Patient Empowerment and High-Tech Imaging and Biosignal-Based Procedures – Contradiction or Challenge?

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Abstract. The proposed joint panel of EFMI WG MIP (Medical Image Processing) and IMIA WG BPR (Biomedical Pattern Recognition) aims at exploring the view of patients and their empowerment in healthcare settings involving high-tech imaging and biosignal-based procedures. Starting out from concepts of patient-centeredness, the panel will explore different types of application scenarios involving diagnostic, therapeutic and monitoring procedures such as, e.g., image-guided intervention, computer aided cancer screening, telemonitoring, behavioral change interventions based on physical activity biosensors. The panel addresses colleagues working in the fields of imaging and biosignals with interest in patient empowerment. Expected outcome of the panel is a document summarizing the currently observable vs. ideally achievable qualities of patient-centeredness identified in the course of the debate.

Keywords. Medical imaging, biosignal applications, patient empowerment, patient-centeredness, high-tech-enhanced healthcare and public health

1. Background

Biomedical technologies continue to proliferate in the healthcare systems. Regarding imaging and biosignal acquisition, there is a wide variety of applications locally in hospitals and practices, but also at a distance in telemedical settings. And scenarios range from operating rooms and intensive care units with the patient being nearly “absorbed” by surrounding machinery to scenarios where light-weight biosensors worn on the body are measuring physiological parameters. Patients and healthy persons can easily feel “lost” or “scared” when confronted with and made dependent of the functioning of biomedical devices and systems. Therefore it appears reasonable to pose the question whether patient-centeredness and a technology-enhanced healthcare are mutually exclusive or synergetic, as Amy J. Barton (2010) does in her paper from a nursing point of view [1]. The wider range of possible perceptions of what may be covered by

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the terms “user-centeredness” and “patient-empowerment” gets obvious when looking at further relevant publications like e.g. Anderson/Funnell 2005 [2], Suter et al. 2011 [3], and Retèl et al. 2009 [4], only to mention three of many examples.

2. Goal of the panel

We want to shed light on 4-5 scenarios of different type involving the acquisition and use of medical images and biosignals, having in mind settings such as e.g. clinical diagnostics, self-management of chronic conditions, home and mobile telecare. Based on the concrete scenarios chosen, the following questions shall be discussed with all panelists and participants:

• What exactly means patient empowerment and patient-centeredness of an application / a procedure / a workflow in such a scenario?
• What common features regarding patient-centeredness do such scenarios have today with respect to biomedical technology and patient-centeredness, and what characteristics are separating them?
• How patient-centric and patient-empowering could different technology-emphasizing scenarios possibly be designed in the future?

3. Format and speakers

The different types of scenarios shall be illustrated and critically evaluated by expert panelists in introductory statements. These statements are requested to follow a form that supports the stimulation of debate, first among the panelists, then opening to all panel participants. In particular, each panelist should give a clear and to a certain extent provocative own position regarding the title question of the panel. During the preparation of the panel, it will be assured that different positions will be represented in the panel, in order to guarantee that discussion is properly stimulated.

Prior to the panel, the organizers will prepare the skeleton of a document which will be complemented during the panel by the discussion results.

The WG chairs, Prof. Alexander Horsch (EFMI WG MIP) and Prof. Luca Mainardi (IMIA WG BPR) will give an introductory briefing. The following round of initial statements will include the following panelists: Prof. Henning Müller (CH) on patients and professionals as users of medical image search engines; Prof. Michael Marschollek (DE) on people’s perceptions and expectations regarding sensor-based home health services; Prof. Alexander Horsch on usability and acceptance of biosensor-enhanced clinical and epidemiological research.

4. Expected result

A document summarizing the results of the panel, comprising:

• Descriptions of the presented scenarios of different type;
• Clarification of the concepts patient-centeredness and patient empowerment in this context;
• Currently observable vs. ideally achievable qualities of patient-centeredness and patient empowerment as identified during the panel;
• Recommendations for future activities on this issue.

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Statement of participation: All panelists intend to participate in the MIE2011 conference.

References


