI Health Community

Health, Accessibility, and Aging
(CHI 2017-2018)

This subcommittee is suitable for contributions to independent and healthy living over a lifetime. It combines the areas of (i) accessibility for people with disabilities, (ii) health, wellness, and aging; and, (iii) technology for and studies involving older adults. Submissions to this subcommittee will be evaluated in part based on their inclusion of and potential impact on their target user groups and other stakeholders. This subcommittee balances the rigor required in all CHI submissions with awareness of the challenges of conducting research in these important areas.

Accessibility papers are those that deal with technology design for or use by people with disabilities including sensory, motor, and cognitive impairments. We have indicated below which ACs will handle the "health" papers and which will handle "accessibility and aging"; **please add the keyword "health," "accessibility," or "older adults" as appropriate to your submission in PCS so that we can be sure to direct your submission to the appropriate subset of this committee.**

Reference: CHI 2017, CHI 2018

Health
(CHI 2019-2023)

This subcommittee is suitable for contributions related to **health, wellness, and medicine, including physical, mental, and emotional well-being, clinical environments, self-management, and everyday wellness**. This subcommittee balances the rigor required in all CHI submissions with awareness of the challenges of conducting research in these challenging contexts. This subcommittee welcomes all contributions related to health, including empirical, theoretical, conceptual, methodological, design, and systems contributions. Submissions to this subcommittee will be evaluated in part based on their inclusion of and potential impact on their stakeholders.

Reference: CHI 2019

Most of the Subcommittee Description Stayed the Same

2019-2023

This subcommittee is suitable for **contributions related to health, wellness, and medicine, including physical, mental, and emotional well-being, clinical environments, self-management, and everyday wellness.** This subcommittee balances the rigor required in all CHI submissions with awareness of the challenges of conducting research in these challenging contexts. This subcommittee **welcomes all contributions related to health, including empirical, theoretical, conceptual, methodological, design, and systems contributions.** Submissions to this subcommittee will be evaluated in part based on their inclusion of and potential impact on their stakeholders.

Addition and Changes to the Description Overtime

2020

Note that if your paper's topic is on **"health of marginalized groups"**, it can potentially fit the description of Health and Specific Apps subcommittees. We suggest to use the following guideline for determining which subcommittee to submit your paper to. If your contribution is about **how health or interaction with the healthcare system was improved for any population**, then submission should be to Health. If your contribution is more about the marginalized community, then the submission should go to Specific Apps.

Addition and Changes to the Description Overtime

2021

The research problem can be grounded in **both formal and informal health and care contexts.** Papers must have a **clear and novel contribution to HCI in terms of our understanding of people's interaction with technology in a healthcare context, or the design of health and wellness technologies.** For example, systematic reviews or usability studies associated with clinical trials must also have contributions for the HCI community.

Integrating Descriptions from 2019-2021

2022-2023

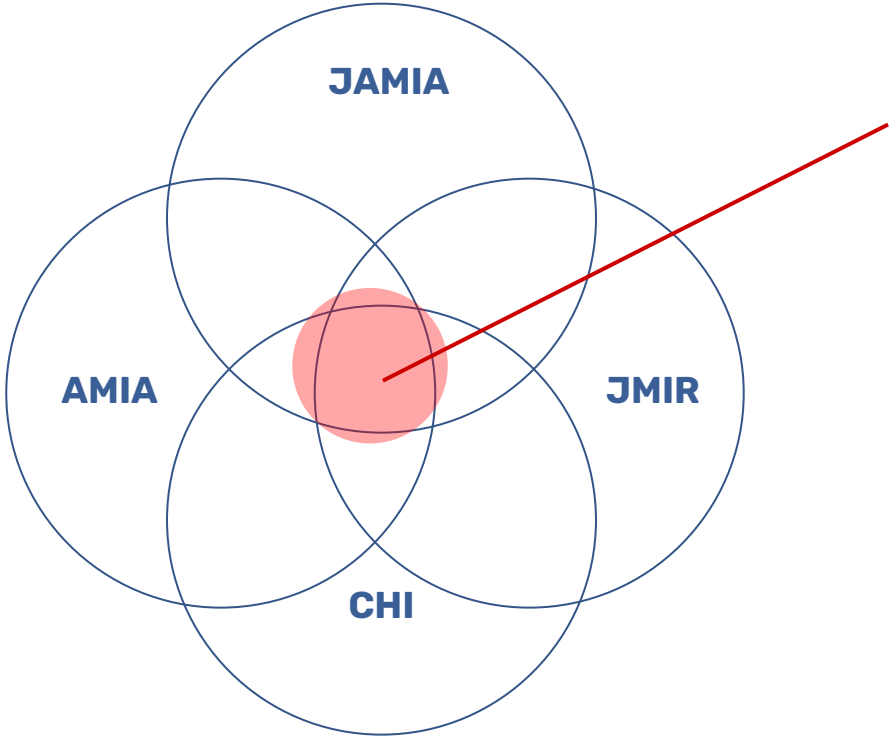
This subcommittee is suitable for contributions related to health, wellness, and medicine, including physical, mental, and emotional well-being, clinical environments, self-management, and everyday wellness**.** Accepted papers will balance the rigor required in all CHI submissions with awareness of the challenges of conducting research in these challenging contexts. **The research problem can be grounded in both formal and informal health and care contexts.** Submissions to this subcommittee will be evaluated in part based on their inclusion of and potential impact on their stakeholders. We welcome papers that are empirical, theoretical, conceptual, methodological, design, and systems contributions. **Papers must have a clear and novel contribution to HCI in terms of our understanding of people's interaction with technology in a healthcare context, or the design of health and wellness technologies.** For example, systematic reviews or usability studies associated with clinical trials must also have contributions for the HCI community.

Other Disciplines

Majority of the references

Health & Medicine	Psychology	Medical & other adjacent informatics	Computational Systems & Software Engineering	Public Health & Social Work, Nursing, Sociology, etc.
• BMC Infectious Diseases • International Journal of Gynecology & Obstetrics • American Journal of Clinical Medicine	• American Psychological Association • British Journal of Psychology • Journal of Social and Clinical Psychology	• JMIR	• Software Engineering in Health Care	• Social Work in Mental Health • BMC Nursing • Sociology of Health & Illness • News

Beyond CHI Health



SIMILARITIES

Health Informatics, medical informatics, Health-related HCI

Theoretical, methodology, evaluation, or new applications

DIFFERENCES

Target audience

CHI: Computer**-H**uman **I**nteraction

The health subcommittee focuses on the **application of HCI research to health domains**. This includes studies on the design, evaluation, and deployment of interactive technologies for health-related contexts. Contributions in this venue may involve user-centered design, usability studies, and the development of novel interaction techniques or systems for health purposes.

Example topics

User-centered design, usability studies, and the development of novel interaction techniques or systems for health purposes

AMIA: American **M**edical **I**nformatics **A**ssociation

AMIA focuses on the **application of informatics** in healthcare, biomedical research, and public health. Research contributions in this venue tend to emphasize the development and evaluation of innovative informatics solutions, methods, and tools to improve healthcare delivery, patient outcomes, and clinical decision-making.

Example topics

Electronic health records, clinical decision support, data analytics, and natural language processing

JAMIA: Journal of **A**merican **M**edical **I**nformatics **A**ssociation

Like AMIA, JAMIA focuses on the application of informatics in healthcare, biomedical research, and public health. However, as a journal, JAMIA provides a publication venue for in-depth, rigorously reviewed research articles.

Example topics

Electronic health records, clinical decision support, data analytics, and natural language processing (greater emphasis on methodological rigor and reproducibility)

JMIR: Journal **of M**edical **I**nternet **R**esearch

JMIR focuses on the **intersection of technology, the Internet, and healthcare**, with an emphasis on **innovative applications** of emerging technologies to improve health outcomes.

Example topics

Telemedicine, mobile health, wearable devices, online interventions, and health-related social media

Which RQ comes from which venue?

1. A study on the design and evaluation of a novel interaction technique for a health-related mobile application

2. A paper on the development of a clinical decision support system using machine learning techniques

3. A study exploring the effectiveness of a web-based intervention for mental health

Which RQ comes from which venue?

1. A study on the design and evaluation of a novel interaction technique for a health-related mobile application

CHI

2. A paper on the development of a clinical decision support system using machine learning techniques

AMIA or JAMIA

3. A study exploring the effectiveness of a web-based intervention for mental health

JMIR

Framing Papers

1. How to Evaluate Technologies for Health Behavior Change in HCI Research

2. A Review of 25 Years of CSCW Research in Healthcare: Contributions, Challenges and Future Agendas

How to Evaluate Technologies for Health Behavior Change in HCI Research

What are the arguments in this paper?

Klasnja et al. argue that evaluating behavior change isn't always necessary or feasible for HCI research, especially in early design stages or with novel technologies. The common belief that assessments should only focus on behavior change is too limiting.

HCI contributions should include tailored efficacy evaluations for behavior-change intervention strategies within the system, such as self-monitoring and conditioning, as well as studies that provide insights into users' experiences with the technology.

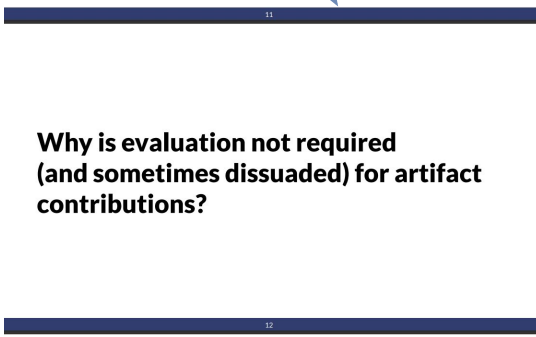
How is this paper still relevant to today's HCI health research?

Evaluating behavior change isn't always necessary or feasible for HCI research

Still true? And accepted…

Extends to evaluating health outcomes for tech for other health domains/conditions such as mental health, chronic conditions, etc. → Health outcomes are out of scope in HCI

Longitudinal engagement is still considered difficult to study and measure.



How is this paper still relevant to today's HCI health research?

HCI contributions should include: (1) tailored efficacy evaluations for behavior-change intervention strategies within the system such as (self-monitoring and conditioning), (2) provide insights into users' experiences with the technology

Lot more studies that compare design alternatives or "standard study procedures" to test effectiveness of intervention.

Qualitative and mixed method studies → specific user groups, populations and their use/ experiences with technology.

How things have changed in HCI health research since this paper?

More collaboration between health researchers and HCI researchers, resulting in more informed study design.

Moved away from “behavior change” and “persuasive design” terminology; more user centered and focus more on user autonomy.

A Review of 25 Years of CSCW Research in Healthcare: Contributions, Challenges and Future Agendas

What are the key arguments in this paper?

Fitzpatrick and Ellingsen (2013)

At the time of the paper, contributions to CSCW primarily focused on workplace collaboration at a small scale. But, healthcare settings are complex, large-scaled, and involves multiple stakeholders and physical environments.

(1) Get involved with policy-making and institutional level work
(2) Involve more stakeholders and settings to center around the patient experience
(3) Leverage findings from other CSCW settings (e.g., workplace studies) to understand healthcare collaboration

How is this paper still relevant to today's HCI/CSCW health research?

Many studies now involve a user-centered approach that incorporates design research methodologies, or are centered around patient experience.

Improvements still need to be made

(1) Studies are still largely cross-sectional, not much longitudinal studies like traditional ethnography (months to years)
(2) Still not much contribution to policy-making

Do you think policy contribution should be a part of HCI/CSCW contribution? If so, how?

How things have changed in HCI/ CSCW health research since this paper?

Setting is no longer just offline (e.g., MyChart, more formalized telehealth since COVID, AI involvement, using wearables to support patient-provider communication/tracking).

More research is starting to looking at health work in non-Western context (e.g., Global South, ICTD).

More collaboration between HCI researchers and implementation science researchers to evaluate large-scale adoption of the technology.

What direction(s) do you see HCI and Health going in the near future?

Health

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Discussion Papers

1. The TAC Toolkit: Supporting Design for User Acceptance of Health Technologies from a Macro-Temporal Perspective

2. Improving the Usability and Safety of Digital Health Systems: The Role of Predictive Human-Computer Interaction Modeling

The TAC Toolkit: Supporting Design for User Acceptance of Health Technologies from a Macro-Temporal Perspective

How does this paper argue that its topic is worthy of study?

HCI researchers do not account for **temporality** during their design process, which can influence the long-term *user acceptance of health technologies.*

Developing a toolkit could be helpful because prior work has shown that design cards can be effective tools for theoretically abstract concepts:

Reflection **Ideation** **Communication**

Which of the typical HCI research contributions do you think this paper is making? And why?

Which of the typical HCI research contributions is this paper making?

Empirical

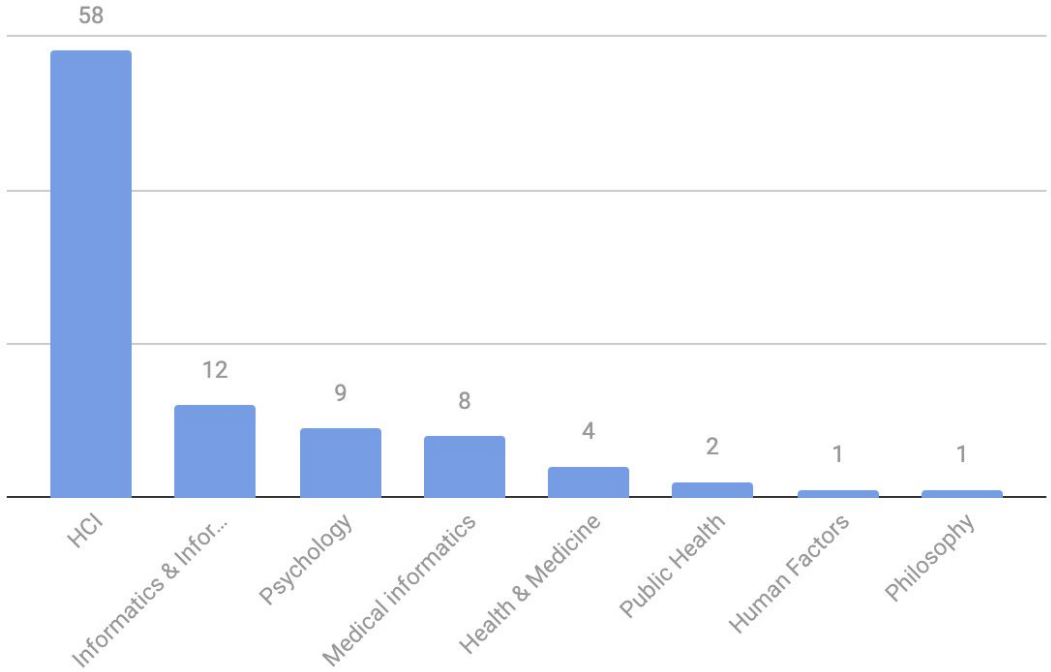
Conducted interviews and ran workshops with 21 participants to evaluate the toolkit

Artifact

The end result was a toolkit that HCI researchers and designers can download and use

The TAC Toolkit: Supporting Design for User Acceptance of Health Technologies from a Macro-Temporal Perspective

What areas of inquiry within HCI and outside of HCI does this paper draw from?



The TAC Toolkit: Supporting Design for User Acceptance of Health Technologies from a Macro-Temporal Perspective

Why do you think the paper draws contributions from those areas?

Why do you think the paper draws contributions from those areas?

HCI

Language: Target audience is HCI researchers and designers
Design thinking: Components from design thinking methods
DIS: Bridging theory and practice

Health

Patient journey

Information

Theories and concepts from the larger informatics field

HCI

Information Systems

Psychology

Health & Medicine

Public Health

Philosophy

How does the paper expand on those areas to make its contribution?

How does the paper expand on those areas to make its contribution?

Collates perspectives of technology user acceptance from different areas of inquiry

Makes the concept of temporality less abstract (from psychology and medical informatics). So that it becomes a **more actionable concept** for health technology designers.

HCI

Information Systems

Psychology

Health & Medicine

Public Health

Philosophy

What are the main takeaways of this paper?

HCI Practitioners

Designing health technologies involves accounting for changing user acceptance over time and due to contextual factors.

HCI Researchers

Transforming conceptual research into designs that promote user acceptance and can be sustained over time.

Overall

The authors argue that the TAC toolkit can help HCI researchers and designers to consider the **full user cycle** that considers not only the different points of the interaction (e.g., pre-use, first time, first week, 3 weeks, first year) but also the context and other characteristics (e.g., trust)

How could this paper be in conversation with work from your field of studies or even your own research (or interests)?

Improving the Usability and Safety of Digital Health Systems: The Role of Predictive Human-Computer Interaction Modeling

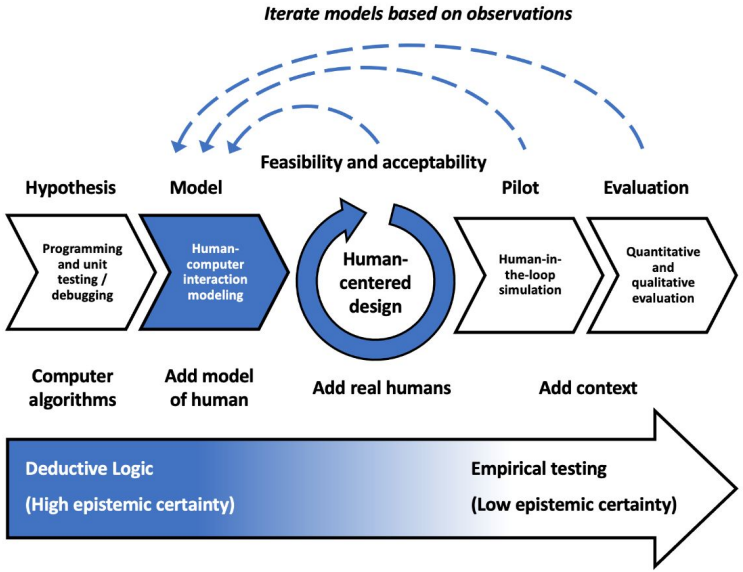
How does this paper argue that its topic is worthy of study?

Lack of evidence for health tech design patterns to be used in medical interventions

Limited generalizability of health tech UI suggestions

Solving these can lead to

1. Improve clinical safety of systems that deliver health interventions
2. Illuminate designs with poor usability, leading to accelerate innovation



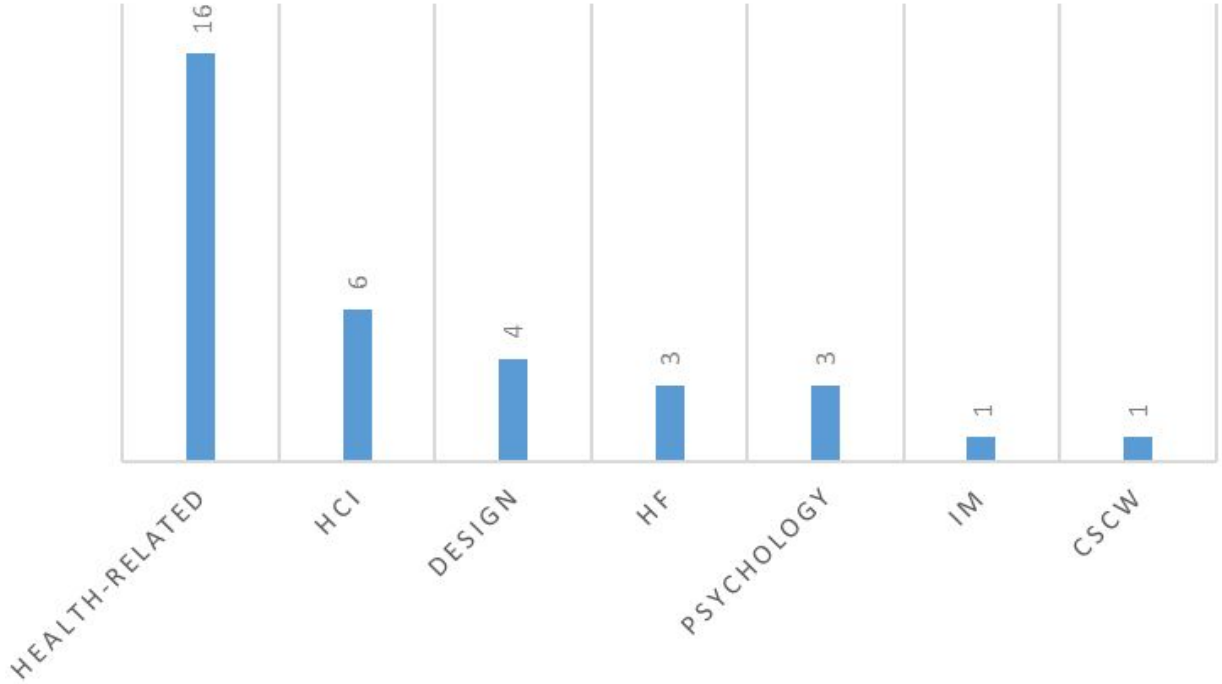
Which of the typical HCI research contributions do you think this paper is resembling? And why?

Which of the typical HCI research contributions is this paper resembling?

Opinion/Argument

Although not published in a typical HCI venue, the authors used historical context and examples to suggest a new model or framework for *“integrating predictive modeling with HCD”*

What areas of inquiry within HCI and outside of HCI does this paper draw from?



What areas of inquiry within HCI and outside of HCI does each paper draw from?

WITHIN HCI

User Experience and Usability or Design

Human-centered design

Usability heuristics

Health

Building a more robust and generalizable evidence base for UI designs for digital health interventions

Interaction Beyond the Individual

Distributed cognition

Health & Medicine

HCI

Design

Human Factors

Psychology

Information Management

What areas of inquiry within HCI and outside of HCI does each paper draw from?

OUTSIDE OF HCI

Health (Medical Informatics, Healthcare)

Studies in Health Technology and Informatics (HTI)
Methods of Information in Medicine (Methods Inf Med)

Design

Design Thinking 101 (By Gibbons S.)
Heuristics for user interface design. (By Nielsen J.)

Human Factor

Human Factors & Ergonomics

Health & Medicine

HCI

Design

Human Factors

Psychology

Information Management

What areas of inquiry within HCI and outside of HCI does each paper draw from?

OUTSIDE OF HCI

Information Management
The Communications of the ACM (CACM) journal

Psychology
Journal of Experimental Psychology (J. Exp. Psychol.)

Computer Supported Cooperative Work
CSCW

Health & Medicine

HCI

Design

Human Factors

Psychology

Information Management

Why do you think the paper draws contributions from those areas?

Why do you think the paper draws contributions from those areas?

JMIR has a medical informatics and clinicians-oriented target audience, so it makes more sense to cite more medical informatics work

Medical informatics and health research emphasize **quantitative** research, and the authors are attempting to highlight the need of quantitative methods for HCI

HF/ Psychology: because early HCI modeling work originated from cognitive psychology domains

Health & Medicine

HCI

Design

Human Factors

Psychology

Information Management

How does the paper expand on those areas to make its contribution?

How does the paper expand on those areas to make its contribution?

Expands on the predictive models of HCI using the evidence-based approach from the fields of cognitive science, human factors, and psychology to address methodological challenges in UI design for digital health applications/systems.

Extends early HCI methodology of individual cognitive modeling or distributed/situated cognitive modeling by combining it *"naturalistic observation and video coding"*

What are the main takeaways of this paper?

A note on predictive models of HCI

“Predictive” means something different in HCI, especially in AI and data

HCI Community

We need to do more collaborative work with researchers in — understand the problems that other researchers in relevant non-HCI communities (e.g., medical communities) care about

Other Research Communities

How to apply (early) HCI methods and knowledge to the health research field

How could this paper be in conversation with work from your field of studies or even your own research (or interests)?

Back to the Discussion on the Overview Day

Differences in Target Audience & Language Use

TAC Toolkit Paper (CHI)
HCI practitioners and researchers

Predictive Models of HCI (JMIR)
Healthcare practitioners
HCI researchers, designers, and developers

Complexity in Healthcare

The idea of designing health tech for long-term use vs. cross-sectional evaluation

Both papers acknowledge and highlight the complexity of designing for healthcare settings and patient needs