

# A NEW TOOL FOR SELECTING APPROPRIATE HOME CARE DEVICES FOR ELDERLY PERSONS SUFFERING FROM DEMENTIA.

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**Abstract**— We have developed a consultation tool for social welfare and health care professionals that can help in choosing the most appropriate technology to be used by elderly persons living at home. The tool consists of a database of commercially available home care aids and devices. Each device in the database is given a “Device profile” that describe the technology in question. This profile was drawn up by using a set of 15 evaluation questions chosen by combining various clinically approved evaluation tools. A structured evaluation form was also developed for individual evaluation of the elderly person. Once the individual evaluation is complete, the database will match the personal profile with the technologies that most closely match the needs of the elderly person. An internet version of the tool is under development.

## I. INTRODUCTION

Finland has a total population of some 5,3 million people, of which approximately 113 000 are elderly persons suffering from various stages of dementia [1]. Demented persons have a greater risk than others to end up in long term institutional care [2]. It is more beneficial for the national health care system and the elderly people themselves to aim for supporting home care instead of expensive institutional care. One way to support home care is to obtain the maximum benefits of various home care support technologies and alarm systems. There are a number of devices and technologies commercially available, but so far there have been no specific rules or methods for choosing the most appropriate technologies based on individual needs of the elderly suffering from dementia.

## II. METHOD

We have developed a consultation tool for social welfare and health care professionals that can help in choosing the most appropriate technology to be used by elderly persons living at home [3].

The tool consists of a database of commercially available home care aids and devices in Finland. The database includes a basic description of the device; in addition each device is given a ‘Principal function’ and ‘Devices characteristics’ profile that describe the technology in question. The “Device profile” was drawn up by using a set of 15 evaluation questions. These questions were chosen by

combining various clinically approved evaluation tools that are used for evaluating the physical, psychological and social capabilities of the elderly, such as CDR, the Clinical Dementia Rating and MMSE [4,5,6]. A similar, structured evaluation form was also drawn up to be used for the individual evaluation of the elderly person. Once each person is evaluated, the device database is searched for a best “Device profile” fit to this personal profile. In this way, a list of recommended devices is generated that best match the individual needs of the elderly person in question.

For supporting the final technology selection, a list of technical and functional characteristics, as well as the price and possible support technology required for each device is displayed. Although the tool will list a set of recommended devices, the home care professional consulting the tool will make the actual final decision on which devices to install. Financial restrictions naturally will also affect the final decision.

## III. RESULTS

At the moment the database includes a relatively limited number of different devices, 35 in total. Since the system is based on a structured format, additions to the database are possible. This database will be increased in the future.

The tool has so far been used only in the context of the research project in which it was developed. The tool has been tested by evaluating some 30 elderly persons suffering from mild to severe stages of dementia, but that are living at home at the moment. The recommendations made by the consultation tool were in line with the actual choice of devices made by home care professionals for these 30 elderly persons.

An internet based version of the evaluation tool is under development, this will be available to all home care professionals in Finland. Large scale trials of the tool will commence once the internet version of the tool is completed.

#### IV. DISCUSSION AND CONCLUSIONS

Health care and home care professionals are not always aware of the latest technical devices available for home care. The choice as to which technologies should be utilized in individual cases is not simple, particularly as there are no clear, internationally accepted criteria or specific rules for choosing the most appropriate home care technologies based on individual needs [7].

The consultation tool that we have developed is clearly limited in scope in that the database is relatively small. Also the evaluation rules used in drawing up the device profiles may be too simplistic and probably need expanding. None the less, we feel that this sort of consultation tool is needed, and even with its clear limitations it can help health care professionals to choose the correct devices for the patients. This increases the potential positive impact of home care technologies. This in turn can decrease the number of house calls done by experts only to special occasions.

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