

G. CORTE-FRANCO, F. PÉRRÉAL, M. ALBINET, F. COUTURIER. **Multi-touch table helps filling a pillbox and communicating.** *Gerontechnology* 2012;11(2):403; doi:10.4017/gt.2012.11.02.268.00 **Purpose**

To test the acceptability and ergonomics of a tangible surface which recognizes medication boxes and helps communicating via internet. **Method** Volunteers over 60 years old, having signed an informed consent tried the prototype. First they freely used the table and then they followed simple instructions corresponding to predefined scenarios. The table guides the person step by step with images and easy instructions showing how to first recognize the medication boxes and then the proper medication doses for each day on a pillbox exactly like their own so that they can fill it correctly. In case the patient needs help, the online table enables the person to contact his physician by email using a simplified interface. They were asked to send a short message by email when the table showed them that there was a dangerous drug interaction. At the end participants were asked to fill the System Usability Scale (SUS). **Results & Discussion** We report data from 18 participants with a mean age of 79.6 years. Seven were men. Half of them live in a home for the elderly, 4 are in-patients in the rehabilitation unit and the rest daytime visitors on the ward. Five of them have a computer. Only one participant did not manage to fill the pillbox alone, she needed extra indications constantly. Alerted by this fact, only for her we did a mini-mental state examination (MMSE) on which she scored 23/30 but her clock test showed considerable apraxia. All participants managed to write a small message and 4 needed aid to send it. Nobody found the magnifying glass easy to use. All appreciated the simplified information about medications and visualizing of the medication boxes pictures to improve recognition. Two participants had a nurse coming daily to assist them with medication intake. Most participants did not imagine such a system in their own homes in the near future (too big and expensive). The SUS score was acceptable 66.8/100. Most participants felt confident with the system, once they received a few instructions. The discovery period was not found to be useful, because only 3 participants started touching the table spontaneously. Even if they managed to follow the tasks, participants believed that you need to be cognitively fit to do so. But after observing their performance, we think that if we modify the system according to their inputs, we can have a version ready to be tested by persons with mild cognitive impairment. In fact, as stated by participants, the system demands little training; this enabled the success on both tested tasks: the filling of the pillbox and sending an e-mail. Using the internet was a nice surprise for most participants. These results are encouraging and we now plan to modify the identified ergonomic errors such as manipulation of the magnifying glass, visibility of the target area, and clarifying some instructions. We will then also be able to test the table on persons with mild impairment.

#### References

1. Bourgeois J, Couturier P, Tyrrell J. Safety at home for people with dementia: preliminary evaluation of situations at risk in a French geriatric memory clinic. *Psychologie & neuropsychiatrie du vieillissement* 2009;7(3):213-24
2. Legrain S. Prescription to elderly patients: reducing underuse and adverse drug reactions and improving adherence. *Bulletin de l'Académie Nationale de Médecine* 2007;191(2):259-69
3. Frydel Y. Internet au quotidien: un français sur quatre. *INSEE Première* 2006;1076
4. Brooke J. SUS: A "quick and dirty" usability scale. In: Jordan PW, Thomas B, Weerdmeester BA, McClelland IL, editors. *Usability evaluation in industry*. London: Taylor & Francis; 1996; pp 189–194

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Figure 1. person following instructions from the table to fill the pillbox.◦