# Archetype Representation of PROMs

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A home telehealth system allowing chronic-obstructive pulmonary disease (COPD) and heart-failure (HF) patients to communicate patient-reported outcome measures (PROMs) has been implemented in routine care at Linköping University Hospital, Sweden [1]. The system makes use of digital pen technology and Health Diary forms printed on paper for allowing even elderly severely ill patients to use the system.

In order to facilitate the integration of information from the system into the EHR health information standards were investigated. The EHR system in use at the hospital is to start using openEHR archetypes in the coming years, thus the international library of archetypes from openEHR was used (http://openehr.org/CKM).



Three different forms were developed: two for reporting symptoms for COPD and HF patients respectively and one for reporting vital parameters. The symptoms reported included breathlessness and, for COPD patients, the amount of coughing and production of phlegm. Vital parameters included blood pressure, morning weight, $SpO_2$, $FEV_1$%, and temperature. Further, information about the patients' self-administration of medications was included.

For each of the three forms a separate template was created. In total, 12 archetypes were used to represent information in all three forms. For most information items there were archetypes available to meet the needs. Only few items posed a problem for formalization, for example residuals ("other medication") in medication information, and that participants, i.e. the patient, next-of-kin, and caregiver, were only categorized and not identified in the forms. Still, this application shows that even existing archetypes, mostly developed for other use case, can be used for representing PROM information. To test the templates, sample XML instances were generated. Next step would be to allow the telehealth system to export openEHR-formatted information using the templates created.
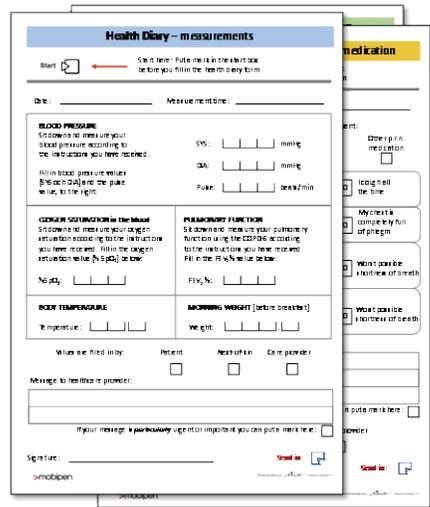
1.  L. Lind, D. Karlsson, Telehealth for "the digital illiterate"—elderly heart failure patients experiences, *Stud Health Technol Inform* **205** (2014), 353-357.

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