

AN ETHICAL EVALUATION OF TELEMEDICINE APPLICATIONS MUST CONSIDER FOUR MAJOR ASPECTS – A COMMENT ON KIDHOLM ET AL.

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Dear Dr. Mäkelä,

In their article *A Model for Assessment of Telemedicine Applications: MAST* published in this *Journal* (1), Kidholm et al. present an empirical approach for evaluating telemedicine applications. Their approach, called MAST, (Model for Assessment of Telemedicine applications) was developed through “user and stakeholder workshops and on the basis of a systematic literature review” (1, p. 45). Their model is split into seven different multidisciplinary assessment areas: (i) Health problems and characteristics of the application; (ii) Safety; (iii) Clinical effectiveness; (iv) Patient perspectives; (v) Economic aspects; (vi) Organizational aspects; and (vii) Socio-cultural, ethical, and legal aspects.

Ethical evaluation is only broadly sketched. Kidholm et al. acknowledge that “the ethical questions raised by the application itself and by the consequences of implementing it or not” (1, p. 48) should be evaluated. In addition, based on responses from their workshops, Kidholm and his colleagues mention that an ethical perspective should also include considerations about “equality of patient access to telemedicine services, for example, for frail patients with low socio-economic status, cognitive impairment, living in geographically remote areas; differences in patients’ ability to use telemedicine services; patients’ dignity in relation to being monitored constantly in their own environment; as well as the patient’s right to refuse treatment which used telemedicine.” (1, p. 46).

Although these remarks sound promising, it is clear that the ethical keywords the authors use are umbrella terms, lacking specificity. In our view, there is the need to specify how we should evaluate a conflict between, for instance, privacy and security regarding elderly people using technological assistance in their homes. Researchers must also be prepared to think critically about the interests of the many stakeholders involved: the individual perspective of each patient (micro level); the viewpoint of health caretakers, family members, friends, and associated persons (meso level); and finally the global stance of society (macro level).

Too often, ethical aspects of technology assessment are just mentioned “by the way”: Technology-driven research projects on smart homes, telemedicine devices in ambient assisted living areas, e-health applications, or home care systems frequently focus on technological or medical potentials, as well as on legal or financial restrictions. The term ambient assisted living is derived from ambient intelligence and is commonly used in the health care context in Europe. This new approach focuses on supporting systems and services in the residential environment of elderly and care-dependent people.

Unfortunately, within technology-driven research structures, ethical assessment is often relegated to an appendix. Even worse, the ethical evaluation process is seldom integrated with the general research phase. In some cases, ethical considerations are only small add-ons at the end of research projects. This cannot be sufficient. Respect for the ethical aspects of a technology leads to better products and higher acceptance by consumers and patients. Taking ethics seriously will ultimately lead to necessary societal debate about forthcoming changes influenced by such technological applications.

The arguments for emphasizing ethical evaluation within the overall research structure are manifold. Here, we just want to highlight four major aspects to justify the inclusion of ethical evaluation in health technology assessment projects from the very beginning of such research:

First, users and their assessment of assistive technologies are often neglected. The technological development workforce appears to be dominated by young engineers who seem not to know or to be unwilling to take into account what the elderly actually need. As a result, technology intended to help frail, sick, or handicapped persons stay longer within their homes, living independently and more safely, does not fit the needs of its potential users. Moreover, older people tend to be highly skeptical toward technical solutions. To gain users' acceptance, their actual needs and wishes, as well as their fears, with regard to technology need to be taken into account, certainly from a technical, economic, and maybe legal point of view, but also because of ethical considerations. If users demand privacy, autonomy, and the like, we must ask: does the respective technology really strengthen autonomy? Does it protect privacy? Without integrated ethical assessment, we have no way of knowing how users truly feel about these products. Ethical considerations can inform economic ones with regard to justice and the willingness of society to underwrite assistive technologies for the needy. Unfortunately, such broader ethical research perspectives are often missing.

Second, ethical assessments need to address technological systems as well as single technologies, as the effect of an isolated technology might be quite different from that of a complex and/or interconnected system. Determining responsibility and liability for errors and damages caused by technology is far more difficult to accomplish for highly connected computational networks and systems than for small and isolated artifacts. If a patient is harmed due to malfunctions, implementation errors, or wrong configurations someone has to take moral responsibility and potentially legal liability. But who is to blame? Individuals, companies, networks of companies? Which individual, which company? Ethical theories allow for the development of answers that account for the differences in collective and individual responsibility.

Third, we need to acknowledge the possibility that physician–patient relationships may be challenged by telemedicine applications or other e-health systems. Privacy and data protection might collide with medical needs in case of urgency or with effective and efficient health care provision. In such situations, it is necessary to create a hierarchy of normative requirements. Ethical assessments pave the way for the development of such requirements.

Finally, smart homes, telemedicine devices in ambient assisted living areas, e-health applications, and home care systems

regularly address the field of nursing and/or consumer products. Ethical assessments must be implemented to guarantee that these applications and products meet the standards valid for medical products or services.

We believe the implementation of normative user requirements significantly simplifies the development process when taken into account from the very beginning. Allowing for coordination among ethical, engineering, legal, and economic concerns is no end in itself, rather it is a way to create better products with a higher rate of acceptance by potential users.

Regards,

Arne Manzeschke, PD Dr.

Institute for Technology – Theology – Sciences, at Ludwig-Maximilians-University, Munich

Karsten Weber, Prof. Dr.

Chair for General Science of Technology, Brandenburg University of Technology

Heiner Fangerau, Prof. Dr., Director of the

Institute of the History, Philosophy and Ethics of Medicine, Ulm University

Elisabeth Rother (B.A.), Friederike Quack (B.A.)

Institute for Technology – Theology – Sciences, at Ludwig-Maximilians-University, Munich

Kathrin Dengler, Dipl.-WiWi

Institute of the History, Philosophy and Ethics of Medicine, Ulm University

CONFLICT OF INTEREST

In January 2012, the German Federal Ministry of Education and Research initiated an ethical research project to evaluate the impact of smart home technology (also called: Ambient Assisted Living technologies). The authors represent a small research group currently working on that survey.

REFERENCE

1. Kidholm K, Ekeland AG, Jensen LK, et al. A Model for Assessment of Telemedicine Applications: MAST. *Int J Technol Assess Health Care*. 2012;28:44–51.