Framework for automated documentation of care and health care tasks

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Aim
The demand for documentation of performed tasks in care and health care increase. Given the demographic changes with an aging population the documentation issue will scale in time and effort. Recourse allocation from complex documentation to care and health care activities are desired. Furthermore, the documentation of tasks are often done after the task has been performed, potentially leading to mismatch between performed and documented task. To handle this equation, automation approaches for documentation of performed tasks as they are carried out are desired.

Materials and methods
The data presented are based on field studies that has been performed on care and health care tasks in two municipalities in the south of Sweden. Reviews of need assessment protocols and some of the currently used documentation systems has been studied. In essence, documentation of activities can be performed in explicit or implicit approaches or combinations. With explicit we mean actively documenting the task in relation to the activity carried out. With implicit we mean automatically documenting the task as it is carried out. We focus on building a conceptual framework of approaches on automated documentation [1] based on implicit documentation of activities [2].

Results
In field studies in region X, the need assessment protocol are often paper based and placed in the subject's kitchen. The staff uses regular pen and paper to document if the tasks are performed adding for example health status of the person. Documentation approaches using digital pens for taking notes and documenting in the subject's apartment are also in use. In field studies in region Y tasks carried out are documented outside the subject's home, for example in the car before driving off, or when returning back to the office, first on paper then transferred to computing system. Based on the studies, we suggest a conceptual framework for implicit documentation of tasks, see figure 1 below.

Identification of points for implicit documentation when the task is carried out
- Categorization of tasks and documentation base for type of task
- Usability evaluation (usability demands, personalization models)
- Special focus upon integrity-preserving approaches

Need Assessment Protocol (based on identified needs and acknowledged support)
Suitable process and technical solutions for implicit documentation of tasks
- Documentation protocol connecting log with type of tasks

Figure 1: Iterative approach for need assessment protocol, categorization of tasks, points of implicit documentation, usability evaluation and continuing the iteration.

Conclusion
Documentation of tasks can be automated and recorded as they are carried out, sparing time for the staff to perform tedious documentation first on paper then in computer system. From an ethical perspective, the documentation should serve as a support for documentation saving time. The control and access perspectives need to be further considered.

References
1 Lundberg, Jenny and Gustavsson Rune, "Challenges and opportunities of sensor based user empowerment", The 8th International Conference on Networking, Sensing and Control, ICNSC 2011, Delft, The Netherlands