Empathy in Health Technologies

Eun Kyoung Choe
The Information School
University of Washington
Seattle, WA, USA
eunky@uw.edu

Marisa E. Duarte
The Information School
University of Washington
Seattle, WA, USA
meduarte@uw.edu

Julie A. Kientz
Human Centered Design & Eng.
and The Information School
University of Washington
Seattle, WA, USA
jkientz@uw.edu

WISH 2010, April 11, 2010, Atlanta, Georgia, USA.

Abstract
A consequence of the movement from paper-based medical record-keeping to digital and online formats is the potential loss of the human element that occurs during face-to-face doctor-patient dialogue. To help reduce the potential for this loss, we have studied how *empathy* may be included in the design of health technologies through interviews with clinicians and patients, followed by ideation for design implications. We identified strategies clinicians use to express empathy when giving a diagnosis, including the recursive process of *understanding* and *communicating* with patients. We discuss how technologies in the consultation room affect doctor-patient interaction. We present design ideas that may support the communication of empathy exemplified by re-thinking the ways clinicians and patients share information and the design of technology use in consultation rooms.

Keywords
Health, communication, empathy, medical informatics, doctor-patient relationship, health informatics

Introduction
Empathy has been considered one of the most important human elements in all forms of helping relationships [5]. In the doctor-patient relationship, empathy is viewed as a prerequisite for successful

therapeutic outcome [2]. However, despite the current momentum around technologies for health, empathy has not been a major consideration in the process of designing technologies for health. In consequence, the need to support clinicians in expressing empathy in their everyday practice has been largely unfulfilled [6,7]. In the case of the transition from paper charts to electronic medical record systems (EMRS), for example, there exists the potential for removal or displacement of otherwise timely face-to-face expressions of empathy between doctors and patients. Clinicians spend a significant amount of time filling out the forms [4] during or after a consultation with a patient, which could otherwise be used for actively listening to the patient narrative or answering patients' questions. In the absence or the negligence of these human elements of empathy during the process of designing health systems, clinicians and patients may be troubled by unintended consequences of health technologies such as clinicians' workflow interruption or patients having difficulty assimilating information. Tools and technologies that were initially designed for better medical record-keeping purposes may not serve the needs of clinicians and patients if the ways in which clinicians communicate empathy and share information with patients are not considered during the design process. However, if technology can be better designed with empathy in mind, these situations may be avoided.

Our study explores how empathy is expressed and perceived in clinical situations and the kinds of phenomenon surrounding the expression or lack of expression of empathy. We conducted semi-structured, open-ended interviews with clinicians and patients to understand their perceptions of empathy during the diagnosis of severe or chronic conditions. We discuss how the design of health technologies and doctor's workplace settings can create space for the expression of empathy in the clinical scenario in the new era of technology and medicine.

Study Method

We interviewed a total of 14 participants—six clinicians, six patients, and two family members of a patient. The clinicians had completed many in-person medical diagnoses or consultations with patients. The patients had been diagnosed with severe or chronic conditions such as cancer, Parkinson's disease, or diabetes. Our goal was to learn what empathic strategies clinicians employ within the limited resources and time they have, and what patients appreciate. We asked the clinicians to describe how they deliver diagnoses of unexpected findings, such as very serious illness or diseases with poor prognosis. We asked the patients to describe the very moment when they received a diagnosis. Then we incorporated the findings in designing health technologies to best help doctors and patients in various situations.

Results and Discussion

A wide range of themes emerged from the interviews including: definition of empathy, ways in which clinicians understand patients' situation and feelings, tools and artifacts clinicians use when communicating with patients, and attributes of non-empathic communication and its consequences. Due to space constraints, we will limit the discussion to two main themes uncovered by this research —1) strategies clinicians use to express empathy, and 2) tools and technologies in a consultation room which impact doctor-patient interaction. At the end of each section,

we discuss technology design ideas that support clinicians' empathic care.

Strategies Clinicians Use to Express Empathy
Experienced clinicians are well aware of the intrinsic value of empathic dialogue: the recursive process of understanding and communicating with patients in varying mindsets and physical and emotional situations over time. Empathy is hardly ever communicated without the clinician's understanding and acknowledgment of the patient's background. For example, the clinician may need to know where patients are coming from, where they are in their feelings, their level of understanding of the disease and options, their relationships, and the nature of their work and home life. One clinician said that the personality of a patient is a key characteristic to differentiate one patient from another, but the medical record is literally "a record of medical process," so there is little room to contain personal information. Furthermore, the clinician's understanding of a patient's situation and emotional state means little unless the clinician is able to skillfully communicate that understanding. Understanding and communicating happen simultaneously as clinicians consciously and continuously reassess the patient's situation and modify their method of delivering unexpected news based on the patient's feedback and life story.

Design Ideas: The interface that records health information may be designed to contain personal characteristics and narratives that help clinicians to better remember each patient in order to treat them more like "a human being," rather than "as a number" or "an illness." Patients' distinct characteristics include personality, previous key events, background, relationships, family or guardian information, and the nature of their work and home lives. Visual cues, such as photos or past conversations, can help clinicians quickly recall the patient, even if they meet with the patient only once or twice a year. An interface showing a "quick view" or a summary of the patient's medical and personal information may help clinicians mentally prepare before going into the consultation room.

As part of empathic communication, clinicians acknowledge the patient's physical and emotional discomfort. Health information technologies may also be designed as a learning tool for clinicians to know where patients are in their feelings. Kubler-Ross's five stages of grief model [3], for example, can be used as a basis for a design of bar type menu in a chart, which allows clinicians to mark the patient's emotional state. It would allow clinicians to always be mindful of the patient's emotional state, and when clinicians recognize a patient going through a deep depression, they may provide patients with further emotional support.

Tool and Technologies in Consultation Room
EMRS or a combination of EMRS and handwritten paper charts are commonly used before, during, or after the consultation. Before meeting with patients, clinicians review charts to remind themselves of the patient and his/her condition. During the meeting, clinicians write notes either in the EMRS, on the paper chart, or on a notepad. Some clinicians reported that they draw a diagram or sketch out organs on a piece of paper while explaining diagnoses and give it to patients or family members afterwards. However, it is confusing to keep the record of handwritten notes, especially when EMRS and a paper chart are used together. To show the lab test or a graph on the monitor, they may turn the

monitor screen toward patients. Although clinicians prefer sitting side-by-side or perpendicular to the patient for easier data sharing and building a closer relationship, the sitting positions of the clinicians and patients are restricted by workplace setting—the way the desk, chairs, computer, and monitor are arranged. Some clinicians try to face patients by sitting on a swivel chair, using a notepad or a laptop, and being detached from a desk or monitor. Despite the merits of EMRS, both clinicians and patients expressed concern over widespread practice of using a computer during patient consultation due to the intrusiveness affecting the fluidity of conversation, and the inefficiency of filling out forms. Patients were especially frustrated when clinicians did not spend enough time with them. When the bad news was not communicated properly, patients had hard time assimilating the information, and were not being able to remember what was said during the visit.

Design Ideas: Because handwritten notes are easy to lose and difficult to archive, providing a place to sketch a drawing in the medical record system with a tablet PC or digital pen and paper may help both clinicians and patients to share information without losing it or making copies. The drawings or a transcription service can be provided for the patient who has difficulty assimilating the information on-site, who does not bring other family members to the meeting, or who is not in an emotional state to receive the news during the visit. Those can be sent to patient's email with the summary of what has been discussed during the visit. A desktop computer, keyboard, large monitor, and desk that are not oriented toward a patient introduce intrusiveness affecting the fluidity of conversation. Thus, the facilities and technologies used in the consultation room should be carefully designed in a way to encourage the clinician and patient to face each other or sit side-by-side when they need to share data and look at charts.

Conclusion and Future Work

The goal of this work is to reduce the discomforts of patients and some of the negative consequences of poor doctor-patient communication by designing technologies that can support the human communication of empathy. This was exemplified by re-thinking the design of health information technologies. We claim that empathy is an important consideration in the process of designing technologies for health. As our next steps in this research, we will focus on elaborating the designs of empathic interfaces for patients and doctors in the context of treating specific conditions, such as in the case of Alzheimer's disease or post traumatic stress disorder (PTSD).

References

[1] Heath, C. and Luff, P. (2000) Technology in Action. Cambridge: *University Press.*

[2] Ickes, W. (1997) Empathic accuracy. New York: *The Guilford Press.*

[3] Kubler-Ross, E. (2005) On grief and grieving: Finding the meaning of grief through the five stages of loss. New York: *Scribner.*

[4] Poissant, L. *et al*. (2005) The impact of electronic health records on time efficiency of physicians and nurses. *JAMIA,* 12(5):505-516.

[5] Reynolds, W.J., *et al*. (1999) Empathy: A crucial component of the helping relationship. *J. of Psychiatric & Mental Health Nursing*, 6(5):363-370.

[6] Siegler, E.L. and Adelman, R. (2009) Copy and paste: A remediable hazard of electronic health records. *AJM,* 122(6):495-496.

[7] Walsh, S. (2004) The clinician's perspective on electronic health records and how they can affect patient care. *BMJ.* 328(7449):1184–1187.