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Introduction

Focus: Virtual Community for Physical Activity Support

What does existing Virtual Communities bring?

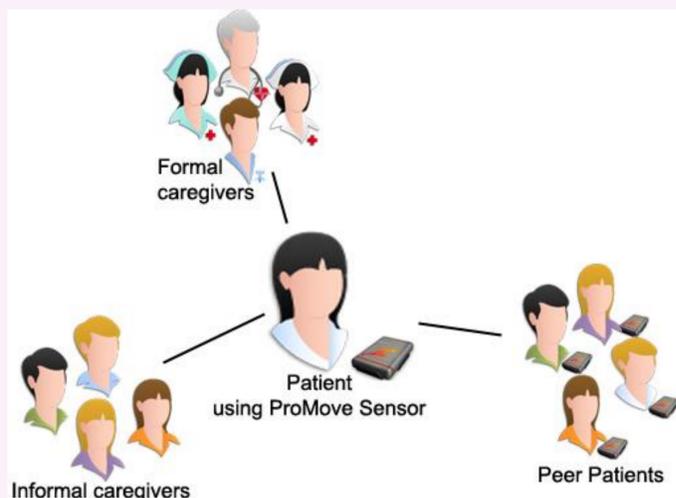
- Informational Support
- Emotional Support

What will our Virtual Community bring?

- **Instrumental Support**
- Appraisal Support / Feedback

Method

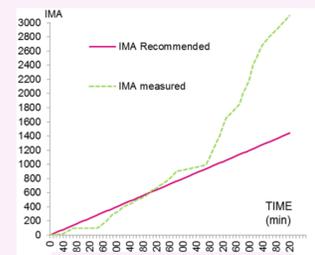
The physical activity support community includes patients but also formal and informal caregivers.



The **physical activity**: monitored by a triaxial accelerometer: ProMove[1]. The ProMove sensor implements the IMA metric proposed by Bouten[2]:

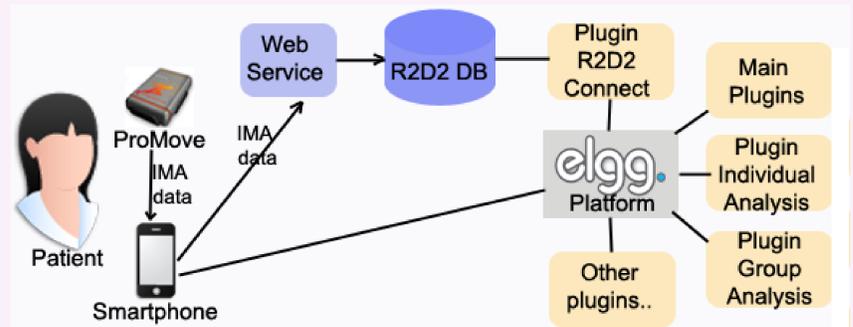
$$IMA = \int_{t=t_0}^{t_0+T} |a_x(t)| dt + \int_{t=t_0}^{t_0+T} |a_y(t)| dt + \int_{t=t_0}^{t_0+T} |a_z(t)| dt$$

IMA: object of the instrumental support. Metrics (for individuals and groups) based on IMA are developed [3] to allow patients to understand their physical activity level, and to share it within their community to receive support and feedback.



Example IMA (Measured Vs. Recommended)

The physical activity support community is implemented using Elgg [4].



Results

- **Preliminary evaluation:** 2 groups of 5 healthy subjects, 2 days.
- **Purpose of evaluation:** Test the performance of the VC, and to test the Physical Activity Level support modules, for both personal and group levels.
- **Results:** No errors or anomalies that have impact on the stability or the functionality were detected.
- **Outlook:** First results suggest that the group dynamics depend on a person who takes the role of leader spontaneously; if the "leader" is active and encouraging the other members, they also get active. Feedbacks and encouragements of the administrator had the same effect.



Discussion & Conclusion

- Evaluation was conducted on few subjects and for limited time.
- To make the results conclusive: larger number of subjects and longer period evaluation are needed.
- Further development is ongoing work, it is using a different social networking software: Liferay.
- Next steps will be the provision of the appraisal support (feedback) within the virtual community.

References

- [1] <http://inertia-technology.com/promove-3d>
- [2] Bouten et al, 1994
- [3] Elloumi et al, 2012
- [4] <http://elgg.org/>
- [5] <http://www.liferay.com/>

