### USER-CENTRED DESIGN ADAPTATION

#### FOCUS GROUPS / INTERVIEWS

<table>
<thead>
<tr>
<th>Deliverable No. (use the number indicated on description of work)</th>
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<tr>
<td>Work package No.</td>
<td>WP2</td>
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<td>Task No.</td>
<td>T2.3 T2.4</td>
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<td>Task title</td>
<td>D2.3 : Focus group reports</td>
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| Authors (per company, if more than one company, provide it together) | ATH: Lisa Seeman  
|                                                             | BTH: Peter Anderberg, Madeleine Larsson  
|                                                             | UPM: Rebeca Garcia  
|                                                             | CST: María Quintana, Maite Garolera  
|                                                             | DEX: Michal Stefan  
|                                                             | UCLL: Evi Lemmens  
|                                                             | AE: Ana Díaz, Dianne Gove  
|                                                             | SAS: Pilar Barnestén |
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ABSTRACT

The SMART4MD project aims to develop and test a Health application specifically tailored to people with mild dementia. The SMART4MD application that is currently being developed will be uploaded to tablets given to people with mild dementia and their carers to be trialled for 2 years in practise. In the Smart4MD project the principles for Agile software development and including the user are influencing the whole design and adaptation process. A systematic review of earlier studies in the field has showed that user involvement in the design process has improved the usefulness and acceptability of the applications.

Two phases of focus group are presented in the following document. The first phase gave the results of the first session of focus groups which were more qualitative in nature. The second phase of focus groups was delayed until there was a working platform as we believe usability testing results would only be reliable with a working prototype.

During the second round of Focus Groups, quantitative metrics for usability were collected as well as subjective metrics after each task was completed, as well as general questions about overall satisfaction and experience with the application. The methodology for quantitative and subjective usability testing is discussed in the introduction and in detail in the section on the methodological approach to phase two - usability analysis strategy and in the section on the methodological approach to phase one.
INTRODUCTION

Before the development of the first prototype of this application, the first phase of user-centred research stage was carried out during December 2015 - February 2016 among 6 project partners. This stage included iterative focus groups or interviews with people with mild dementia, their carers and healthcare professionals. Altogether, 41 people with mild dementia, 38 carers and 25 healthcare professionals participated in the discussions. A semi-structured guide was used for the focus groups and interviews. The following topics were addressed in all groups:

- daily activities of people with mild dementia;
- familiarity with current technology/devices used among people with dementia and carers, and their frequency of use today;
- applications/websites and categories of content used most frequently by people with dementia and reasons of their usefulness;
- potential usage of current features of Pow Health platform and the reasons why;
- other suggested features for SMART4MD application;
- SMART4MD platform usage requirements and motivation;
- ethics/privacy/information sharing.

The findings revealed that even though the majority of people with dementia use only TV, radio and simple mobiles, they are willing to use tablets with the tailored SMART4MD application. However, the application needs to be simple to use with a possibility to be personalised. Secondly, as a motivation to use it, it does need to include not only the treatment functionalities and content (reminders, practical steps for improving their conditions), but also try to include other daily activities and other interesting content, such as memory games, photos, videos, calls with the family, etc. Both carers and healthcare professionals stated that this application would be very helpful for them in their activities with people with dementia, however, usage of the application and sharing possibilities with the healthcare professionals do need to take into account their time constraints.

Based on this report, and with the accessibility strategy based from task 2.1, a list of requirements for SMART4MD application was drafted and acted as a starting point for the development stage of the first real prototype of the SMART4MD application. The first prototype was then exposed to the second stage of focus groups/interviews (phase two) with people with mild dementia, carers and healthcare professionals.

Phase two of focus groups was aimed to address issues related to usability, user experience and personalization. Altogether, 21 people with mild dementia, 19 carers and 14 healthcare professionals participated in the testing of the prototype version of the platform that take place from September 2016 to November 2016. During the second round of user testing of the prototype further involvement of users was tested, in order to ensure that undiscovered usability problems would be removed from the final application.
The following steps were taken in each iteration of the user testing:

a. Preparation (identifying important tasks and questions, ethical issues, information sheet, informed consent, guide for the moderator, recording, etc.)

b. Focus groups/interviews/observations with patients and carers (inclusion, why, how, when, whom, how many, structure)

c. Interviews with healthcare professionals (why, how, when, whom, how many, structure)

GENERAL METHODOLOGY

First focus group: Focus group was conducted as interviews and used a semi-structured questionnaire with semi-open question. Qualitative methods were used in group interview (focus group) technique to explore the need, beliefs and attitudes of patients and carers.

Qualitative research methods have proved to be useful in the healthcare field. These methods provide in-depth knowledge about perceptions, beliefs and values of the persons or groups involved. Taking into account the importance to explore behaviours and attitudes of our target population, the group interview (focus group) was considered as the most adequate technique to gather the information. These techniques explore dynamics interactions between group members, consider issues that may underlie individual preferences and explore areas of agreement and dissent, to reveal patient’s experiences and points of view about their expectancy and needs.

The research team determined the basic topics to explore in the focus group as the needs of people with mild dementia and their informal carers, as well as their expectations and potential motivations to use technology in general and the application that we have designed. The research team then made a semi-structured questionnaire. The content of this questionnaire was adapted depending on the findings that could arise during the development of the focus group.

An interviewer and a collaborator were presented in each group who were trained in qualitative techniques. The interviewer introduced the study’s objective, explained the need to video-record the session and gave information about data confidentiality. The patients were asked for their consent to videotape the session. After the group sessions, the two investigators discussed their impressions and notes about each group. The data was extracted using a form designed by the research team using the group session questionnaire and the participants’ opinions were collected.

For the individual interviews with health professional, the needs, beliefs and attitudes of professional respect on their patients with dementia were explored and their needs using the techniques of the motivational interview. The data were collected in the same way as in the focus group.
Second focus group: Based on the collected data from first focus group a second group interview for patients and carers with the prototype of platform to test the usability and to perform the beginning of customization of APP were conducted, in the same way to first focus group.

A combination of different methods was merged to conduct the second round of Focus Group, in order to ensure the efficiently use of time and resources (including project partner work capacities, users and logistical resources). The following methods were used:

- Task analysis (as far as requirements, routines and processes are concerned)
- Interview techniques (as far as prepared questions are asked)
- Classical Focus Group methods (as far as users are encouraged to discuss)

For those functions, the frame of a focus group was chosen. The reason is that different kinds of information are needed and the focus group allows for all of them to be collected. The big value of a focus group lies in, – as Nielsen puts it (1993): “spontaneous reactions and group dynamics.” to assess “user needs and feelings”.

Usability analysis Strategy: Usability Testing was used during the second round of Focus Groups in order to determine the usability of the SMART4MD prototype and to find ways to improve it (“formative testing”) based on the feedback of the end users, and the struggles they went through during the Focus Group in order to increase the usability of the SMART4MD application.

Quantitative metrics on efficacy and efficiency were collected as well as subjective metrics for satisfaction including questions asked during the execution of the Focus Group, after each task completed, as well as general questions about overall satisfaction and experience with the application. Details of the metrics of usability testing is discussed in detail in section on the Methodological approach to phase two - Usability analysis Strategy

Data analysis:

The methodology used to analyse the data collected during the 2 phases of focus groups follows a continuous process in which the collection, reduction and analysis of the data go hand by hand. This approach ensured that researchers were continuously interacting with the respondents. As the interviews move forward, researchers gain more experience related to the specific questions or actions that could push to gather the information that we are searching for. The following steps describe the process followed to conduct the qualitative analysis of the collected data:

1) Systematize and prepare data: reduction of the raw data collected summarizing key comments and findings.

2) Identify themes and categorize the data: develop categories, descriptive sentences, etc. that distinguishes each category from the others.

3) Connect and interrelate the data: comparing, contrasting, searching for patterns within each team, as well as between each defined category.

4) Interpret the data: elaborate final conclusions and actions following the results of the analysis.

PHASE ONE: USER REQUIREMENTS

METHODOLOGICAL APPROACH FROM PHASE ONE

User-centred design is typically described as a multi-stage problem solving proces. In the case of SMART4MD, it comprised of two different phases or stages. The first phase has looked at the context of use of the application and user requirements. This phase focused on the people who will use the application, in particular it aimed to better understand their needs, preferences and experiences of and attitudes to technology. It has also looked at motivational aspects such as what they would use it for and under what conditions they would use it. People with mild dementia, carers and healthcare professionals were involved in this phase. This section reports on the methodology used for this first stage.

a) Planning for focus groups/interviews

Prior to conducting the focus groups, all WP partners agreed on a number of relevant organisational, methodological and ethical issues. Several discussions were held in regards to:

- organisational issues, including the number of focus groups that should be conducted, the minimum number of participants of focus groups and interviews and the different stakeholders that should be included;
- the ethical issues that should be taken into account before, during and after the focus groups/interviews
- the development of a semi-structured guide for moderators. It was agreed that the guide would help to collect information in a systematic way, but that all researchers would use it in a flexible way that was adapted to the pace and needs of the group;
- the development of an information sheet that would be sent to all participants in advance to the focus group and also presented again at the beginning of the discussions (please see Annex);
- the most appropriate way of getting informed consent from all participants of the focus groups.
Agreement was also reached on the topics that would be addressed during the focus groups/interviews. These included:

- daily activities of people with mild dementia;
- familiarity with current technology/devices used among people with dementia and carers, and their frequency of use today;
- applications/websites and categories of content used most frequently by people with dementia and reasons of their usefulness;
- potential usage of current features of Pow Health platform and the reasons why;
- other suggested features for SMART4MD application;
- SMART4MD platform usage requirements and motivation;
- ethics/privacy/information sharing.

Six partners from five different countries have conducted the focus groups/interviews.

<table>
<thead>
<tr>
<th>Participant no.</th>
<th>Participant organisation name</th>
<th>Participant short name</th>
<th>Country</th>
</tr>
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<tr>
<td>6 (Participant)</td>
<td>South Essex Partnership University NHS Foundation Trust</td>
<td>SEPT</td>
<td>UK</td>
</tr>
<tr>
<td>7 (Participant)</td>
<td>Consorci Sanitari de Terrassa</td>
<td>CST</td>
<td>Spain</td>
</tr>
<tr>
<td>8 (Participant)</td>
<td>DEX Innovation Centre</td>
<td>DEX</td>
<td>Czech Republic</td>
</tr>
<tr>
<td>9 (Participant)</td>
<td>Servicio Andaluz de Salud</td>
<td>SAS</td>
<td>Spain</td>
</tr>
<tr>
<td>10 (Participant)</td>
<td>Blekinge Institute of Technology</td>
<td>BTH</td>
<td>Sweden</td>
</tr>
<tr>
<td>11 (Participant)</td>
<td>University College Leuven Limburg (Katholieke Hogeschool Limburg)</td>
<td>UCLL (KHL)</td>
<td>Belgium</td>
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</tbody>
</table>

b) Focus groups/interviews with people with mild dementia and their carers

As for people with mild dementia and their carers, either focus groups or interviews have been set up as techniques to gather valuable feedback during this user-centred stage. Inclusion criteria for the people with mild dementia to take part in the focus groups were the following: age 55+, memory problems, living at home and having a carer. Participants of focus groups were recruited through various channels, including cooperating memory clinics, departments or medical centres, other healthcare professionals, relevant local stakeholders, and through a general promotion among public.

To protect participants from harm, researchers decided to use the same term used by them to refer to dementia. This was particularly relevant in some of the countries where still often people with dementia are still not fully disclosed their diagnosis. Often the term preferred and used by participants...
was memory or cognitive problems. In most cases, the focus groups included both people with dementia and carers in the same group.

At the beginning of the groups, participants were provided with information about the project and were given opportunities to ask questions about the project and about the focus groups. They were also reminded of the voluntariness of the participation, and other relevant ethical issues such as anonymity and confidentiality were also addressed. Permission to audiotape the discussions (if applied by some partners) and to take pictures was sought from participants in written or orally. Also, no information discussed and noted down or audio taped during the focus groups were attached to any specific participant’s name, and this was due to sensitivity and anonymity issues.

c) Interviews with healthcare professionals

As for healthcare professionals, interviews were a preferred technique to gather their feedback during this user-centred stage. The main inclusion criteria for healthcare professionals was that they had to have a direct daily contact with people with mild dementia and their carers. Therefore, participating healthcare professionals included general practitioners, neurologists, geriatrists, and psychiatrists who were recruited from cooperating medical centres, memory clinics, local engaged dementia medical centres and individual healthcare professionals in the dementia field.

d) Approach to analysis

As focus groups and interviews were conducted in the local language, it was decided that each local research team would produce a summary of the main and most recurring findings. All summaries were collapsed in an excel table. The analysis was performed using a thematic approach. Two researchers looked at the summaries and identified common trends and relevant differences between the countries that had participated in the study.

In addition, each partner offered all participants of their focus groups and interviews to send them the summary of their local notes and findings if they wished to review all notes and their quotes, and decide if there was any which they did not want to get published later.

e) Focus groups/interviews factsheet

<table>
<thead>
<tr>
<th>Country/Partner</th>
<th>Czech Republic DEX</th>
<th>Belgium UCLL</th>
<th>Spain CST</th>
<th>Spain SAS</th>
<th>Sweden BTH</th>
<th>UK SEPT</th>
<th>TOTAL</th>
<th>AVERAGE</th>
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</thead>
<tbody>
<tr>
<td>People with Mild Dementia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date(s) of focus groups/interviews</td>
<td>22.1.2016</td>
<td>26.1.2016</td>
<td>15.12.2015</td>
<td>20.1.2016</td>
<td>10.12.2015</td>
<td>28.1.2016</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Location of focus groups/interviews</th>
<th>Komunitní středisko Kontakt, Liberec</th>
<th>Geetbets</th>
<th>Terrassa, Barcelona</th>
<th>Mental Health Service, Regional Hospital Carlos Haya, Málaga</th>
<th>Day Center in the South Sweden</th>
<th>Harland Centre, Southend-on-sea, Essex</th>
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<tr>
<td>Number of people with dementia in focus groups</td>
<td>11</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Average age of people with dementia</td>
<td>76</td>
<td>75</td>
<td>72</td>
<td>75</td>
<td>69</td>
<td>67</td>
</tr>
<tr>
<td>Sex distribution among people with dementia (%)</td>
<td>73 % men / 27 % women</td>
<td>43 % men / 57 % women</td>
<td>29 % men / 71 % women</td>
<td>50 % men / 50% women</td>
<td>43 % men / 57 % women</td>
<td>100% male / 0% female</td>
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### CARERS

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<th>Date(s) of focus groups/interviews</th>
<th>22.1.2016</th>
<th>26.1.2016</th>
<th>15.12.2015</th>
<th>20.1.2016</th>
<th>17.6.2015</th>
<th>28.1.2016</th>
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<tr>
<td>Location of focus groups/interviews</td>
<td>Komunitní středisko Kontakt, Liberec</td>
<td>Geetbets</td>
<td>Terrassa, Barcelona</td>
<td>Mental Health Service, Regional Hospital Carlos Haya, Málaga</td>
<td>BTH, Karlskrona</td>
<td>Harland Centre, Southend-on-sea, Essex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of carers in focus groups</td>
<td>12</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>38</td>
<td>6</td>
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<tr>
<td>Average age of carers</td>
<td>59</td>
<td>55</td>
<td>63</td>
<td>40</td>
<td>55</td>
<td>65</td>
<td>N/A</td>
<td>57</td>
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<tr>
<td>Sex distribution among carers (%)</td>
<td>8 % men/92 % women</td>
<td>20 % men/80 % women</td>
<td>43 % men/57 % women</td>
<td>75% men / 25% women</td>
<td>0 % men/100 % women</td>
<td>25 % male / 75 % female</td>
<td>9 / 29</td>
<td>24 % men 76 % women</td>
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### HEALTHCARE PROFESSIONALS

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<td>Locations of interviews</td>
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<td>Neurology Service and Mental Health Service, Regional Hospital Carlos Haya, Málaga</td>
<td>Karlskrona</td>
<td>Harland Centre, Southend-on-sea, Essex</td>
<td></td>
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<td>2</td>
<td>5</td>
<td>6</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>Average age of healthcare professionals</td>
<td>42</td>
<td>40</td>
<td>41</td>
<td>48</td>
<td>NA</td>
<td>45</td>
<td>N/A</td>
<td>43</td>
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</tbody>
</table>
The average number of people with mild dementia in focus groups was 7. The Czech Republic had the largest group with 11 participants with dementia. The overall mean age of all was 73. Participants in the UK and Sweden were slightly younger than in the rest of the countries. More men than women participated in the focus groups (56% vs. 44%). In the UK and the Czech Republic the participation of men was relatively high.

The average number of carers in focus groups was 6. The Czech Republic had the largest group with 12 carer participants. The overall mean age of all was 57. Participants from Spain, Málaga were much younger than the rest of the countries. 76% of carer participants were female.

The average number of healthcare professionals interviewed was 4. Of all, 72% were female.
SELECTED PHOTOS FROM FOCUS GROUPS / INTERVIEWS

PEOPLE WITH MILD DEMENTIA AND THEIR CARERS

22/01/2016
FINDINGS FROM PHASE ONE

a) DAILY ACTIVITIES OF PEOPLE WITH MILD DEMENTIA

Most of the people with mild dementia carry out one or more of the following everyday activities - watching TV, going for a walk and calling their family members. In addition to these, a substantial amount of participants reported that they read newspapers and do mental exercises and puzzles to keep their brain active.

b) FAMILIARITY WITH CURRENT TECHNOLOGY/DEVICES USED AMONG PEOPLE WITH MILD DEMENTIA AND CARERS, AND THEIR FREQUENCY OF USE TODAY

Technology devices are not used extensively by people with mild dementia. Most of them use only TV, radio and their mobile phones daily. They use these mainly at home. Carers, on the other hand, are more familiar with the use of computers and a substantial number of them use or are familiar with using tablets. Still, not every carer feels confident about using technology.

Most people with mild dementia felt positive about using their mobile phones. Their primary motivation to use mobiles is to stay in touch with their family. Computers and tablets are viewed less positive than mobiles, however, when compared between each other, tablets do elicit a more positive opinion in people with mild dementia compared to computers.

As far as technology devices are concerned generally, their potential usage by people with dementia may be influenced by the following factors: contact with children and family, search for information and easiness of use. Some of the participants explained that interfaces need to be simple and intuitive so that any person, including those with cognitive impairment or low tech skills can use it. Some examples of how to make apps simple include: minimise the use of words and need to type, use of visual prompts and voice input. Another relevant factor was that it would imply to have just one central point for information and tech support. Finally, for some groups, the app needs to be attractive and get the attention of the person. The right balance in the amount of information/ reminders was a relevant issue for many.

c) APPLICATIONS/WEBSITES AND CATEGORIES OF CONTENT USED MOST FREQUENTLY BY PEOPLE WITH MILD DEMENTIA AND REASONS OF THE USEFULNESS

Most of the people with mild dementia in the groups do not use tablets or internet frequently or have little or any experience with using them. However, during discussions, the following categories of applications/websites were cited to have good motivation for people to use them: entertainment, search, communication (calls, SMS), music, games/brain games, TV, radio, localization, reminders and goods/services ordering sites.
d) POTENTIAL USAGE OF CURRENT FEATURES OF POW HEALTH PLATFORM AND THE REASONS WHY

The discussions revealed that the most valuable and important parts of the current Pow Health platform, when tailored to people with mild dementia, their carers and healthcare professionals would be the following: disease information and management including mainly practical steps to improve their conditions, medication and appointments reminders, calendar/daily journal, health record sharing and contact possibilities with healthcare professionals, community network, lifestyle trackers and summary reports for healthcare professionals.

e) OTHER SUGGESTED FEATURES FOR SMART4MD APPLICATION

From other suggested features for the SMART4MD application, the following have been cited as most important: memory games and activities for cognitive stimulation, personal photos/videos, video calls/messages, online games, voice reminders, reminders for other important things (such as TV programme), localization, mood tracker and other rich content raising adherence of people with mild dementia to using such platform and application (eg. internet access, etc.)

f) SMART4MD PLATFORM USAGE REQUIREMENTS AND MOTIVATION

Generally, both people with mild dementia and their carers cited that they will be happy to use SMART4MD application if it is easy enough to use without any help and does not have too many functions, has possibilities for adaptation and personalization of interface and functionalities and if it deals with privacy issues by easy to use sharing properties. Carers would use such application mainly as a support to people with mild dementia.

There were discrepancies among the groups in relation to impact of apps in caring. For some groups, apps and in particular reminders, could potentially take some pressure off carers and have a positive impact in the relationship between the person with dementia and the carer. In other groups, however this was perceived as potentially adding more burden to the carer.

A main concern raised only by one group was about the app “taking over” and replacing the ability of the person to function independently or to make the person more aware of his/her impairments. Most groups however perceived the app as potentially having a positive impact on the quality of life and independence. Another issue raised was the need of training and continuous motivation to use the app.

In relation to the potential usefulness some referred to the visits with health professionals, for others the app was perceived as a potential source of information about dementia and living well with dementia, and others emphasised the relevance of social contact either with their families or with other people experiencing similar problems.
The majority of people with dementia do not have problems with sharing of some information through the application, but do require to have an option to be able to choose which information to share with whom. Some participants however cited that they would feel too much controlled and checked if all information were shared with carers or healthcare professionals.

Healthcare professionals prefer to see information via the tablet during the visit, as well as being informed by relevant not frequent email alerts. Nevertheless, carers have been cited to be the first instance where alerts need to be pushed to.

Healthcare professionals are worried with people with dementia and carers being able to share majority of information with them, as they would have unrealistic expectations during medical visits given the time constraints.

**SUMMARY FROM PHASE ONE**

The following bullet points provide a general overview of the most important findings from this user-centred stage focused on content for the SMART4MD application.

**PEOPLE WITH DEMENTIA – TOP FINDINGS FROM PHASE ONE**

**CZECH REPUBLIC – DEX**

- Older generation is not used to modern technologies, not many of them use tablets and PCs now, nor applications or websites. They watch TV, use watches, read newspapers, journals, call with family, do mental exercises, go for a walk. These activities should be incorporated into as much as possible into any new technology or process to be used.
- Mobiles are a connection with a family – they like to be in contact with their children and contact with the family needs to be an important part of the application (e.g. video calls, texting etc.)
- Majority of people with dementia think they do not need reminders for anything which is in contradiction with carers’ opinion who think this exactly show that they need reminders.
- Most of the people with dementia would be willing to try the platform if there was a special training for using it at the start.
- The application needs to bring entertainment and richer content also for people with dementia to support everyday life, such as internet, crosswords, video calls, radio, music etc.

**BELGIUM – UCLL**
• Older people with dementia (75+) do not use ANY mobile devices (not even a simple mobile phone).
• People with dementia feel not confident at all that they will be able to use the app/tablet (they had less doubts when we explained it will be adapted to their needs and possibilities.
• People with dementia doubt it will add anything to their (quality of) life.
• People with dementia prefer to talk to someone in person, than via the app.
• For people with dementia, the app needs to be very simple, with large font text, and without an access code.

SPAIN – CST

• 86 % of people with dementia do not use internet.
• The features more useful were: videos about dementia, health record medicines, health record appointments, medicine tracking, sharing information.
• Feature social is relevant.
• The technology makes life easier.
• Not necessary disease information for people with dementia.

SPAIN – SAS

• Very easy.
• Capture my attention.
• Including my hobbies.

SWEDEN – BTH

• As long as I can remember certain things myself, I do not want to be reminded all the time. I am afraid that technology can take over so I lose the ability I have to remember.
• If I have to give a statement or analyze every day how I feel, then everyday will also be a reminder that I am getting worse. That would be sad because we know we are not getting better.
• Very important to get the right kind of support. To feel the safety in a group of peers to dare to learn together. I would very much like it to be in the group who have the same problem as me because then I would not feel stupid.
• Using images that complement the text, or audio but you should either be able to use standard images, or use your own personal photos. Highly own medicine bottles, contacts etc.
• Help to localize things and places and give me reminders that give control and have a calming effect, release stress and anxiety.
UK – SEPT

- Interface need to be very simple and intuitive, so that people with low tech skills and cognitive impairment can use the app. To this end, minimise use of words and need to type and instead use visual prompts and voice input. If the app is this easy to use, people with dementia felt if WOULD be useful in a number of ways.
- A key advantage of the app is that it would be a single resource for various tech support – reminders, calendar etc. (see point 3). Having just one central point of information would make it easier to remember to turn it on, take it to healthcare appointments etc.
- People with dementia liked the idea of medication reminders. They wanted an audio memor prompt (beep or similar) to remind them to take meds. But it is important that this would not be switched off till after the meds have been taken. They also felt a remibder about appointments would be useful. In connection with this, they particularly liked the idea of a place to ote in advance (by voice memo), things to raise with the healthcare professional when they mean to talk about particular symptoms and so on in appointments but then forget to mention them when the time comes. Would also like a place to record what healthcare professional says in appointments so they can remember that afterwards, too. Could be voice memo, too.
- They liked the idea of a journal and/or mood tracker. This should be voice input based as typing/spelling becomes difficult. In the main they did not want to share this ind of information with others though, apart from healthcare professionals.
- They liked the idea of being able to access information on the condition and hints and tips at ways of coping. Although such information is on the web, some of those present could not use the web easily. So an app which takes them in a very simple way to these resources would be very welcome. They were more interested in this than in a social function (the privacy was a concern here).

CARERS – TOP FINDINGS FROM PHASE ONE

CZECH REPUBLIC – DEX

- Memory activities for people with dementia on the platform are one of the most important features.
- Daily status shared by people with dementia each day would not be 100 % real as they might press more negative smileys than reality if they want to see the family and vice-versa.
- No information about carers on the platform (such as health information of care) due to personal information protection.
• Receiving alerts will increase the workload of the carer, but will also give reassurance that in case there is a problem, they will know/will be notified.
• Would use it mainly for support in patient care, not really for themselves.
• Communicating (via forum e.g.) with other carers is an advantage.

SPAIN – CST
• Functions that can be customized to the people with dementia.
• The carer has to be able to block certain functions.
• All of carers would use this tool (but only a bit) – you could have organized and archived medical history, contact with your doctor.

SPAIN – SAS
• Easy.
• Capture their attention.
• Security.

SWEDEN – BTH
• Important to create a context and to give the patient the opportunity to be able to orient themselves in space and time.
• Difference between the function and the realization of the function given personalization. Date and time, for example, displayed in different ways as a clock, image, colour indication, hourglass etc.
• To receive reminders just in time. Do not know that you will be there at 13:00, but rather – now you are gonna get dressed.

UK – SEPT
• Often proxy users of computers/digital tech on behalf of people they care for. Also like playing games online. Some Skype. But not all carers are very competent in digital tech themselves. They need good support in using computers etc. Relatives cannot always explain how to use even if they can use tech themselves. And do not want to bother others with continual questions.
People with dementia especially need a strong motivation to use tech in order to get over the difficulties in using it.

- A reminder function on an app is welcomed as it takes some pressure off carers who otherwise have to keep reminding the patient. This can cause tension in the relationship – carers accused of nagging. But need not to avoid having too many alerts as otherwise people begin to ignore them.
- Would like information support to help carers cope with stresses and strains of caring for someone with MD. Advising how other people manage.

HEALTHCARE PROFESSIONALS – TOP FINDINGS FROM PHASE ONE

CZECH REPUBLIC – DEX

- All healthcare professionals welcomed the project and application idea to support people with dementia mainly.
- Memory tests and activities should be a very important part of the application.
- No e-mail notifications, no real-time answers, only weekly summary reports and answers accessible online on some website to work with the information.

BELGIUM – UCLL

- App would help to have all information on a patient in one location.
- Advantage that patient’s progress/decline will be monitored daily (and can be checked whenever needed).
- Do not think people with dementia will be able to/motivated to use the app (they asked whether we investigated beforehand the need of people with dementia to use this).

SPAIN – CST

- All healthcare professionals would use the platform.
- The tool is designed to use the carer, most of the functions are more useful for the carer (e.g. education, health record) or for healthcare professionals (e.g. diaries and trackers).
- If it is difficult to use and more than help it would be a burden for the carer.

SPAIN – SAS
• Useful if people with dementia can be able to use it.
• It must be so easy,
• It will be more useful for carers.

SWEDEN – BTH

• The function must be fail-safe and going to rely on. Can technology help to provide security, it leads to increased well-being. The anxiety has a negative effect on the cognitive functions.
• I do not think anyone would opt out of the technology if they got it. I have not met anyone who does not want modifying drugs, and this tool is a type of modifying drugs.
• The reminders that are used should connect back to learned behaviors earlier on, such as alarm clock sound and function.

UK – SEPT

• All health care professional use computer/digital technology however feel that they are not very competent. In their view the key to motivate people with dementia to use technology would be that it should be very user friendly and should be very easy to access.
• Medication reminders, appointment reminders and reminder functions are very helpful. A popular suggestion was Voice Reminders. A balance needs to be achieved with the number of functions that the App does as too many functions may put people off from using it.
• Regarding support for carers in addition to information on disease management having a contact list of services like local Alzheimer’s society, Age concerns, Dementia nurses/GP would be very helpful.

SUGGESTED FEATURES – TOP FEATURES

CZECH REPUBLIC – DEX

• Memory games and activities.
• Video calls, private messaging with family + doctors (questions for doctors).
• Reminders of medicines and appointments + their lists.
• Personal and family photos + other richer content (internet, music).

BELGIUM – UCLL

This project is co-financed by the European Union under an EU Framework Programme for Research and Innovation - Horizon 2020, with a grant agreement number 643399. The sole responsibility for content of this report lies with the author and the European Commission is not responsible for any use that may be made of the information contained therein.
• Easy way to watch photos and videos and communicate (from/with family members and friends) are the main motivator for people with dementia to use the app.
• Reminders of appointments and visits will be useful.
• Reminders not as written messages, but spoken with video (not only speech).
• Combine with a watch or bracelet that vibrates (because older persons may have hearing problems and thus will not notice the reminders) or with a light signal together with a bell ringing.
• Easy way for charging the battery (which at least will have to last for one entire day) + solution in case they forget to charge.

SPAIN – CST

• Guidelines for disease management (the most important for carers).
• Online games (with voice) – carers.
• Photos (carers).
• Contact with other professionals (not only doctors, e.g. other neuropsychologist) – healthcare professionals.
• Links of cognitive stimulation – healthcare professionals.

SPAIN – SAS

• Videos with disease information.
• Reminders.
• Share record with my doctor.
• Keystroke with photo to call the family.
• Access to my hobbies (personal area).

SWEDEN – BTH

• Reminders to take medication.
• Create a structure throughout their daily lives.
• Communication and contact with others. Both professionals and carers but also people with dementia in the same group of diseases, which ultimately may result in that they are safe in using technology (community approach).
• Personal images linked to other functions such as reminders, daily schedule etc.
• Localisation (help to find both things and finding their way around).
UK – SEPT

- Information about dementia and suggested ways of coping/managing symptoms.
- Calendar – reminders appointments (also reminding what appointment is about).
- Medication reminder but must link to dosset box or onlly switch off after medication taken. Otherwise reminder goes, people switch off but then forget again before they have actually taken the medication.
- Appointment reminder coupled with voice memo function which can remind patient/carer of issues they want to bring up in the appointment.
- Mood tracker of journal via voice memo of how patient is feeling day to day. Both as way of making sense of dips in mood and also as a way of unburdening.

TOP QUOTES FROM PHASE ONE

CZECH REPUBLIC – DEX

- Mobiles are a connection with family and children (people with dementia).
- People with dementia think they do not need reminders, but carers said this exactly shows they really need them (carers).
- Easy connection to PC for download and third party software, memory tests, Skype, phone calls, emergency, application to recognize if the patient felt down etc. (healthcare professionals).
- Carers would feel stressed to know the patient feels bad and cannot visit him, it would not be 100% real anyway what they pushed about their mood as the might push more negative mood just to be able to see the family e. g. (carers).
- Include journal to calendar – carer could go through activities they did and train people with dementia´ memory (healthcare professionals).

BELGIUM – UCLL

- We are old and have rigid fingers, we cannot learn to use these devices anymore (people with dementia).
- Men like to read the newspapers, women prefer to read magazines (carers and healthcare professionals).
- Do not overload people with dementia with information, it will cause them stress (healthcare professionals).
• Believe that the app will be more helpful for carers than it will be for people with dementia (healthcare professionals).
• Receiving alerts will increase the workload of the carer, but will also give reassurance that in case there is a problem, they will know/be notified about it (carers).

SPAIN – CST

• This tool will serve for future generations (carers).
• In people with dementia with Mild Dementia, it could be difficult to use (healthcare professionals).
• A tool is very useful for carers (healthcare professionals).
• It could help the carer stress (healthcare professionals).
• Medicine reminders give autonomy to patient and liberate carer.

SPAIN – SAS

• This devices confuse me (people with dementia).
• I need something that capture my attention (people with dementia).
• Overall it could be easy, very very easy.
• It will be useful if it is easy and captures the attention of people with dementia.
• I want to select who receives the information (carers).

SWEDEN – BTH

• As long as I can remeber certain things myself, I do not want to be reminded all the time. I am afraid that technology can take over so I lose the ability I have to remember.
• If I have to give a statement or analyze every day how I feel, then everyday will also be a reminder that I am getting worse. That would be sad because we know we are not getting better.
• Functions must be fail-safe and reliable. Can this technology help to provide a sense of security, it leads to increase well-being.
• The structure is the most improtant thing – that you have a daily schedule visible and that the pad helps me through the day. Highlight what is done and to check what has been done. Personalized custom. Focus for some persons but for others that may not be necessary. In the first basic setting so it shall nonetheless be simple with few features to not reinforce the feeling of being odd and stand out.
Should there be different permissions? Rights? Can of course be fights about who has changed what? Is there a traceability of who has done what?

UK – SEPT

- Carer, talking about a value of a medication reminder: “I think it would take the onus off me, getting it in the neck every time I ask him to take them.”
- Patient talking about usefulness of being able to save a voice memo to tablet reminding him what to mention when he sees healthcare professional: “I think, I must tell him about this symptom or that symptom when I see him and then you go in, and you forget.”
- Patient talking about the app: “If it was user friendly, it could have huge benefits.”
- Patient: “Important thing is to have a single source of information.”
- Healthcare professional about the App: “It has to be very easy to access and too many functions on the App can put people off from using it.”

In addition to the bullet points above, an additional summary of interesting findings is presented below:

TECHNOLOGY/APPLICATION:

- Add mental exercises, cognitive stimulation.
- Most people with dementia have simple mobile phones as the newest technology used.
- Although people with dementia expressed that they feel positive about using technology, most of them prefer to use simple technology such as mobile phones mostly to communicate with their family.
- People with dementia expressed a positive feeling about using tablets, but they need to be easy to use and independently used, without the need to ask others how to use it.
- Login credentials or code inputs need to be avoided.
- Adaptation and personalization options need to be possible according to their conditions.
- It is not needed to have too many functions, just the most important are enough.
- Confirmation on what is happening is very important.
- Caregivers’ alerts have to be managed well enough (useful alerts/reminders, just in time, etc.) to avoid people ignoring them.
- Health professionals only need a weekly summary of the patient’s status.

MOTIVATIONS FOR PEOPLE WITH DEMENTIA TO USE THE APPLICATION:

- Hobbies and games (Sudoku, Korsord, music).
THINGS TO HAVE IN MIND:

- “As long as I remember certain things myself, I do not want to be reminded all the time. I am afraid that technology can take over so I lose the ability I have to remember.”
- What they feel awkward about is the fact that everyone can know where they are and what they are doing (they feel the need for privacy).
- “If I have to give a statement or analyse every day how I feel, then everyday will also be a reminder that I am getting worse. That would be sad because we know we are not getting better”
- Music is used to “wake up the memory” and as a basis for the dialogue in the group. It also has a soothing effect.

POTENTIAL USAGE OF CURRENT FEATURES OF POW HEALTH BY PEOPLE WITH DEMENTIA AND CARERS + REASONS

- **Education:**
  - In general people with dementia do not see these as being very useful for them.
  - Carers and healthcare professionals think that: very useful to include guidelines and advise for disease management, and useful for patient care (carer), but very unuseful for people with dementia themselves.

- **Health Record:**
  - People with dementia - health records: carers and healthcare professionals think that it would be useful to have a vision of people with dementia health status for: patient monitoring,
  - In general carers and healthcare professionals think that the monitoring could be done every month or 3 months depending on the patient status.
  - Regarding carers health record, carers do not see the importance of having this feature, but in general healthcare professionals think that it would be great to know if carers could score each day how they feel to monitor the carer, because carers status could affect the people with dementia as well.
Medication: in general reminders of medication intake for Carers and medication intakes reports for Healthcare Professionals. Regarding reminders for people with dementia there are many opinions: could not be useful at all due to most of them take their medication when given to them by the carer, and also Carers and doctors think that reminders for people with dementia could serve to motivate them to take the medication.

**IMPORTANT RELATED ISSUE TO ADDRESS:** if the PWD takes the medicine but does not push the button (so doesn’t inform the app that he/she has taken the medicine) will the PWD not take it again later because he forget? How to manage that situation?

Appointments: Good for carers, necessary to get the reminders just in time so you can prepare but not forget, good to be able to put everything in the calendar and have a daily schedule for example if somebody is visiting.

- **Diaries & Trackers:**
  - Quality of live tracking: useful for carers to know status of people with dementia. Not relevant or/and not essential for people with dementia because as for example: it reminds you that you are getting worse all the time.
  - MCI symptom tracking: It would be useful for the doctor but it is not useful because of poor awareness of disease.
  - Lifestyle tracking: physical activity, mental activity, free time activities, therapeutic plan should be done (physical activity, food, etc.) daily plan should be done and if not respected by patient than he could get a bad smiley and has to write why he didn’t, for example when he went to sleep etc. (not food etc.). Useful to see if you have routines (it should be easy). Always depending on the patient (hobbies, lifestyle, etc).
  - Connect to third party devices
  - Sharing: under the condition that I can decide with whom and what should be shared.
  - Social: useful for the carer. It would be great to share experiences and knowhow between people with the same problem (people with dementia and carers), a possibility to switch on for those interested, but not a standard feature

- **Communication:**
  - Notifications: useful for the carer (not all the time).

**OTHER SUGGESTED FEATURES**

- Memory games, photos and videos, music, guidelines for carers, calendar.
SMART4MD PLATFORM USAGE BY PEOPLE WITH DEMENTIA AND CARERS + MOTIVATION

- As a general opinion, carers and healthcare professionals think that people with dementia could use a tool like the one discussed in case it is simple enough to use.
- In general carers would use the app only as a support to people with dementia.

ETHICS

- In general people with dementia are comfortable with sharing information but they feel more comfortable if they can choose what personal information they share. Also, some have the feeling they will be ‘watched’ and ‘controlled’ all the time.
- In general Carers are comfortable with sharing information of people with dementia + carer with the doctor. Under the condition they can decide when and where and who and following security standards.
- Healthcare professionals:
  - Want to receive the information via application (as you will have all information in one place).
  - Receive alerts through email but on the right level – things that are relevant and that you can act upon. Also they think that Carers must be the first to received alerts.
  - Receive reports monthly or if there has been a change for example on QoL measures, adverse events, etc.
  - Mainly view the information at their work place through the tablet brought by people with dementia.

PHASE TWO: USABILITY TESTING

METHODOLOGICAL APPROACH (PHASE TWO)

In the Smart4MD project the principles for Agile software development are influencing the whole design and adaptation process. The inclusion of users and early and continuous testing of software, where changing the requirements based on user feedback with continuous improvement is an important part of the Agile methodology. Project involving people with dementia in developing applications is a fairly recent phenomenon, but a systematic review of earlier studies in the field has showed that their involvement in the design process has improved the usefulness and acceptability of the applications. It is also not without methodological challenges, from obvious reasons depending on the nature of the dementia problem complex. But since the SMART4MD application is aimed for persons with dementia as well as their informal caregivers and healthcare professionals, representatives from all these groups were invited to participate in the design and development of the application.
During the second round of user testing (focus groups/interviews/observation) of the prototype further involvement of users in order to ensure that undiscovered usability problems would be removed from the final application.

The following steps were taken in order to conduct the user testing:

- Preparation (ethical issues, information sheet, informed consent, guide for the moderator, recording, etc.)
- Focus groups/interviews/observations with patients and carers (inclusion, why, how, when, whom, how many, structure)
- Interviews with healthcare professionals (why, how, when, whom, how many, structure)
- Iteration of feedback between focus groups to enable better practices and adaptation
- Post-events activity
- Focus groups / interviews factsheet

Recruitment of end users:
Five partners from four different countries have conducted the focus groups/interviews.

<table>
<thead>
<tr>
<th>Participant no.</th>
<th>Participant organisation name</th>
<th>Participant short name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (Participant)</td>
<td>Consorci Sanitaria de Terrassa</td>
<td>CST</td>
<td>Spain</td>
</tr>
<tr>
<td>8 (Participant)</td>
<td>DEX Innovation Centre</td>
<td>DEX</td>
<td>Czech Republic</td>
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<tr>
<td>9 (Participant)</td>
<td>Servicio Andaluz de Salud</td>
<td>SAS</td>
<td>Spain</td>
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<tr>
<td>10 (Participant)</td>
<td>Blekinge Institute of Technology</td>
<td>BTH</td>
<td>Sweden</td>
</tr>
<tr>
<td>11 (Participant)</td>
<td>University College Leuven Limburg (Katholieke Hogeschool Limburg)</td>
<td>UCLL (KHL)</td>
<td>Belgium</td>
</tr>
</tbody>
</table>

Focus groups/interviews/observations with people with mild dementia and their carers
As for people with mild dementia and their carers, either focus groups or interviews have been set up as techniques to gather valuable feedback during this user-centred stage. Inclusion criteria for the people with mild dementia to take part in the focus groups were the following: age 55+, memory problems, living at home and having a carer. Participants of focus groups were recruited through various channels, including cooperating memory clinics, departments or medical centres, other healthcare professionals, relevant local stakeholders, and through a general promotion among public.

To protect participants from harm, researchers decided to use the same term used by them to refer to dementia. This was particularly relevant in some of the countries where still often people with dementia are still not fully disclosed their diagnosis. Often the term preferred and used by participants...
was memory or cognitive problems. In most cases, the focus groups included both people with dementia and carers in the same group.

At the beginning of the groups, participants were provided with information about the project and were given opportunities to ask questions about the project and about the focus groups. They were also reminded of the voluntariness of the participation, and other relevant ethical issues such as anonymity and confidentiality were also addressed. Permission to audiotape the discussions (if applied by some partners) and to take pictures was sought from participants in written or orally. Also, no information discussed and noted down or audio taped during the focus groups were attached to any specific participant’s name, and this was due to sensitivity and anonymity issues.

During this second round of focus groups, the aim was to get feedback from the users about the prototype of the application developed by POW Health. A series of focus groups and interviews were held in Czech Republic, Spain, Belgium and Sweden during October and November 2016. Focus groups attempts to use the potential for positive synergy in group work to gain more useful data than could be obtained from an equivalent string of individual interviews. Separate questions were developed for PWDs, caregivers and health professionals in order to get feedback of as many aspects as possible of the application’s design. The initial focus group was held in Sweden, including six persons with dementia and two caregivers. The feedback from this focus group was used to improve the prototype and improve how well the questions prepared for the focus groups were understood by the participants and identify if there were any topics missing. As a result, an additional question was added to the later focus groups.

Tablets containing the application were given to the users and questions were being asked about the design (including the functionalities). The feedback given by the PWDs, the caregivers and health professionals during the focus groups and interviews was synthesized and the result is featured in a later section of this report.  

A combination of different methods were merged to conduct the second round of Focus Group, in order to ensure the efficiently use of time and resources (including project partner work capacities, users and logistical resources). The following methods were used:

- Task analysis (as far as requirements, routines and processes are concerned)

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2 Note that, not all the sections that were presented to people with dementia, carers and health professionals for feedback were complete. For example, the section “About dementia” in the final version of the app will contain a number of sections relevant to people with dementia. In each of them, there will be background information about the section and several links from where the person will be able to find national / local information. For the focus groups and interviews, only the headings of each section were shared with participants.
Interviews with healthcare professionals
As for healthcare professionals, interviews were a preferred technique to gather their feedback during this user-centred stage. The main inclusion criterion for healthcare professionals was that they had to have a direct daily contact with people with mild dementia and their carers. Therefore, participating healthcare professionals included general practitioners, neurologists, geriatrists, and psychiatrists who were recruited from cooperating medical centres, memory clinics, local engaged dementia medical centres and individual healthcare professionals in the dementia field.

Usability Strategy
Usability Testing was used during the second round of Focus Groups in order to determine the usability of the SMART4MD prototype and to find ways to improve it (“formative testing”) based on the feedback of the end users, and the struggles they went through during the Focus Group.

Nielsen (1993) states that User Testing with real users is “the most fundamental usability method and is in some way irreplaceable, since it provides direct information about how people use computers and what their exact problems are with the concrete interface being tested.”

The main objectives of the usability testing are:

1. Measure the usability of the prototype, in order to determine whether it is already acceptably high.
2. Identify optimisation potentials, in order to increase the usability of the SMART4MD application.

In the case of SMART4MD end users performed some pre-defined tasks using the prototype and then will use interview techniques in order to find out which aspect of the interface and functionalities derailed a successful performance of the pre-defined tasks. Also, the internationally accepted standard DIN EN ISO 9241 will be used to measure usability. According to DIN EN ISO 9241, usability could be measured assessing the following parameters:

- **efficacy** is the extent to which the user is able to achieve the respective goal(s). Hence, efficacy is a relative measure, ranging from 0% to 100%. A common operationalisation of efficacy is the percentage of tasks completed successfully by the user.
- **efficiency** is the efficacy of the user, divided by the amount of resources the user needs to spend in order to reach this efficacy. A common measure of efficiency would therefore be the time to complete each task.
- **satisfaction** is the user’s “subjective reaction” to the interaction with the product (ISO 9241). User satisfaction is an emotion which results from the user comparing his expectations of the
system to his actual experiences with it. Satisfaction can therefore only be measured by asking
the user about his feelings towards the system.

In order to assess these parameters quantitative metrics will be collected during the second round of
Focus Groups. Also subjective metrics including questions asked during the execution of the Focus
Group, after each task completed, as well as general questions about overall satisfaction and
experience with the application. The following table show the metrics collected:

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Measurements</th>
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<tbody>
<tr>
<td>Performance Metrics</td>
<td>• Task success</td>
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<tr>
<td></td>
<td>• Time-on-task</td>
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<tr>
<td></td>
<td>• Errors</td>
</tr>
<tr>
<td></td>
<td><em>Effectiveness</em>: percent of task completed; ratio of successes to failures.</td>
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<tr>
<td></td>
<td><em>Efficiency</em>: time to complete the task; percent of number of errors; number of repetition or failed commands.</td>
</tr>
<tr>
<td>Issues-based Metrics</td>
<td>• What prevents task completion?</td>
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<tr>
<td></td>
<td>• What creates confusion?</td>
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<tr>
<td></td>
<td>• What produces an error?</td>
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<tr>
<td></td>
<td>• Why a user performs a wrong action?</td>
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<tr>
<td></td>
<td>• Why a user misinterprets content?</td>
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<td></td>
<td>• Why a user does not understand navigation?</td>
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<tr>
<td></td>
<td><em>Satisfaction</em>: satisfaction with function and features; number of users expresses frustration;</td>
</tr>
<tr>
<td>Behavioural Metrics</td>
<td>• Positive and negative comments</td>
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<tr>
<td></td>
<td>• Suggestions</td>
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<tr>
<td></td>
<td>• Confusion</td>
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<tr>
<td></td>
<td>• Frustration</td>
</tr>
<tr>
<td></td>
<td><em>Satisfaction</em>: satisfaction with function and features; number of user expresses frustration; positive attitudes towards the use of the system.</td>
</tr>
</tbody>
</table>

Approach to analysis
As focus groups and interviews were conducted in the local language, it was decided that each local
research team would produce a summary of the main and most recurring findings. All summaries were
collapsed in an excel table. The analysis was performed using a thematic approach. Two researchers
looked at the summaries and identified common trends and relevant differences between the
countries that had participated in the study.

In addition, each partner offered all participants of their focus groups and interviews to send them the
summary of their local notes and findings if they wished to review all notes and their quotes, and
decide if there was any which they did not want to get published later.
Notes

Based on the consortiums experience in working with people living with dementia, and of the nature of the user group the partners agreed on the following additional guidelines

1. Have a large observer to participant ratio so you can monitor the individual participant, where they struggle and what they say.
2. Usability tests should be a mix of groups and one on one interview.
3. When a participant does not manage and the observer offers help, the observer should try and help with words and note what words were effective in helping the user understand what to do.
4. Ask people things about their performance during the session but we have to be aware of their real performance during the execution of the task using quantitative measures.
5. Ask users to complete the task as far as they can without asking for help. If they need they can ask their caregiver for help to complete the tasks.
6. Also try and check if the back navigation confuses people

For each task:

1. For each task, the common starting point should be the home page
2. Identify any sections were the user is struggling.
3. Are terms and icons understandable? If the user needs help what term was helpful?
4. What sections made the users mode improve? What sections did the user’s mode worsen?
5. Ask is there something that would make this task easier or better for you
6. How do they get back to the start/home page at the end the task (ask them to go to the start page)
FOCUS GROUPS/INTERVIEWS FACTSHEET FROM PHASE TWO

<table>
<thead>
<tr>
<th>Country/Partner</th>
<th>Czech Republic DEX</th>
<th>Belgium UCLL</th>
<th>Spain CST</th>
<th>Spain SAS</th>
<th>Sweden BTH</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location of focus groups/interviews</strong></td>
<td>Centrum zdravotní a socialní péče, Liberec and Hotel Praha, Liberec</td>
<td>---</td>
<td>Terrassa, Barcelona</td>
<td>Málaga, Spain</td>
<td>Karlskrona, Sweden</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Number of people with dementia in focus groups</strong></td>
<td>---</td>
<td>5</td>
<td>5</td>
<td>8 (2 PWD had experience with tablets)</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td><strong>Average age of people with dementia</strong></td>
<td>70</td>
<td>---</td>
<td>73.6</td>
<td>77.2</td>
<td>64</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Sex distribution among people with dementia (%)</strong></td>
<td>100 % men / 0 % women</td>
<td>---</td>
<td>60 % men / 40 % women</td>
<td>60 % men / 40 % women</td>
<td>25 % men / 75 % women</td>
<td></td>
</tr>
<tr>
<td><strong>Location of focus groups/interviews</strong></td>
<td>Centrum zdravotní a socialní péče, Liberec and REVA o.p.s., Liberec</td>
<td>---</td>
<td>Terrassa, Barcelona</td>
<td>Málaga, Spain</td>
<td>Karlskrona, Sweden</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Number of carers in focus groups</strong></td>
<td>5</td>
<td>---</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td><strong>Average age of carers</strong></td>
<td>52</td>
<td>---</td>
<td>71.2</td>
<td>57</td>
<td>44</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Sex distribution among carers (%)</strong></td>
<td>0 % men / 100 % women</td>
<td>---</td>
<td>40 % men / 60 % women</td>
<td>50 % men / 50 % women</td>
<td>0 % men / 100 % women</td>
<td></td>
</tr>
<tr>
<td><strong>Locations of interviews</strong></td>
<td>Liberec, Praha, Liberec</td>
<td>ExpertiseCentrum Dementie, Hasselt</td>
<td>Terrassa, Barcelona</td>
<td>Málaga, Spain</td>
<td>Karlskrona, Sweden</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Number of interviews</strong></td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td><strong>Average age of healthcare professionals</strong></td>
<td>47</td>
<td>---</td>
<td>41</td>
<td>41</td>
<td>---</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Sex distribution among healthcare professionals (%)</strong></td>
<td>0 % men / 100 % women</td>
<td>50% men / 50% women</td>
<td>25 % men / 75 % women</td>
<td>66.6% men / 33.3 % women</td>
<td>33 % men / 66 % women</td>
<td></td>
</tr>
</tbody>
</table>
SELECTED PHOTOS FROM PHASE TWO FOCUS GROUPS / INTERVIEWS
DATA COLLECTED FROM PHASE TWO

6.1 PEOPLE LIVING WITH DEMENTIA:

1. Application Launch:

Task 1.1: Enter to the application from the tablet home page. Is the text under the icon understandable?

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of successful completed tasks</td>
<td>Not tested due to technical problems</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average time to find and open the app (s)</td>
<td>---</td>
<td>---</td>
<td>5.6</td>
<td>6</td>
<td>Not measurable due to need of guidance</td>
</tr>
<tr>
<td>Average number of taps to complete the tasks</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>1</td>
<td>Not measurable due to need of guidance</td>
</tr>
<tr>
<td>Label meaning - was it’s purpose recognized immediately</td>
<td>---</td>
<td>---</td>
<td>100% understood immediately</td>
<td>100% Yes</td>
<td>33 % understood immediately; 67% needed guidance in order to understand the content</td>
</tr>
<tr>
<td>Need help to complete the task</td>
<td>---</td>
<td>---</td>
<td>0%</td>
<td>0%</td>
<td>67% needed guidance to understand label meaning; 50% of users needed guidance to get back to home page</td>
</tr>
<tr>
<td>Average number of errors</td>
<td>---</td>
<td>---</td>
<td>0</td>
<td>0</td>
<td>---</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----</td>
<td>-----</td>
<td>---</td>
<td>---</td>
<td>-----</td>
</tr>
<tr>
<td>Comments:</td>
<td>---</td>
<td>---</td>
<td>I have recognized well the icon</td>
<td>I have recognized well the icon</td>
<td>Three patients found it hard to read the texts with the smallest font size.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>I have recognized well the icon</td>
<td>I have recognized well the icon</td>
<td>Two patients found the texts and icons in the menu on the homepage easy to understand and easy to navigate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One patient found that the chosen background colours (especially the green/turquoise) in the menu made it hard to read the text.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One patient found the icons in the menu vague and hard to understand and would have preferred larger text without icons.</td>
</tr>
<tr>
<td>Sections where the user struggled</td>
<td>---</td>
<td>---</td>
<td>0</td>
<td>0</td>
<td>Homepage; Menu</td>
</tr>
</tbody>
</table>
2. Manage Reminders:

Task 2.1: Set a reminder with the following parameters: <define common parameters such as: date, time, reminder text, reminder frequency>

Task 2.2: Mark a reminder as "remind me in 5 minutes" (set a reminder before in order to test alert management)

Task 2.3: Mark a reminder as "done"

<table>
<thead>
<tr>
<th>Terms that were helpful</th>
<th>---</th>
<th>---</th>
<th>---</th>
<th>---</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood change (researcher interpretation): 1-5 (1 is a decrease in the users mood, 3 is the same and 5 is an improvement of mood)</td>
<td>---</td>
<td>---</td>
<td>3 (100%)</td>
<td>3 (100%)</td>
</tr>
</tbody>
</table>

Responses to: Is there something that would make this task easier or better for you?

---

Mood change (researcher interpretation): 1-5 (1 is a decrease in the users mood, 3 is the same and 5 is an improvement of mood)

Responses to: Is there something that would make this task easier or better for you

---

DATA COLLECTED

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of successful T2.1 finished</td>
<td>33%</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>17% managed independently; 83% needed guidance to complete task</td>
</tr>
<tr>
<td>Average time to complete T2.1 (s)</td>
<td>300</td>
<td>---</td>
<td>68.2</td>
<td>70</td>
<td>Not measurable due to need of guidance</td>
</tr>
<tr>
<td>Average number of taps to complete T2.1</td>
<td>25</td>
<td>---</td>
<td>1.6</td>
<td>4</td>
<td>Not measurable due to need of guidance</td>
</tr>
<tr>
<td>Need help to complete the T2.1</td>
<td>100% of users that needed help: patients got lost within the current alerts set up and haven’t found a way to set up a</td>
<td>---</td>
<td>0 %</td>
<td>66.6%</td>
<td>83% See comments for further explanation</td>
</tr>
</tbody>
</table>

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new alert without proper help, didn’t scroll down and look for new, there was too much information to request and select from, too complicated for the user.

<table>
<thead>
<tr>
<th>% of successful T2.2 finished</th>
<th>Not tested</th>
<th>---</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time to complete T2.2 (s)</td>
<td>---</td>
<td>---</td>
<td>19.4</td>
<td>17</td>
<td>Not measured</td>
</tr>
<tr>
<td>Average number of taps to complete T2.2</td>
<td>---</td>
<td>---</td>
<td>1.5</td>
<td>1.5</td>
<td>Not measured</td>
</tr>
<tr>
<td>Need help to complete the T2.2</td>
<td>---</td>
<td>---</td>
<td>0 %</td>
<td>66.6%</td>
<td>83%</td>
</tr>
<tr>
<td>% of successful T2.3 finished</td>
<td>Not tested</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average time to complete T2.3 (s)</td>
<td>---</td>
<td>---</td>
<td>8.6</td>
<td>6</td>
<td>Not measured</td>
</tr>
<tr>
<td>Average number of taps to complete T2.3</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>1</td>
<td>Not measured</td>
</tr>
<tr>
<td>Need help to complete the T2.3</td>
<td>---</td>
<td>---</td>
<td>0%</td>
<td>33.3%</td>
<td>83%</td>
</tr>
<tr>
<td>Average errors from tasks 2.1, 2.2, 2.3</td>
<td>T2.1: not possible to find how to set up new alert without help, when helped, there was too much information to request and select from, too complicated for the user</td>
<td>---</td>
<td>0</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
Five out of six patients (83%) needed support from a caregiver in order to find and click on the Add a reminder button.

Many of the patients found the My Reminders menu in the week mode “messy”, with too many squares too close to each other. They found the one-day-mode much easier to understand and get an overview of.

Two patients found the font size to set the date and time for a reminder too small.

A couple of patients commented that they wished that the week in the existing calendar should start with a Monday and not a Sunday.

One patient was missing a Return button.

One patient commented that in
As above --- 0 --- Add Reminders; Date and Time; Notifications

Sections where the user struggled

Terms that were helpful

Mood change (researcher interpretation): 1-5 (1 is a decrease in the users mood, 3 is the same and 5 is an improvement of mood)
### 3. Reminder goes off for medication:

Task 3.1: Ask the user, if this was their application what would they do next? Confirm that the reminder is understood.

| Responses to: Is there something that would make this task easier or better for you | More simple was how to add, not too many things to input and select from, max 2 levels for structure of menu. | --- | No | To know I take my medicine: - the button could change the colour (red = not taken; green = taken) (n=2) - The button could flicker (n=2) | See comments above |
| How do they get back to the start/home page at the end the task? Did they need help? What terms were useful? | Great, home button works well. | --- | Yes, 80% need help. Average time: 55.8s | 100% complete the task 80% need help Comments: The option of get back there isn’t in all pages. | 17% managed first time without help (33% managed without help after one instruction; 50% managed without help after 2-3 repeated instructions) |

DATA COLLECTED

| DEX Innovation Centre (Czech Republic) | UCLL (Belgium) | CST (Spain) | SAS (Spain) | BTH (Sweden) |
| Comments: | Not tested | --- | The reminder is well understood. I do not need more things. It seems appropriate in this function. | The reminder is well understood. It seems appropriate in this function. | --- |

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Task 3.2: Confirm if they would switch it off before or after they take the medication. Confirm if they would use the snooze and then turn it off after the medication. What is the likelihood that they will take the medication?

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of users who completed the task successfully</td>
<td>Not tested</td>
<td>---</td>
<td>80%</td>
<td>100%</td>
<td>67% (33% did not understand the task due to level of abstraction and limitations of prototype)</td>
</tr>
<tr>
<td>% of users who switch it off before taking the medication</td>
<td>---</td>
<td>---</td>
<td>40%</td>
<td>40%</td>
<td>100% (out of the 67% who understood)</td>
</tr>
<tr>
<td>% of users who switch it off after taking the medication</td>
<td>---</td>
<td>---</td>
<td>60%</td>
<td>60%</td>
<td>0% (out of the 67% who understood the question)</td>
</tr>
<tr>
<td>Average time to switch it off (s)</td>
<td>---</td>
<td>---</td>
<td>34.2</td>
<td>36</td>
<td>Not measurable due to prototype limitations</td>
</tr>
<tr>
<td>% of users who would use the snooze</td>
<td>---</td>
<td>---</td>
<td>20%</td>
<td>20%</td>
<td>Question too abstract to be fully understood by patients due to limitations of prototype</td>
</tr>
<tr>
<td>Need help to complete the T3.2</td>
<td>---</td>
<td>---</td>
<td>20%</td>
<td>60% of users needed help</td>
<td>67% of users needed help</td>
</tr>
<tr>
<td>Errors from task T3.2</td>
<td>---</td>
<td>---</td>
<td>0</td>
<td>0</td>
<td>---</td>
</tr>
<tr>
<td>Comments:</td>
<td>---</td>
<td>---</td>
<td>40% did not understand the task</td>
<td>It notify me then I take it</td>
<td>---</td>
</tr>
<tr>
<td>Sections where the user struggled</td>
<td>---</td>
<td>---</td>
<td>0</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Terms that were helpful</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Mood change (researcher interpretation): 1-5 (1 is a decrease in the users mood, 3 is the same and 5 is an improvement of mood)</td>
<td>---</td>
<td>---</td>
<td>3 (100%)</td>
<td>80%; 3 (same mood)</td>
<td>20%; 4</td>
</tr>
<tr>
<td>Responses to: Is there something that would make this task easier or better for you?</td>
<td>---</td>
<td>---</td>
<td>No</td>
<td>Change of button colour when I</td>
<td>---</td>
</tr>
</tbody>
</table>
Task 3.3: Discuss if the reminder and snooze should be reworded to make sure they take the medication.

| Responses to: What would motivate you to take the medication instead of turning the reminder off without taking their medication? | --- | --- | Any | If I don’t take in the moment I forget it. I always take my medicine |
| --- | --- | --- | --- |

4. Relation with People:

Task 4.1: Add an album

Task 4.2: Add a person (in family) and take a photo

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCCL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments</td>
<td>Not tested</td>
<td>---</td>
<td>It is fine as it is (100%)</td>
<td>No: 80% Change the colour, if I don’t take the medicine the button is red and when I take it the button turn green.</td>
<td>Question too abstract to be fully understood by patients due to limitations of prototype and level of abstraction</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>(Czech Republic)</th>
<th>% of successful</th>
<th>Average time to complete T4.1 (s)</th>
<th>Average number of taps to complete T4.1</th>
<th>Need help to complete the T4.1</th>
<th>% of successful</th>
<th>Average time to complete T4.2 (s)</th>
<th>Average number of taps to complete T4.2</th>
<th>Need help to complete the T4.2</th>
<th>Errors from tasks 4.1, 4.2</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>T4.1</td>
<td>100%</td>
<td>30</td>
<td>3</td>
<td>100% of users that needed help – they need to be advised that photos are under <em>people</em> label</td>
<td>30</td>
<td>15.6</td>
<td>2</td>
<td>100% of users that needed help - they need to be advised that photos are under <em>people</em> label</td>
<td>30</td>
<td>86</td>
</tr>
<tr>
<td>T4.1: 66% - patients tapped to other label than people</td>
<td>---</td>
<td>0</td>
<td>---</td>
<td>See comments below</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All patients struggled more with adding an album than adding a person even though all patients needed some support to complete all tasks. Many of the patients found it good to be</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
able to gather his or her contacts in one place.

Many of the patients thought it would be good if the information, e.g. telephone numbers, would be automatically updated.

Many of the patients found the square information under each person unnecessary. To them it would have been enough with just the telephone number.

One out of three patients struggled to know where to click to fill in the text when adding an album or a contact.

One out of three patients had difficulties to see the Take a photo button.

One patient commented that on the Family picture, the family turned their back on the viewer, something she found very negative.
5. Manage Health:

Task 5.1: Set a health tracker.

Task 5.2: Check "my health record"

Task 5.3: Set an appointment with the following parameters.

<table>
<thead>
<tr>
<th>Sections where the user struggled</th>
<th>Rename people to photos</th>
<th>---</th>
<th>0</th>
<th>---</th>
<th>Add albums;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terms that were helpful</td>
<td>photos</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Mood change (researcher interpretation): 1-5 (1 is a decrease in the users mood, 3 is the same and 5 is an improvement of mood)</td>
<td>4</td>
<td>---</td>
<td>3 (100%)</td>
<td>60%: 3 (same mood)</td>
<td>40%: 4</td>
</tr>
<tr>
<td>Responses to: Is there something that would make this task easier or better for you</td>
<td>To rename to photos</td>
<td>---</td>
<td>---</td>
<td>No, I like it (n=1)</td>
<td>See comments above</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of successful finished T5.1</td>
<td>66%</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>33%</td>
</tr>
<tr>
<td>Average time to complete T5.1 (s)</td>
<td>60</td>
<td>---</td>
<td>28</td>
<td>26</td>
<td>Not measurable due to need of guidance</td>
</tr>
<tr>
<td>Average number of taps to complete T5.1</td>
<td>6</td>
<td>---</td>
<td>3</td>
<td>5</td>
<td>Not measurable due to</td>
</tr>
<tr>
<td>Need help to complete the T5.1</td>
<td>66% of users that needed help – first tap ok, then lost in submenu to tap again</td>
<td>---</td>
<td>0%</td>
<td>80%</td>
<td>100%</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of successful finished T5.2</td>
<td>100%</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average time to complete T5.2 (s)</td>
<td>20</td>
<td>---</td>
<td>40.2</td>
<td>30</td>
<td>Not measured</td>
</tr>
<tr>
<td>Average number of taps to complete T5.2</td>
<td>3</td>
<td>---</td>
<td>3</td>
<td>3</td>
<td>Not measured</td>
</tr>
<tr>
<td>Need help to complete the T5.2</td>
<td>0%</td>
<td>---</td>
<td>0%</td>
<td>60%</td>
<td>100%</td>
</tr>
<tr>
<td>% of successful finished T5.3</td>
<td>0%</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Average time to complete T5.3 (s)</td>
<td>---</td>
<td>---</td>
<td>44.6</td>
<td>43</td>
<td>Not measurable due to need of guidance</td>
</tr>
<tr>
<td>Average number of taps to complete T5.3</td>
<td>20+</td>
<td>---</td>
<td>3</td>
<td>8</td>
<td>Not measurable due to need of guidance</td>
</tr>
<tr>
<td>Need help to complete the T5.3</td>
<td>100% of users that needed help, didn’t know how to do it within alerts and didn’t go to health record</td>
<td>---</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Errors from tasks 5.1, 5.2, 5.3</td>
<td>After getting to reminders is lost in current reminders and cannot find add a new reminder, with help</td>
<td>---</td>
<td>0</td>
<td>---</td>
<td>See comments below</td>
</tr>
<tr>
<td>Sections where the user struggled</td>
<td>Put it to more flat menu structure not to have new reminder under current reminders</td>
<td>---</td>
<td>0</td>
<td>When they read Term: Health record (Registro de salud)</td>
<td>My health; grading Memory</td>
</tr>
</tbody>
</table>

Two out of three patients struggled to understand the differences between the three different categories under My Health.

One out of three patients was disturbed by the circles and numbers used when grading their Memory capacity, and would have preferred a straight line instead.

Two out of three patients struggled to do it alone. Please, help me because I'm getting nervous and I do it so slow. This is a little difficult for me.

One out of three patients was disturbed by the circles and numbers used when grading their Memory capacity, and would have preferred a straight line instead.

Sections where the user struggled

Put it to more flat menu structure not to have new reminder under current reminders

---

0

When they read Term: Health record (Registro de salud)

My health; grading Memory

Comments: asked for too much information

As above + doesn't see that alerts are scrollable

I do not see well

I do not see well

I don’t dare to do it alone

Please, help me because I'm getting nervous and

I do it so slow

This is a little difficult for me

This is a little difficult for me

Two out of three patients struggled to understand the differences between the three different categories under My Health.
6. Entertainment and Get knowledge:

Task 6.1: Check the "About Dementia" section.

Task 6.2: Games - Are they easy to find? Would the links be used? Would you be less likely to use it if we remove the word memory?

<table>
<thead>
<tr>
<th>Terms that were helpful</th>
<th>---</th>
<th>---</th>
<th>---</th>
<th>Change “mi registro” for “mi salud” Change “mi registro” for “registrar mi salud”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood change</td>
<td>2</td>
<td>---</td>
<td>3 (100%)</td>
<td>60%: 3 20%: 2 20%: 4</td>
</tr>
<tr>
<td>(researcher interpretation): 1-5 (1 is a decrees in the users mood, 3 is the same and 5 is an improvement of mood)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responses to: Is there something that would make this task easier or better for you</td>
<td>---</td>
<td>---</td>
<td>Somebody do it on behalf of me (n=2) The same color for medicines or appointment in all screens Change the name</td>
<td>See comments above</td>
</tr>
</tbody>
</table>

DATA COLLECTED

<table>
<thead>
<tr>
<th></th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of successful T6.1 finished</td>
<td>100%</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average number of taps complete T6.1</td>
<td>2</td>
<td>---</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Need help to complete the T6.1</td>
<td>50%</td>
<td>---</td>
<td>0%</td>
<td>40%</td>
<td>0%</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Errors from T6.1</th>
<th>1 patient clicked on health record instead of about dementia</th>
<th>---</th>
<th>0</th>
<th>---</th>
<th>See comments below</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Comments:</th>
<th>As above</th>
<th>---</th>
<th>No comments</th>
<th>I don’t know if I would read this</th>
<th>Five out of six patients found the given headers under Information about dementia adequate.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Many patients found it important to have easy access to information about how to live a good life with dementias + information about what help and support the society was offering.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Many patients found it important to be able to individually regulate what kind of headings and information</td>
</tr>
</tbody>
</table>
One patient suggested the following headers instead:
Facts/Info about dementia;
Living a good life with dementia;
From where can I get help and support/Who can I turn to? (instead of External help & Resources).

Two out of three patients explicitly said that the most important info they wanted in this section was updated research reports about Alzheimer and other dementias, especially concerning potential...
### Sections where the user struggled

- Didn’t scroll down to last menu about dementia and pressed health record and didn’t find it

### Terms that were helpful

| Mood change (researcher interpretation): 1-5 (1 is a decrease in the users mood, 3 is the same and 5 is an improvement of mood) | 4 | --- | 3 (100%) | 3 (100%) | 3 |

### Responses to: Is there something that would make this task easier or better for you

- No, nothing

### % of successful T6.2 finished

| 100% | --- | 100% | 100% | 100% |

### Average time to complete T6.2 (s)

| 5 | --- | 25 | 24 | Not measured |

### Average number of taps to complete T6.2

| 1 | --- | 1.8 | 2 | Not measured |

### Need help to complete the T6.2

| 0% | --- | 0% | 40% | 0% |

### Errors from T6.2

| 0 | --- | 0 | --- | --- |

### Would you be less likely to use it if we remove the word memory?

- No, it would use the same

### Comments:

- Yes, it may be useful
- It may be that it would use

A majority of the patients thought Games a better name than Memory Games.
Many patients found it important that the games available would train one’s memory and be able to adjust to one’s cognitive capacity.

Many patients found it important that the games would not be too childish, which they found to be the case with many memory games today.

Many patients said they would like to be able to play music via Spotify and YouTube through the app.
### Task 6.3: Change user. (Optional)

<table>
<thead>
<tr>
<th><strong>DATA COLLECTED</strong></th>
<th><strong>DEX Innovation Centre (Czech Republic)</strong></th>
<th><strong>UCLL (Belgium)</strong></th>
<th><strong>CST (Spain)</strong></th>
<th><strong>SAS (Spain)</strong></th>
<th><strong>BTH (Sweden)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>% of successful Change user finished</td>
<td>---</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>---</td>
</tr>
<tr>
<td>Average time to complete T6.2 (s)</td>
<td>---</td>
<td>---</td>
<td>43</td>
<td>45</td>
<td>---</td>
</tr>
<tr>
<td>Average number of taps to complete T6.2</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>1</td>
<td>---</td>
</tr>
<tr>
<td>Need help to complete the T6.2</td>
<td>---</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>---</td>
</tr>
<tr>
<td>Errors from T6.2</td>
<td>---</td>
<td>---</td>
<td>0</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Comments:</td>
<td>---</td>
<td>---</td>
<td>It is very small I can’t see this letter size I did not see</td>
<td>It is very small I can’t see this letter size I did not see</td>
<td>---</td>
</tr>
<tr>
<td>Sections where the user struggled</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>Size</td>
<td>---</td>
</tr>
<tr>
<td>Terms that were helpful</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Mood change (researcher interpretation): 1-5 (1 is a decrease in the user's mood, 3 is the same and 5 is an improvement of mood)</td>
<td>---</td>
<td>---</td>
<td>3 (100%)</td>
<td>3 (100%)</td>
<td>---</td>
</tr>
</tbody>
</table>

Mood change (researcher interpretation): 1-5 (1 is a decrease in the user's mood, 3 is the same and 5 is an improvement of mood)
### 6.2 CAREGIVERS:

7. Application Setup:

Task 7.1: First set up of the application. Ask users to complete the set up process asking for help only when needed.

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of successful T7.1 finished</td>
<td>100%</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average time to complete T7.1</td>
<td>600 sec</td>
<td>---</td>
<td>1.2 sec (find and open the application)</td>
<td>80 sec</td>
<td>8min (including some explanations)</td>
</tr>
<tr>
<td>Average number of taps complete T7.1</td>
<td>20</td>
<td>---</td>
<td>1 (find and open the application)</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>Need help to complete the T7.1</td>
<td>0%</td>
<td>---</td>
<td>0%</td>
<td>100%</td>
<td>67% of users needed help (due to limitations of prototype)</td>
</tr>
<tr>
<td>Errors from T7.1</td>
<td>---</td>
<td>---</td>
<td>0</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Comments:</td>
<td>Process is simple, will be set up by carer and healthcare professional only as start we think (not patient)</td>
<td>No comments</td>
<td>It's so well Uff, it's very complicated Could you do it for me?</td>
<td>Application setup seen as simple and intuitive in general, although prototype limitations forced most caregivers to ask for help in order to proceed.</td>
<td>Alarm</td>
</tr>
</tbody>
</table>

Responses to: Is there something that would make this task easier or better for you

---

No, nothing
8. Manage Health:

- All caregivers lacked the possibility to listen to the different types of alarm sounds before making their choice.
- One caregiver questioned whether ‘siren’ really is a good alarm option. To the caregiver that sound had bad connotations.
- One caregiver emphasized that it is important that the sound is not too sharp.
- One caregiver said it is important that the sound is different from their mobile phone signal.
- One caregiver wanted the alarm to ring for 5-10 seconds and then automatically be turned off, but ring again after some time unless the person has pressed “Done”.

Responses to: Is there something that would make this task easier or better for you

See comments above
Task 8.1: Add a medicine with the following parameters: < Ifty: what, when, where, who with>
Supported: Add medicine name and How often taken. In working version other options would be
dynamically presented based on response to field selected, such as, dosage and times taken so can set
a schedule.

Task 8.2: Check "my health record"

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of successful T8.1 finished</td>
<td>33%</td>
<td>---</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average time to complete T8.1</td>
<td>120</td>
<td>---</td>
<td>46.6 sec</td>
<td>44 sec</td>
<td>3 min (including some explanations)</td>
</tr>
<tr>
<td>Average number of taps to complete T8.1</td>
<td>15</td>
<td>---</td>
<td>5</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Need help to complete the T8.1</td>
<td>66% of users went to monitor health and then to trackers instead of health record.</td>
<td>---</td>
<td>0%</td>
<td>0%</td>
<td>67% of users needed help</td>
</tr>
<tr>
<td>Errors from T8.1</td>
<td>As above</td>
<td>---</td>
<td>0</td>
<td>0</td>
<td>---</td>
</tr>
</tbody>
</table>
| Comments: | To make the structure more flat so it is not under many clicks, perhaps better translations | --- | No comments | --- | All caregivers intuitively clicked on Add a reminder instead of My Health in order to add a medicine, and commented that all different kinds of reminders ought to be set and found under the same category.

One caregiver wished to be able to have more options when it
comes to setting the time and date for a Medicine reminder for example: every second day, once a week, or a specific date.

| Responses to: Is there something that would make this task easier or better for you | Better translations, not too many clicks | --- | It’s easier | The same colour in the two screens, one is green and other blue. | See comments above |
|---|---|---|---|---|
| % of successful T8.2 finished | 100% | --- | 100% | 100% | 100% |
| Average time to complete T8.2 (s) | 15 | --- | 5.8 | 5 | 4 sec |
| Average number of taps to complete T8.2 | 3 | --- | 2.5 | 1.6 | 2 |
| Need help to complete the T8.2 | 100% of users that needed help in showing possible to scroll down for health record button in submenu | --- | 0% | 0% | 0% |
| Errors from T8.2 | --- | --- | 0 | --- | 0 |
| Comments: | Too many clicks | --- | No comments | No comments | All caregivers needed explanations about My health record (Hälsoprotokoll) in order to fully understand the purpose of the different functions. One caregiver was confused about the |
9. Add appointments:

Task 9.1: Add an appointment with the following parameters

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of successful T9.1 finished</td>
<td>33%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Average time to complete T9.1 (s)</td>
<td>140</td>
<td>---</td>
<td>51.2</td>
<td>45</td>
<td>Not measured</td>
</tr>
<tr>
<td>Average number of taps to complete T9.1</td>
<td>10+</td>
<td>---</td>
<td>2.8</td>
<td>8</td>
<td>Not measured</td>
</tr>
<tr>
<td>Need help to complete the T9.1</td>
<td>66% of users that needed help with showing the possibility to add new reminder</td>
<td>---</td>
<td>100%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>Errors from T9.1</td>
<td>Couldnt add a new reminder</td>
<td>---</td>
<td>0</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Do users understand the Appointments reminder screen?</td>
<td>---</td>
<td>---</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (100%)</td>
</tr>
</tbody>
</table>

colour choice for Medicine reminders; in some places, it has a blue colour and in others it has a purple. It should be the same colour everywhere, she thought.

Responses to: Is there something that would make this task easier or better for you or for the person with dementia

Make it in a way that it is not needed to scroll down so much.

---
No
No
See comments above

---
No
No
See comments above
| Is the Week view and Day view useful? | --- | --- | Yes | Yes (100%), but hard to find (50%) |
| Comments: | As above + mostly carers went to current reminders menu where it was difficult for them. | It’s good | It’s good The description box could be more useful for my mother | One caregiver wished to be able to have more options when it comes to setting the time and date for an Appointment reminder, for example: 1-5 h before, 1-2 days before, etc. One caregiver wished to be able to add several alarms to one activity, for example one alarm that goes off the day before and one alarm that goes off an hour before the activity starts. All caregivers wanted to be able to set all appointments (both healthcare-related appointments and other kinds of appointments) under the category My Reminders. |
| Responses to: Is there something that would make this task easier or better for you or for the person with dementia | For the new doctor appointment, it would be great ot have there also type of doctor (e.g. GP, geriatrist, yes | No | No | See comments above |
10. Add a photo:

Task 10.1: Browse, find and upload a pre-loaded photo or take a photo.

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments:</td>
<td>They had troubles with finding add a person and add a new album, they started clicking on currently available folders, they create new album instead of adding a new person to current album, blue call to action button with white text is very badly visible – need to change the design of the call to action buttons.</td>
<td>---</td>
<td>No comments</td>
<td>No comments</td>
<td>All caregivers were positive to this feature. “As images are a resource for the memory it is very important to be able to use images in order to remember and communicate experiences with others”, one caregiver commented.</td>
</tr>
</tbody>
</table>

Responses to: Is there something that would make this task easier or better for you or for the person with dementia?

Make new photo, new folder more easily findable and bigger, better design for call to action button.

---

No

No

No

---

11. Information about dementia:

Task 11.1: Look at the topics. Ask them if there is any topic missing and if the topics already included meet their needs.
### DATA COLLECTED

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEX</td>
<td>Innovation Centre</td>
<td>I think that’s all</td>
</tr>
<tr>
<td></td>
<td>(Czech Republic)</td>
<td>No, I think that’s all</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support and questions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Management of dementia</td>
</tr>
<tr>
<td>UCLL</td>
<td></td>
<td>I don’t know (n=4)</td>
</tr>
<tr>
<td>CST (Spain)</td>
<td></td>
<td>It’s difficult If you don’t know the content of all sections</td>
</tr>
<tr>
<td>SAS (Spain)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTH (Sweden)</td>
<td></td>
<td>One caregiver found it good to be able to choose individually which headings to include or not, so that if a person not is interested in planning their healthcare in advance, that heading would not have to be included.</td>
</tr>
</tbody>
</table>

One caregiver wanted to have a heading called Help and support, which would include the type of help and support available in the region where the PWD lived.

Two out of three caregivers suggested that one or a couple of short film should be featured. Under the heading Living with dementia, there could be a short film (30-40 seconds) about someone showing that it is possible to live a good life with dementia. There could also be other short films with information about dementia.

Two of the three caregivers found the heading Planning your future healthcare problematic since it might remind the PWD about something that the PWD does not want to be reminded of.

---

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Task 12.1: Ask them: Where would you go to switch to your own account? Would you remember to switch it back to the person living with dementia or should there be a prompt?

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
</table>
| Where would you go switch account? | When adding a new reminder, it is not possible to add type of the reminder, it would be beneficial for carers to enable them to add health record info as they normally do on paper, basically well prepared in terms of content, for carers mostly used – photos, alerts, games. | --- | --- | 100% well done | One caregiver (33%): To Settings
One caregiver (33%): To a Logout button down to the right.
One caregiver (33%): To a button on same place but bigger and marked Change user instead of just Change. |
| Do you need a prompt to return? | --- | --- | --- | Yes (80%); No (20%) | Yes (33%); No (67%) |
| Comments | --- | --- | --- | When the screen switch on to see photos of all users | One caregiver (33%) suggested to be automatically logged out (and logged in as PWD) |
13. Features:

Task 13.1: Ask them if there are any features that they feel are missing or that would substantially help.

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
</table>
| Comments:      | ---                                   | ---            | No comments| Videos in some sections| Two of the caregivers mentioned the possibility to listen to music through apps such as Spotify and YouTube as being an important feature. One feature suggested by a caregiver is a sort of diary to which the PWD can add notes and images, for example from the activities done during a certain day, so that the PWD will have an easier time to remember and speak of what he or she has been doing during a day. 
|                |                                       |                |            |             |             |
|                |                                       |                |            |             |             |

- One caregiver wished to have the possibility to add their own categories to the homepage. For example, if the PWD was interested in Horses there should be a possibility to add a category in the homepage called ‘Horses’ where he or she good gather all info about horses.

- One feature, suggested by a caregiver, is a sort of transmitter to put on for example your glasses or keys,
14. Share their health information:

Task 14.1: Ask them where would they and the user go to share their health information with others (so they can view remotely). Who should do it (the carer or the PLD)?

<table>
<thead>
<tr>
<th>Features missing</th>
<th>---</th>
<th>---</th>
<th>Any</th>
<th>---</th>
<th>---</th>
<th>---</th>
</tr>
</thead>
</table>

and an app on the tablet that would send a signal to the object which then would make a sound.

- One feature, suggested by a caregiver, is a GPS, that would inform the PWD where he or she is, and show a telephone number in case the PWD feels lost.

- One caregiver suggests the possibility to be able to communicate with the tablet by saying rather than writing down a reminder.

- One caregiver emphasized that the games included should be easy but not childish, for example Word feud and Words in a pic (Crosswords).

- My contacts was seen as an unnecessary feature by one caregiver, unless the tablet would have

<table>
<thead>
<tr>
<th>DATA COLLECTED</th>
<th>DEX Innovation Centre (Czech Republic)</th>
<th>UCLL (Belgium)</th>
<th>CST (Spain)</th>
<th>SAS (Spain)</th>
<th>BTH (Sweden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where would they go?</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>100% well done for caregivers</td>
<td>Menu/Settings/Share Health Information</td>
</tr>
</tbody>
</table>

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6.3 HEALTH PROFESSIONALS:

1. Is there anything that is relevant for you and that is missing or that could be improved in this application?
2. Do you think that the current set of features could help you in your daily practice for a better patient care?
3. Which information would you like to know about the patients through the platform and how frequently?
4. Are the trackers the ones you need? Should we add more? If yes: which trackers do you suggest to delete/add?
5. Do you recommend additional local resources, such as information or games?
6. Are there any features you feel are missing or would substantially support your daily activity?
7. Do you have any suggestion for the interface? Do you think the distribution of the information is appropriate? Do you think that any key feature is on a second plane?

| Who should do it? | --- | --- | --- | 80% well done for patients | PWD (100%) |
| Comments | --- | --- | | | |

| Or | My Health/Track my health |

One caregiver questioned both the idea and the reliability of PWD rating his or her memory function and sharing it with others, since her experience is that PWDs memory function variates throughout the day and that it is a sensitive topic for them to share with others.
-alert on planned visit
  (include photo + position of
  the doctor)
- will that be easily
  understood? Not sure..
- include various different
  sounds for different types of
  alerts (mainly medicines
  versus other)
MEMORY GAMES:
- mainly pexeso, puzzles,
  created from family photos,
  with well known actors from
  the person childhood with
  additional CV etc,
HEALTH:
- problems with memory
  (divide into ability to
  communicate, ability to
  orientate and memory)
- functional problems (divide
to sense functions, mobility,
ability to take care of myself,
problems with toilet
-mood and feelings (include
  satisfaction and
dissatisfaction in general)
- mood and feelings (include
  sleep quality, will to eat and
  communication)
- mood and feelings (include
  how long it took)
- mood and feelings (include
  relationship with carer)
- monitor health (include test
carer burden for carer
account
- effect of used medicines
  (only leave for carer
  account)
- effect of used medicines will
  be seen mostly in mood
tracked as problematic to
find out – also describe and
translate in more patient

the app
looses its
focus by
offering so
many
features; they prefer
to have
one
feature, i.e. agenda
with
reminders. All other
features are should
be accessible
via other
apps installed on
the tablet, so not
within the
app of the
reminders. There can
be a restriction
on
installing
other apps themselves.

the app
looses its
focus by
offering so
many
features; they prefer
to have
one
feature, i.e. agenda
with
reminders. All other
features are should
be accessible
via other
apps installed on
the tablet, so not
within the
app of the
reminders. There can
be a restriction
on
installing
other apps themselves.

- In my
  reminders, week view
  is difficult
to understand
- The
  information about
dementia
  is no
  attractive
  and so
  hard.
  Would be
  better if
  would be
  videos
- The start
  process is
  so long
- A lot of
  features
  are
  incomplete
  then is
difficult to
know what
  can
  improve
- To fill my
  health
  record
  with the
  Health
  record of
  Health
  system, to
  provide to
caregiver a
  sheet with
  the data
  and to
  permit that
  the health

One health
  professional
  said the text
  in the app
  needs to be
  simplified
  and
  clarified. One
  example she
gave was
the term
‘dementia’. She
questioned
whether we
(the
  designers)
were certain
that
everyone
knows/
remembers/
want to
remember
that they
have the
disease
dementia. Not all
persons will
identify with
the word,
she said. An
alternative
proposed by
the health
  professional
  was
"memory
loss". In the
same way,
she said, the
<table>
<thead>
<tr>
<th>Understandable simple language</th>
</tr>
</thead>
<tbody>
<tr>
<td>- include behaviour disorders</td>
</tr>
<tr>
<td>- planned visits (add photo and position of doctor here as well)</td>
</tr>
<tr>
<td>- list of medicals (add information on usage of the medicine in the list, photo of the medicine, for what it is used)</td>
</tr>
<tr>
<td>- health record-health problem (duplication of monitor your health now)</td>
</tr>
<tr>
<td>- graphs (make even for carers to doctors, include taking medication time to health problem appeared)</td>
</tr>
<tr>
<td>- doctors (include opening time)</td>
</tr>
<tr>
<td>- include monitoring pain (1-10)</td>
</tr>
<tr>
<td>- effect of medicines (monitor mainly adverse events)</td>
</tr>
<tr>
<td>- it would be great to know how much time it took from taking medicine to appearing of some adverse event or health problem</td>
</tr>
<tr>
<td>- include possibility to input information about the patient individually and secretly by carer via his account to the doctor</td>
</tr>
</tbody>
</table>

**NEWS:**
- include link to other memory games etc.

**ABOUT DEMENTIA:**
- include various recommendations on what the person should do in order to feel well and also include information for

- professional
  - have access to update the information
  - More comfortable interface with an avatar for example, that explain what I’m doing.
  - If possible to use voice recognition, like Siri?

- ‘caring’ may be foreign.

- One health professional wondered what would be under the headline "news" and who was expected to update the news.

- One health professional said people with dementias have harder and harder to understand abstract concepts. He found that “home button” might be too abstract, and that it would be better to call it “Start” or something similar.

- One health professional found it important to have an analog watch and a digital 24h watch together.

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carers what to care for and monitor
-activities for carer leave
only for carer under his account under password or own login
-too much general information, include more practical information that are usable for them – e.g. get these from Alzheimer society

---

**Question 2**

<table>
<thead>
<tr>
<th>67% Y 33% N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments:</td>
</tr>
<tr>
<td>-if added some extra health problems and providing supporting information for doctors as stated below</td>
</tr>
<tr>
<td>-too complex for patients, too time consuming for carers who don’t have much time, sceptical towards the</td>
</tr>
<tr>
<td>50% Y</td>
</tr>
<tr>
<td>50% N</td>
</tr>
<tr>
<td>As it is designed now, it’s much too complicated and not user-</td>
</tr>
<tr>
<td>100% Y</td>
</tr>
<tr>
<td>33.3% Y</td>
</tr>
<tr>
<td>66.6%</td>
</tr>
<tr>
<td>Don’t know</td>
</tr>
<tr>
<td>Comments:</td>
</tr>
<tr>
<td>With the prototype is difficult to know it</td>
</tr>
<tr>
<td>100% Y</td>
</tr>
<tr>
<td>Comments:</td>
</tr>
<tr>
<td>One health professional said that seniors generally are positive, inquisitive and believe</td>
</tr>
</tbody>
</table>

- One health professional said that some pages are missing a 'Return' button.
- One health professional said that in Information about dementia, the knowledge of how costly dementia is for the society might not be that uplifting and increase the quality of life for a person with dementia, and questioned whether it is necessary to include that information in the app.
usage of this by both groups, suggests to test first on the group of senior healthy people as if they don’t accept this and are able to orientate themselves in the app, dementia patients will have problems. 
- there are too much things to input, difficult for patients, too much time for carers. 

- digital devices have many useful features.

<table>
<thead>
<tr>
<th>Question 3</th>
<th>Information: how frequently the person did some brain game; how the mood is changing; carer burden scale; graphs; inputted health problems; medication taken or not; when they go to other doctors for a visit; problems they had in the meantime; relationship to carer (continuous knowledge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency:</td>
<td>just shortly before or during visit, or any time upon request by link access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information:</th>
<th>Frequency:</th>
<th>No answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing of health/medical information is difficult in Belgium for privacy reasons. It would be interesting though to have information on/monitor the mood of patients and carers from a distance. This way, more directed actions could take place and can be easily checked when the nurse at</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reminders, appointments, medication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reminders, appointments, medication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health: why</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reminders, appointments, medication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health: why</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Record -Record</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health not taken medication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health trackers, medication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency average:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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| Question | 100% Y | Comments: orientation (day, place, person, other person, situation), pain, adverse events from medicine taking, mood (quality of sleep, will to eat, communication), behaviours disorders | 100% Y but... | Comments: - Due to anosognosia, they may have problems to complete - Functionality problems may not understand - Effectiveness of the medicine may not understand - Add more: 50% Y 50% N - Physical problems: difficult (as persons with dementia that are still aware of their) - Physical problems - Behavioural problems (for example: delusions, ... - Treatment side-effects - Nutritional status - Antropometric measures - Blood pressure - Any other condition that would be convenient, e.g. dysnea for COPD patients | 100% Y | Add more: 66.6% Yes 33.3% No | Comments: - One health professional found it better to call it ‘Practical problems’ rather than ‘Functional problems’, since ‘functional’ might be too abstract for people with dementias. - One health professional wondered whether there already might be too many subcategories considering the app is for people | 33% Y 67% N | Comments: |
memory problems, feel sad when filling this in, and those that don’t remember don’t know what this is about (and will give biased data) or will become angry. - !! turn the scales around: from good (high score) to bad (low score) - which trackers are related to physique? - why do they need to add date and time, can the system not record this automatically?

hallucinations, irritability - Change memory problems to cognitive problems

- One health professional wanted to add the category ‘language-related problems’, since for example losing words is common among people with dementias.

- One health professional found that Track my health had too much focus on problems and lacked a ‘salutogenic’ perspective.

- One health professional found, since medicine effect, was being measured, maybe there could be something about non-pharmacological social effects as well, i.e. the effect of...
Question 5 67% Y 33% N  
Comments: www.hry.cz,  
www.cvicenipameti.cz,  
www.vzpominkovi.cz,  
www.poruchypameti.brainjogging.cz,  
www.mentem.cz,  
www.alzheimer.cz

| 100% N | 100% Y | 100% Y | 100% Y |
| As commented before, it would be much better to minimize the app to only reminders, and add all the other features to the tablet outside the app. | Comments: - Dementia associations - Social work, family assistance, civic centres (recreational) - Telephones of interest, for example, police - What if I get lost? - What if I can do if I fall? - Games Websites - Cognitive stimulation websites - Day hospitals - Neighbourhood association | Comments: - Games like “brain training” of Nintendo - Three games is so poor, it would be more possibilities to provide a variety that can adapt to different needs - Easy games for people with low educational level - GPS function | Comments: Absolutely positive

Other comments: - no resources are missing - let them read their own newspaper, not needed in the app
### Question 6

<table>
<thead>
<tr>
<th>100% N</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>-no important part of app is missing, however it is necessary to get good data for doctors including the suggested important information as above</td>
<td></td>
</tr>
<tr>
<td>-too much data to input, too time consuming for carers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>100% N</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>goal of the app is to monitor medication adherence, not improve the relationship with the PwD; to improve a relationship, more is needed such as information on the person's history, things they like to do, context of care, guidelines for carers and professionals to cope with difficult moments; the games and photo's etc do not substantially improve the care.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>25% Y</th>
<th>75% N</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare professional can receive information from the caregiver</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>66.6% Y</th>
<th>33.3% N</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A cognitive training program with different difficulty levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutritional status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intellectual activity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Workshops caregivers**

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### Question 7

- Interface with weekly reminders might be not easily understandable
- Too much information to input

<table>
<thead>
<tr>
<th>Description</th>
<th>Interface %</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each page should have a next and back button that also says the name of the page to go back to (or to get next); now only back and next are shown in words and PwD may get confused as what this means. Colour choices are they necessary? Aren’t there studies showing the best colour to use? Font size choice not necessary, only use the largest font size. Some symbols like the ‘house’ for home may not be understood.</td>
<td>66.6% N 33.3% Y</td>
<td>- One healthcare professional said that it is important the texts are in black letters on a light background when the target audience is people with possibly impaired eyesight. - One health professional found that the icons/symbols on the homepage needed to be more elucidated and visible. - One health professional wanted more different colors to be used in the Track my health menu.</td>
</tr>
<tr>
<td>No suggestion about the interface - Appropriate distribution of information 75%Y 25%N Any key feature is on a second plane 100% N Comments: Would an option of memory problems Separate physical health record to cognitive health record</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Information distribution: 100% Y Second plane: 100% N | - Less serious - Words and box bigger - Avatars that helps with actions |
GENERAL COMMENTS FROM PHASE TWO – ALL GROUPS

CZECH REPUBLIC – DEX

a) General Questions (refer to annex 2 to see the questions):

<table>
<thead>
<tr>
<th>ALL GROUPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
</tr>
<tr>
<td>Question 2</td>
</tr>
<tr>
<td>Question 3</td>
</tr>
<tr>
<td>Question 4</td>
</tr>
<tr>
<td>Question 5</td>
</tr>
<tr>
<td>Question 6</td>
</tr>
<tr>
<td>Question 7</td>
</tr>
</tbody>
</table>

b) Points for a general discussion (refer to annex 2 to see the points):

<table>
<thead>
<tr>
<th>ALL GROUPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point 1 Comments: Less clicks to find what needed, better translations and wording, alerts more simple, some content relevant only for carers, sometimes too much complicated and duplicated somewhere.</td>
</tr>
<tr>
<td>Point 2 Comments: ---</td>
</tr>
<tr>
<td>Point 3 Comments: Alerts overview and setting up, health record sub-offers.</td>
</tr>
<tr>
<td>Point 5 Comments: ---</td>
</tr>
</tbody>
</table>
a) General Questions (refer to annex 2 to see the questions):

<table>
<thead>
<tr>
<th>HEALTHCARE PROFESSIONALS</th>
<th>Question 1</th>
<th>100% N</th>
<th>Comments: as above; app already has too many features; PwD have to click too often; time should be analogue not digital (as a real clock) but question is whether it’s useful for PwD as they rarely have a good notion of time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 2</td>
<td>not answered</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Question 3</td>
<td>100% Separated</td>
<td></td>
<td>Comments: show them as two separate pictures, but next to each other in the same reminder, so that it is clear it’s about two different medications; other option is to show them separate and use two reminders at an interval of 5 or 10 minutes.</td>
</tr>
<tr>
<td>Question 4</td>
<td>50-50 (see comment)</td>
<td></td>
<td>Importance average: not answered clearly but seems 50-50 Comments: use colours for trackers, not numbers; is ok that they can check when they have time, but not really necessary to get alerts (might increase burden)</td>
</tr>
<tr>
<td>Question 5</td>
<td>100% N</td>
<td></td>
<td>Importance average: 0% not important; will add only more complexity</td>
</tr>
<tr>
<td>Question 6</td>
<td>100% N</td>
<td></td>
<td>Importance average: 0% use only largest font size (no choice)</td>
</tr>
<tr>
<td>Question 7</td>
<td>question not asked</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

b) Points for a general discussion (refer to annex 2 to see the points):

<table>
<thead>
<tr>
<th>HEALTHCARE PROFESSIONALS</th>
<th>Point 1</th>
<th>Comments:</th>
<th>Less clicks, limit to reminders on medication only, all the rest outside the app</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point 2</td>
<td>Comments:</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Point 3</td>
<td>Comments:</td>
<td>Alerts overview and setting up, health record sub-offers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Worst: -Patients: alerts setting, health record detailed information, too much information required somewhere. -Carers: alerts, health record details. -Healthcare professionals: too complicated for patients, too much information to orientate, some information for them missing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point 5</td>
<td>Comments:</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>
Question about the size of the tablet: is it ok, needs to be smaller or larger? Which influence would it have on the use?

**ANSWER:** size of the 8-inch screen is sufficient; size and type of the font are most important and can be large even with a smaller screen than 10-inch. Limit the amount of information on one screen to a minimum, now it has too much information. To conclude: less features, keep it simple (e.g. icons for changing the profile at the top are not necessary; can create confusion and can be changed via the settings in the menu).

**Other comments:**

- *Give the name of the other person* at setup is confusing for PwD.
- Taking a picture of the other person should be clearly stated where they need to click (for example: click here).
- A picture of the PwD: they often don’t recognize their own mirror image, so taking a picture of themselves means they may not recognize themselves anymore; should be possible to add a picture taken years ago that they can identify themselves with.
- Sounds for reminders: should not be a choice: should always go on until they turn it off.
- When clicking the reminder for a medication, you get another few options that you need to choose. This is too difficult; when the medication is taken, nothing should happen; when it’s not taken, the reminder should automatically return in 5-10 minutes, and should not be a choice. For safety: limit the reminder to x-times (for example 2 times).
- Sharing medical data: when at the setup you give permission, this should be done automatically, no need to ask again and again.
- Trackers: should better pop-up from time to time, so that they don’t have to click it themselves.
- Reminders should be possible to get shortly before the appointment (and not only one day in advance).
- Showing of the agenda is too much information on one page; showing day schedule is better than week schedule but use an analogue clock not digital
- List with appointments in health record is confusing, as it is separate from the agenda.
- Don’t forget the reminder for charging the tablet. Should be already in the system, not needed to be added by the carer.
- Who knows the e-mail address of his/her GP? Little elderly persons know this (we also do not know this); furthermore: if sharing is not possible, why is this needed?
- Too many data to add or choices to make for example for entering a reminder.
- Home button was used to go back to the start screen, but PwD do not know this.
- A lot of non-verbal signs (e.g. frowning, sighing) during the FG with professionals shows that they found it difficult to use!
### PEOPLE LIVING WITH DEMENTIA

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>100% N</td>
<td></td>
</tr>
<tr>
<td>Question 2</td>
<td>100% N</td>
<td></td>
</tr>
<tr>
<td>Question 3</td>
<td>40% Separated/60% Together</td>
<td>Better separated</td>
</tr>
<tr>
<td>Question 4</td>
<td>100% Y</td>
<td>Importance average: 4 (important)</td>
</tr>
<tr>
<td>Question 5</td>
<td>100% Y</td>
<td>Importance average: 4 (important)</td>
</tr>
<tr>
<td>Question 6</td>
<td>% Y/N</td>
<td>Importance average: ---</td>
</tr>
<tr>
<td>Question 7</td>
<td>% Y/N</td>
<td>Importance average: ---</td>
</tr>
</tbody>
</table>

### CAREGIVERS

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>100% N</td>
<td></td>
</tr>
<tr>
<td>Question 2</td>
<td>100% N</td>
<td></td>
</tr>
<tr>
<td>Question 3</td>
<td>80% Together/20% Separated</td>
<td>---</td>
</tr>
<tr>
<td>Question 4</td>
<td>80% Y/20% N</td>
<td>Importance average: 4.5</td>
</tr>
<tr>
<td>Question 5</td>
<td>100% Y</td>
<td>Importance average: 4.5</td>
</tr>
<tr>
<td>Question 6</td>
<td>% Y/N</td>
<td>Importance average: ---</td>
</tr>
<tr>
<td>Question 7</td>
<td>% Y/N</td>
<td>Importance average: ---</td>
</tr>
</tbody>
</table>

### HEALTH PROFESSIONALS

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>25% Y/75% N</td>
<td>Be connected to a chip (location)</td>
</tr>
<tr>
<td>Question 2</td>
<td>75% Y/25% N</td>
<td>Download app appropriate for each user. The location would be very useful for the family. Games have points, goals</td>
</tr>
<tr>
<td>Question 3</td>
<td>25% Separated/75% Together</td>
<td>Together to simplify information. Registration if you have taken the medication separately. Two photos that appear in the reminder</td>
</tr>
<tr>
<td>Question 4</td>
<td>100% Y</td>
<td>Importance average: 5</td>
</tr>
<tr>
<td>Question 5</td>
<td>100% Y</td>
<td>Importance average: 5</td>
</tr>
<tr>
<td>Question 6</td>
<td>Not asked</td>
<td>Importance average: ---</td>
</tr>
<tr>
<td>Question 7</td>
<td>Not asked</td>
<td>Importance average: ---</td>
</tr>
</tbody>
</table>
b) Points for a general discussion (refer to annex 2 to see the points):

### PEOPLE LIVING WITH DEMENTIA

<table>
<thead>
<tr>
<th>Point 1</th>
<th>Comments</th>
<th>Nothing, it’s all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point 2</td>
<td>Comments</td>
<td>Memory games (60%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>About dementia (20%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>People (20%)</td>
</tr>
<tr>
<td>Point 3</td>
<td>Comments</td>
<td>My health record</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nothing</td>
</tr>
</tbody>
</table>

#### Best:
- My reminders (100%)
- My health record (60%)
- Memory games (40%)
- People (40%)
- About dementia (40%)
- News and resources (20%)

#### Worst:
- News and resources (80%)
- About dementia (60%)
- People (60%)
- Memory games (60%)
- My health record (40%)

### CAREGIVERS

<table>
<thead>
<tr>
<th>Point 1</th>
<th>Comments</th>
<th>Nothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point 2</td>
<td>Comments</td>
<td>Any</td>
</tr>
<tr>
<td>Point 3</td>
<td>Comments</td>
<td>Nowhere was a hardest part. I found it difficult because I’ve never used</td>
</tr>
</tbody>
</table>

#### Best:
- My reminders (100%)
- Games (80%)
- My health record (60%)
- About dementia (20%)
- News and resources (20%)
- People (20%)

#### Worst:
- People (80%)
- News and resources (80%)
- About dementia (80%)
- My health record (40%)
- Games (20%)

### HEALTH PROFESSIONALS

<table>
<thead>
<tr>
<th>Point 1</th>
<th>Comments</th>
<th>Include user manual (paper)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Less words, more graphic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In my reminders, add reminders have option to select whether it is an appointment or medication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Put more icons instead of letter, illustration, medication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Point 2</th>
<th>Comments</th>
<th>Reminders are already motivators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>The localization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Games</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medication changes could be automatically</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Point 3</th>
<th>Comments</th>
<th>About dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>My reminders: format</td>
</tr>
</tbody>
</table>
c) Other comments:

**Healthcare professionals**

- Smaller Tablets than 10 for greater use away from home
- Information about dementia should be more graphic
- What happen to those patients who use pillbox? It is widely used

**Caregivers**

- For my husband would be difficult to use the application (comprehension problems)

**SPAIN – SAS**

a) General Questions (refer to annex 2 to see the questions):

<table>
<thead>
<tr>
<th>PEOPLE LIVING WITH DEMENTIA</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1</strong></td>
<td>80% Y / 20% N</td>
<td>Comments: Radio; That it talks me when I push the button because I don’t read well and I’m so slow reading; Videos</td>
<td></td>
</tr>
<tr>
<td><strong>Question 2</strong></td>
<td>80% Y / 20% N</td>
<td>Comments: ---</td>
<td></td>
</tr>
<tr>
<td><strong>Question 3</strong></td>
<td>100% Together</td>
<td>Comments: Like in the pillbox</td>
<td></td>
</tr>
<tr>
<td><strong>Question 4</strong></td>
<td>100% Y</td>
<td>Importance average: 4 (important)</td>
<td></td>
</tr>
<tr>
<td><strong>Question 5</strong></td>
<td>60% Y / 40% N</td>
<td>Importance average: 4 (important)</td>
<td></td>
</tr>
<tr>
<td><strong>Question 6</strong></td>
<td>100% Y (100% need help)</td>
<td>Importance average: ---</td>
<td></td>
</tr>
<tr>
<td><strong>Question 7</strong></td>
<td>100% Y</td>
<td>Importance average: 5 Comments: In this way will be more easy for my soon; It sound well</td>
<td></td>
</tr>
</tbody>
</table>

CAREGIVERS

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1</strong></td>
<td>80% Y / 20% N</td>
<td>Comments: voice; videos</td>
</tr>
<tr>
<td><strong>Question 2</strong></td>
<td>80% Y / 20% N</td>
<td>Comments: ---</td>
</tr>
<tr>
<td><strong>Question 3</strong></td>
<td>100% Together</td>
<td>Comments: It could be more easy for him; It could be less messy</td>
</tr>
<tr>
<td><strong>Question 4</strong></td>
<td>100% Y</td>
<td>Importance average: 4.5</td>
</tr>
</tbody>
</table>
b) Points for a general discussion (refer to annex 2 to see the points):

<table>
<thead>
<tr>
<th>Question</th>
<th>Y/N</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 5</td>
<td>60% Y / 40% N</td>
<td>Importance average: 4</td>
</tr>
<tr>
<td>Question 6</td>
<td>100% Y (20% need help)</td>
<td>Importance average: ---</td>
</tr>
<tr>
<td>Question 7</td>
<td>100% Y</td>
<td>Comments: It can help me a lot; It could be more useful overall when the treatment change and the doctor can load in the APP</td>
</tr>
</tbody>
</table>

**HEALTH PROFESSIONALS**

| Question 1 | 100% Y | Comments: Less serious; Words and boxes bigger; Avatars; Voice to help the patient; Easy setting |
| Question 2 | ---% Y/N | Comments: Training programs; Videoconference with family, friends or health professionals |
| Question 3 | 100%Together | Comments: Together to simplify information. Two photos that appear in the reminder |
| Question 4 | 100% Y | Importance average: 5 It would be interesting to register if the caregiver performs some action to solve the problem |
| Question 5 | 100% Y | Importance average: 5 |
| Question 6 | Not asked | Importance average: --- |
| Question 7 | Not asked | Importance average: --- |

**PEOPLE LIVING WITH DEMENTIA**

| Point 1 | Comments: Voice; An explanation before use |
| Point 2 | Comments: Reminders (60%) I don’t know (40%) |
| Point 3 | Comments: To start; Lecture; To know where the things are |
| Point 4 | Best: My reminders (100%) My health record (60%) People (40%) News and resources (20%) Worst: To find change user |

**CAREGIVERS**

| Point 1 | Comments: A lot of lecture Colour in medicines or appointment the same in the different screens Voice |
| Point 2 | Comments: My health records Share with the doctor |
| Point 3 | Comments: To start |
I found it difficult because I've never used

<table>
<thead>
<tr>
<th>Point 4</th>
<th>Best:</th>
<th>Worst:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>My reminders (100%)</td>
<td>About dementia (80%)</td>
</tr>
<tr>
<td></td>
<td>My health record (60%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shere with doctor (80%)</td>
<td></td>
</tr>
</tbody>
</table>

**HEALTH PROFESSIONALS**

<table>
<thead>
<tr>
<th>Point 1</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Include user manual (paper); Less words, more graphic; Less serious; Words and boxes bigger; Avatars; Voice to help the patient; Easy setting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Point 2</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reminders are already motivators; The localization; Training programs; Videoconference with family, friends or health professionals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Point 3</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>My reminders: format</td>
</tr>
<tr>
<td></td>
<td>My health record: many windows within the section</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Point 4</th>
<th>Best:</th>
<th>Worst:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Easy interface (33.3%)</td>
<td>About dementia (66.6%)</td>
</tr>
<tr>
<td></td>
<td>Health records (66.6%)</td>
<td>Setting (33.3%)</td>
</tr>
<tr>
<td></td>
<td>Reminders (66.6%)</td>
<td>Appointments (33.3%)</td>
</tr>
<tr>
<td></td>
<td>Games (33.3%)</td>
<td>News and resources (33.3%)</td>
</tr>
<tr>
<td></td>
<td>None (33.3%)</td>
<td></td>
</tr>
</tbody>
</table>

**SWEDEN – BTH**

c) General Questions (refer to annex 2 to see the questions):

<table>
<thead>
<tr>
<th>ALL GROUPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
</tr>
<tr>
<td>Question 2</td>
</tr>
<tr>
<td>Question 3</td>
</tr>
<tr>
<td>Question 4</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
d) Points for a general discussion (refer to annex 2 to see the points):

<table>
<thead>
<tr>
<th>Point 1</th>
<th>Comments:</th>
<th>See other comments</th>
</tr>
</thead>
</table>
| Point 2 | Comments: | - That the tablet and the app would be for free  
- That tablet is covered by an insurance in case it brakes.  
- That the reminders and messages are highly visible, and responds quickly. |
| Point 3 | Comments: | - To change user  
- To add a reminder, for example medicine and appointment reminder. |
| Point 4 | Best: | - My Reminders  
- Homepage  
- Info about Dementia |
|         | Worst: | - To add a medicine reminder  
- To add an appointment  
- To change user |
| Point 5 | Comments: | - Two out of five thought 7” tablet would be too small to use.  
- One health professional thought 7” tablet had more advantages than 10” overall. |

e) Other comments:

**People with Dementia**

- Four out of six patients (67%) were in need of continuous encouragement and support from caregivers during navigation.
- Many patients found it a good idea to have some kind of emergency line, i.e. a telephone number to for example a close relative, on the front page (homepage) so that one could easily get in touch with that person if something happened.
- Many patients wished to be able to use the tablet and the app as a sort of diary, i.e. a tool to use to be able to remember things for oneself + be able to tell others about the experiences one has had. One idea that was brought up in the focus group was to have a reminder that would pop up during an activity and remind you of photographing what was happening.
- Many patients said they were in need of a tool that made it easier for them to organize their lives; a tool that they could use instead of today's system of writing notes on different pieces of papers that easily got lost, a tool where they could gather important information and links...
to sites that interested them; a tool that would help them to remember where they had put their keys or glasses and tell them whether they had already brushed their teeth or not.

- One patient wished to have a printed instruction where the basic functions of the app were explained.
- One patient found the keys on the keyboard that shows up on the screen to be too small and lacking clear borders between the keys.

Caregivers:

- All caregivers found it very useful to be able to individually decide which categories to include in the homepage.
- One caregiver was very sceptical towards the colours used in the app. She found the green colours too similar in nuances. She lacked the red and yellow combination that she stated has been proven the best colours to use for persons with Alzheimer’s disease. She was also very sceptical towards using purple, since she stated that it has been proven that it is the worst colour to use for persons with Alzheimer’s disease.

Terms and translations:

- The Swedish translation of Appointment (“Utnämning”) in the My Reminders menu was found hard to understand by some patients.
- The Swedish translation of Change view (“Byt läge”) in the My Reminders menu was found hard to understand by some patients.
- The Swedish translation of Change (user) (“Ändra”) in the My Reminders menu was found hard understand by some patients.
- The Swedish translations “Ingen” and “Stark” in My Health/Check my health/Memory function was criticized by one patient who would have preferred “Mindre” and “Större” respectively.
- One caregiver thought Memory games be replaced by simply Games.
- One caregiver thought About Dementia (“Om demens”) should be replaced by About Dementias (“Om demenssjukdomar”).
- The Swedish translation of Appointments (“Möten”) as in Doctor’s appointments ought to be replaced by “besök”, according to one caregiver.
- The Swedish translation of another (“ytterligare”) in the My Reminders menu was found harder to understand by one caregiver. Instead she suggested “flera” to be used.
FINDINGS AND RECOMMENDATIONS FROM PHASE TWO

The following section provide a general overview of the most important findings from this user-centred stage focused on interaction and functionalities for the SMART4MD application, as well as the most relevant results of the usability assessment.

As an example of the deep analysis of findings and decisions taken about future actions that should be taken into account in the final version of the app, we have attached the analysis of the information on trackers from all the countries and focus groups / interviews in Annex 3 of this document.

USABILITY FINDINGS

We had a total sample of 21 PwD completing the second round of Focus Groups. Some tasks were not possible to test by all partners due to limitations of the prototype and some technical problems. The following sections summarise the most relevant findings from the usability analysis of the prototype, in terms of task completion and mood changes during the performance of the task.

Task Completion Success Rate:

We had two relevant sections in which we were more interested to assess completion success, due to their importance for PwD independence, and the complexity related with the combination of different functionalities. This sections were: Manage Reminders and Manage Health.

Almost all participants (90%) successfully completed Task 2.1 (set a reminder) while the 62% needed help to complete it. Some comments suggested that patients got lost within the already created reminders and did not find a way to set up a new reminder without proper help. Also, problems with the menu configuration, the position of the "add reminder" button, and the amount of information to request and select from.

Regarding the "Manage Health" section, 70% of the participants complete Task 5.1 (set a health tracker- 67% needed help), all participants successfully completed Task 5.2 (check "my health record") with a "need help" rate of 48%, and finally 86% of the participants completed Task 5.3 (set an appointment) but most of them needed help to successfully complete it (76%). Participants' comments suggest that participants get lost within the menu options and struggled to understand the differences between the three categories under "My Health" section.

Mood Changes:

The following table summarise the values collected during the Focus Group related to mood changes raised during the completion of each task. Based on researcher interpretation the measure scale was: 1-5 (1 is a decrees in the users mood, 3 is the same and 5 is an improvement of mood).

Data gathered shows that in general PwD do not experiments relevant changes in mood due to frustration, stress, etc. during the completion of task. Only changes were found during tasks related to set reminders or mark a reminders as done, as well as during the tasks related to the management of health under "My health" section.
PEOPLE LIVING WITH DEMENTIA

- **Labels:** patients found it hard to read the texts with the smallest font size.
  - Font size to set the date and time for a reminder too small.
- **Colours:**
  - Background colours (especially the green/turquoise) in the menu made it hard to read the text.
  - Same colour for medicines or appointment in all screens.
  - Green colours too similar in nuances. The red and yellow combination has been proven the best colours to use for persons with Alzheimer’s disease.
  - Using purple, since it has been proven that it is the worst colour to use for persons with Alzheimer’s disease.
- **My Reminders** menu in the week mode "messy", with too many squares too close to each other. They found the one-day-mode much easier to understand and get an overview of.
- **At the My Reminders** section there was too much information to request and select from, too complicated for the user.
- **Missing a Return button.** The option of go back is not present in all pages.
- **Set a reminder reminded for a day before notification (e.g. for appointments)**
- **To know I take my medicine:** the button could change the colour (red = not taken; green = taken)
- **Patients struggled more with adding an album than adding a person** even though all patients needed some support to complete all tasks.
- **Patients struggled to know where to click to fill in the text when adding an album or a contact.**
- **Patients had difficulties to see the Take a photo button.**
- **Patients struggled to understand the differences between the three different categories under My Health.**
- **One out of three patients was disturbed by the circles and numbers used when grading their Memory capacity, and would have preferred a straight line instead.**
- **Headers:**
One patient suggested the following headers instead: Facts/Info about dementia; Living a good life with dementia; from where can I get help and support/who can I turn to? (Instead of External help & Resources).

- Patients thought Games a better name than Memory Games.

- Games available would train memory and be able to adjust to people’s cognitive capacity.
- Change User: to small and difficult to read.
- Interface:
  - Keys on the keyboard that shows up on the screen to be too small and lacking clear borders between the keys.
  - Problems with scroll down.

### CAREGIVERS

- More options when it comes to setting the time and date for an Appointment reminder, for example: 1-5 h before, 1-2 days before, etc.
- Set several alarms to one activity, for example one alarm that goes off the day before and one alarm that goes off an hour before the activity starts.
- Set all appointments (both healthcare-related appointments and other kinds of appointments) under the category *My Reminders*.
- Change user:
  - Automatically logged out (and logged in as PWD) after 10 min of inactivity.
- Notifications:
  - Possibility to listen to the different types of alarm sounds before making their choice.
  - Alarm to ring for 5-10 seconds and then automatically be turned off, but ring again after some time unless the person has pressed "Done".
- Caregivers intuitively clicked on *Add a reminder* instead of *My Health* in order to add a medicine.
- More options when it comes to setting the time and date for a *Medicine reminder* for example: every second day, once a week, or a specific date.
- Same color for medicines or appointment in all screens.
- *My Health Record*: not too many clicks.
- *Add an Appointment*: can’t add a reminder for the new appointment.
- New Categories:
  - Help and Support, which would include the type of help and support available in the region where the PWD lived.
  - Diary to which the PWD can add notes and images.
  - For the new doctor appointment, it would be great to have there also type of doctor (e.g. GP, geriatrist, yes doctor, etc.)
  - Add type of reminder when adding a new reminder.
- Interface:
HEALTHCARE PROFESSIONALS

- Medicines that are taken at the same time should be pictured together.
- Trackers:
  - It would be interesting to register if the caregiver performs some action to solve the problem.
  - Due to anosognosia, they may have problems to complete; Functionality problems may not understand; Effectiveness of the medicine may not understand.
  - Don’t use numbers for the scale, use visuals with colours (e.g. green is happy, red is sad)
- Healthcare Professionals suggested to add some trackers:
  - Physical problems; Behavioural problems (for example: delusions, hallucinations, irritability; Change memory problems to cognitive problems; Treatment side-effects; Nutritional status; Antropometric measures; Blood pressure; Any other condition that would be convenient, e.g. dysnea for COPD patient; language-related problems.
  - Problems with memory (divide into ability to communicate, ability to orientate and memory); Functional problems (divide to sense functions, mobility, ability to take care of myself, problems with toilet; Mood and feelings (include satisfaction and dissatisfaction in general); Mood and feelings (include sleep quality, will to eat and communication); Mood and feelings (include how long it took); Mood and feelings (include relationship with carer);
  - Monitor health (include test carer burden for carer account)
- About Dementia section:
  - Include various recommendations on what the person should do in order to feel well and also include information for carers what to care for and monitor.
  - Too much general information, include more practical information that are usable for them – e.g. get these from Alzheimer society.
  - Information about dementia should be more graphic.
- Frequency of notifications:
  - Sharing of health/medical information is difficult in Belgium for privacy reasons.

---

1 Please note that the final version of this section (“About dementia”) was not shared with participants. Participants only saw the headings of the sections that will be included in the final version. The final version of this section includes links to relevant national / local information.

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TERMS AND TRANSLATIONS FROM PHASE TWO

1. **Swedish:**
   - The Swedish translation of Appointment ("Utnämning") in the My Reminders menu was found hard to understand by some patients.
   - The Swedish translation of Change view ("Byt läge") in the My Reminders menu was found hard to understand by some patients.
   - The Swedish translation of Change (user) ("Ändra") in the My Reminders menu was found hard understand by some patients.
   - The Swedish translations "Ingen" and "Stark" in My Health/Check my health/Memory function was criticized by one patient who would have preferred "Mindre" and "Större" respectively.
   - One caregiver thought Memory games be replaced by simply Games.
   - One caregiver thought About Dementia ("Om demens") should be replaced by About Dementias ("Om demenssjukdomar").
   - The Swedish translation of Appointments ("Möten") as in Doctor’s appointments ought to be replaced by "besök", according to one caregiver.
   - The Swedish translation of another ("ytterligare") in the My Reminders menu was found harder to understand by one caregiver. Instead she suggested "flera" to be used.

2. **Spanish:**
   - Change "mi registro" for "mi salud"
   - Change "mi registro" for "registrar mi salud"

3. **Dutch:**
   - Change "herinneringen" for "afspraken" (using the word "herinneringen" may cause persons with dementia to think that we mean their „memories“
   - hetinneringen’
CONCLUSIONS

To enable the project to move forward as early as possible, a two-phase approach was adopted for user centered design, using quantitative metrics, subjective metrics and a blend of ISO, Nielsen and Agile methodologies.

**Phase one - Functionality.** This phase identified user requirements and identified important motivational elements. Results revealed that even though the majority of people with dementia use only TV, radio and simple mobiles, they are willing to use tablets with the tailored SMART4MD application. However, the application needs to be straightforward to use with the option to be personalised. In order to motivate the user, the application does need to include not only the treatment functionalities and content (reminders, practical steps for improving their conditions) but also try to include other daily activities and other interesting content, such as memory games, photos, videos, calls with the family, etc. Both carers and healthcare professionals stated that this application would be very helpful for them in their activities with people with dementia, however, usage of the application and sharing possibilities with the healthcare professionals need to take into account their time constraints.

**Phase two - Usability.** This phase identified issues with the user interface. Although principles of building usable interfaces had been identified from prior research, these focus groups identified additional issues with the actual application. Some of the most important findings from this user-centred stage included for example: i) suggestions to change the colour schemes used (different shades of green-blue and purple made it difficult to read the associated text), ii) the need to decrease the number of ticks to complete a task, iii) the necessity of a large font size for all command buttons, menus, etc., iv) the suggestion to add a diary for the person with dementia with notes and images, v) suggestions for alternative word using and translation to local languages, vi) using sliders or smileys instead of numbers ranked 1 to 10 for the health trackers, and vii) adding back and next buttons for every screen/page. This will enable improving the customization tool and the usability of the application which will result in a better outcome for the feasibility testing in the next phase of the project.
ANNEX 1

Today’s Consultation about the Development of an Internet-based Health Management Tool for People with Memory problems and their Carers

About the consultation/discussion:

- The purpose of the consultation is to find out from you how to adapt an existing Internet-based health management tool to the specific needs of people with memory problems.
- The aim of the tool is to monitor the evolution of dementia and promote independent living as well as quality of life.
- The consultation will be an informal group discussion lasting not more than X hours.
- No payment will be made. Sorry ☹
- Refreshments will be provided.
- Toilets are located XXXXXXX.

About your participation in the discussion:

- The consultation will be conducted in a friendly and respectful manner.
- Please share your thoughts and ideas, even if different to those of other people.
- All contributions will be valued.
- There are no wrong answers.
- It is not necessary to be technically-minded or have experience using the Internet.

About confidentiality:

- Please do not repeat anything you hear in the group to anyone else afterwards.
- We might recording and taking notes but guarantee complete confidentiality.
- No real names will be used in our reports.
- We will only use the information we collect for the purpose of this study.

About freedom of choice:

- You are free to decide whether or not you would like to take part in this discussion.
- You are free to leave at any time without having to justify your decision.
- You are free to decide whether or not to respond to a particular question.

After the discussion:

- In a few weeks’ time, you will receive a summary of the findings.
- You will have the opportunity to read the summary and ask for anything you said to be deleted if you are not happy with it being included.
- Contact details of the local Alzheimer society will be provided in case you wish to discuss any issues which arose through your participation in this study.

Thank you very much for taking part in this consultation. Your help is greatly appreciated.
(For phase 1)

Discussion guide for moderators of the group consultation involving people with dementia and carers – SMART4MD

Start of the consultation and engagement question

Good evening and welcome to this consultation. Thank you for taking the time to join us. This consultation is part of a European study called SMART4MD. This is a study that has been funded by the EU, and xxxx EU countries are participating in this study.

The aim of SMART4MD is to adapt an existing Internet-based health management tool to the specific needs of people with dementia. This tool aims to help people with dementia to monitor their condition and to promote independent living and quality of life. The tool will be used by people with dementia themselves but also their relatives (or informal carers/trusted people) and healthcare professionals. We would like to know more about what people with dementia and carers might value from this type of tool. To participate in this consultation it is not necessary to be technically-minded or to have experience using the Internet. It is more a matter of finding out what you might want from such a system to ensure that we design something that is useful and that people will want to use (including those who are not yet familiar with such technology)

This will help the team working on the tool to support you with useful features such reminders to help you take your medication on time.

XXXXXX

We are having discussions like this with other groups in across Europe. (xxxx name countries). There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. We are interested in all ideas and suggestions. We might tape record the session because we don’t want to miss any of your comments. People often say very helpful things in these discussions and we can’t write fast enough to get them all down. We will be on a first name basis tonight, and we won’t use any names in our reports. You may be assured of complete confidentiality. The reports will be collected and put in a bigger report.

Well, let’s begin. Let’s find out some more about each other by going around the table. Tell us your name and to start the ball rolling, what type of technology do you use in your everyday life

Question 1

We will start now with the questions about the use of technology. The first question is in relation to your own personal experiences in using technology. How do you feel about using technology?

Prompts

- How confident do you feel about using technology?
- What motivates you to use technology? What helps you to use technology?
- What prevents you from using technology?

We would also like to know about the specific devices and applications that you may have used or that you know about.

Prompts

- What, if any, devices do you use?
- How often do you use these devices?
- If you have never used any devices, what has prevented you from using them?
- What sorts of applications/websites do you use and why?
- If you have never used any applications/websites: what type of application do you think would be more relevant to you? Is there any type of application that you think you would be more inclined to use?
Now, we would like each of you to write on these post-it notes the apps/websites that you have used the most frequently. You can write up to xxx examples. This is not a test so don’t worry about finding something to say or to write.

For those of you who have never used an application or website, please write on these other post-it notes (PROBABLY OF A DIFFERENT COLOUR???) the type of applications or websites that you think would be useful for you. (Or that you are more likely to use???)

We are now going to stick these post it notes onto these boards around the meeting room so that we can all see the different types of applications that the group is familiar with or would like to use.

Note for the moderator: each board can have notes for a different category, e.g. Shopping, News, Entertainment, Health, Diary/Reminders, etc.

Question 2

(For each of the categories that were mentioned by the group). We would now like to know about (name of the category, e.g. shopping)?

- Why is this important for you?
- How does the use of technology help you in xxx?
- What do you find most useful about the application/website?
- Is there anything that is relevant for you and that is missing or that could be improved in this application/website?

(For those who have no experience with apps/websites) If you were invited to use an application for (XXX name category) what would be important for you? How could the use of technology help you in this category?

Question 3

I would now like you to imagine a tool that you could access on XXXX and which could include the following features (XXXXXXX). A health platform is XXXXXXX

Pow Health is XXXXXX. The main features available on the platform are XXXXX.

I have listed on these boards all the features that so far are included in Pow Health. These features are based on our knowledge of what other patient groups have found useful,

(MODERATOR repeat these questions for each feature)

We would like to know how useful you think (XXX name feature) would be for you?

Do you think you would use it? Why / why not?

Question 3

To finalise the discussion, we would like to know about your opinion of a tool like the one we have discussed today and to what extent you think such a tool would be helpful to you?

Prompts

- Do you think you (yourself) would use a tool like the one we have discussed today?
- Do you think you would use a tool like the one we have discussed today for others?
- Why would you use this tool?
- What would prevent you from using this tool?
- Are there any additional features that you would like to have access to but which haven’t been mentioned?
(For phase 2)

Discussion guide for moderators of the group consultation involving people with dementia and carers – SMART4MD

Start of the consultation and engagement question

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This will help the team working on the tool to support you with useful features such reminders to help you take your medication on time.

We are having discussions like this with other groups in across Europe. (xxxx name countries). There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. We are interested in all ideas and suggestions. We might tape record the session because we don't want to miss any of your comments. People often say very helpful things in these discussions and we can't write fast enough to get them all down. We will be on a first name basis tonight, and we won't use any names in our reports. You may be assured of complete confidentiality. The reports will be collected and put in a bigger report.

Well, let's begin.

Tasks and Questions:

a) PEOPLE WITH DEMENTIA:

1. Application Launch:

Task 1.1: Enter to the application from the tablet home page. Is the text under the icon understandable?

Is there something that would make this task easier or better for you?

2. Manage Reminders:

Task 2.1: Set a reminder with the following parameters: < define common parameters such as: date, time, reminder text, reminder frequency >

Task 2.2: Mark a reminder as "remind me in 5 minutes" (set a reminder before in order to test alert management)

Task 2.3: Mark a reminder as "done"

Is there something that would make this task easier or better for you?

How do they get back to the start/home page at the end the task?

3. Reminder goes off for medication:

Task 3.1: Ask the user, if this was their application what would they do next? Confirm that the reminder is understood.

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Task 3.2: Confirm if they would switch it off before or after they take the medication. Confirm if they would use the snooze and then turn it off after the medication. What is the likelihood that they will take the medication?

Task 3.3: Discuss if the reminder and snooze should be reworded to make sure they take the medication.

Is there something that would make this task easier or better for you?

What would motivate you to take the medication instead of turning the reminder off without taking their medication?

4. Relation with People:

Task 4.1: Add an album

Task 4.2: Add a person (in family) and take a photo: <Ifty: Define common parameters such as: name, phone, etc.

Is there something that would make this task easier or better for you?

5. Manage Health:

Task 5.1: Set a health tracker.

Task 5.2: Check "my health record."

Task 5.3: Set an appointment.

Is there something that would make this task easier or better for you?

6. Entertainment and Get knowledge:

Task 6.1: Check the "About Dementia" section.

Task 6.2: Games - Are they easy to find? Would the links be used? Would you be less likely to use it if we remove the word memory?

Task 6.3: Change user. (Optional)

Is there something that would make this task easier or better for you?

b) CAREGIVERS:

7. Application Setup:

Task 7.1: First set up of the application. Ask users to complete the set up process asking for help only when needed.

Is there something that would make this task easier or better for you?

8. Manage Health:

Task 8.1: Add a medicine with the following parameters.

Task 8.2: Check "my health record"

Is there something that would make this task easier or better for you or for the person with dementia

9. Add appointments:

Task 9.1: Add an appointment with the following parameters.
Can users understand the Appointments reminder screen? (needs to be activated from Reminders section, select reminder)

Can users find the Week view and Day view useful? (can switch from Reminders page, view drop-down)

Is there something that would make this task easier or better for you or for the person with dementia?

10. Add a photo:

Task 10.1: Browse, find and upload a pre-loaded photo or take a photo.

Is there something that would make this task easier or better for you or for the person with dementia?

11. Information about dementia:

Task 11.1: Look at the topics. Ask them if there is any topic missing and if the topics already included meet their needs

Any topics missing and why?

12. Features Change user:

Task 12.1: Ask them:

Where would you go to switch to your own account?

Would you remember to switch it back to the person living with dementia or should there be a prompt?

13. Features:

Task 13.1: Ask them if there are any features that they feel are missing or that would substantially help.

14. Share their health information:

Task 14.1: Ask them where would they and the user go to share their health information with others (so they can view remotely). Who should do it (the carer or the PLD)?

c) Health professionals:

Questions about the solution:

1. Is there anything that is relevant for you and that is missing or that could be improved in this application?

2. Do you think that the current set of features could help you in your daily practice for a better patient care?

3. Which information would you like to know about the patients through the platform and how frequently?

4. Are the trackers the ones you need? Should we add more? If yes: which trackers do you suggest to delete/add?

5. Do you recommend additional local resources, such as information or games?

6. Are there any features you feel are missing or would substantially support your daily activity?

7. Do you have any suggestion for the interface? Do you think the distribution of the information is appropriate? Do you think that any key feature is on a second plane?

d) General Questions (for all groups - including people living with dementia):

Q1. Are there additional features that would make it significantly more useful for you?

Q2. Are there additional features that would make you significantly use it more (motivation)?

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Q3. Medicines that are taken at the same time - should they be pictured separate or together?

Q4. About the Trackers, they will be designed such that carers get alerts at a specific range. Our platform does not currently support this and it should be removed for the moment since extensive scoping is required. Is this important? If so, how much from 1 (not important) to 5 (very important)?

Q5. Integrate trackers with reminders so that the user can set the tracker from the reminder. (eg - check blood sugar adds it to tracker). Is this important? If so, how much from 1 (not important) to 5 (very important)? [Currently, we are limiting to trackers we have shown that relate to health problem. I thought we are not allowing users to add additional trackers?]

Q6. SETTINGS: Can users change font size settings once in the app (Settings can be reached from slide-out menu. NOTE – need to tap small home to get back to main app homescreen)

Q7. Need to ensure that we have agreement over the method by which medicines will be entered into the app during the induction process. It is currently envisaged that carers, alongside the healthcare professional, will add the medicines during the onboarding process. Does that sound sensible?

e) Points for a general discussion:

POINT 1: What could make it easier to use?
POINT 2: Which feature would make you use it more (motivation)?
POINT 3: When using the app, what was the hardest part?
POINT 4: Which were the best 3 functionalities you might use, which were the worst 3 problems you experienced today?
POINT 5: Other comments
ANNEX 3

Summary of main issues raised in the Focus Groups about trackers

1. It should be clearly stated who (i.e. person with dementia, carer or both) has completed the information about trackers.
   ACTION: it should be clearly stated that we expect the person with dementia to complete this section, the carer can support but it should be completed from the perspective of the person with dementia. Perhaps this should be emphasised in the guide and by the professionals when explaining the app to the person and carer.

2. The person with dementia may due to the symptoms of dementia not remember or acknowledge the issues that are asked in the trackers
   ACTION: this should not be a problem, we are collecting the “experience” of the person

3. Trackers may make people with dementia feel sad. There was a suggestion from another country to use a more positive approach (“salutogenic”).
   ACTION: to include a category about wellbeing. We need to be careful about how to phrase the trackers (e.g. to use neutral wording as much as possible).

4. Health professionals suggested to change memory problems to cognitive problems:
   ACTION: whilst cognition is a more comprehensive concept and hence perhaps better in terms of accuracy, we feel people with dementia will understand better “memory” than cognition, we suggest to keep memory.

5. It was suggested that “functioning” may be difficult to understand. Suggestions to change it by “practical”.
   ACTION: the word practical in English may be too vague, we suggest to change “functioning” by “daily activities” or “day-to-day activities”

6. Many questioned why “déjà vu” was there – obviously this was just an example and should not be in the app for dementia
   ACTION: remove

7. In terms of layout: it was suggested not to use numbers, also there were suggestions for changing the wording “severe to abstract”
   ACTION: score 1 – 5, use number and smiley faces

8. One health professional felt there were too many subcategories already, however, most countries have added a new categories (e.g. physical health, language orientated problems, social effects, etc.)
   ACTION: reduce number of categories to 3

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SUGGESTIONS FROM FOCUS GROUPS

Memory issues:
- Ability to communicate
- Ability to orientate (day, place, person, etc.)
- Memory

Functioning (change to ... Day to day activities)
- Sense functions (Not sure what that means)
- Mobility
- Ability to take care of myself
- Problems with toilet

Mood and feelings
- General satisfaction - dissatisfaction
- Will to eat
- Will to communicate
- How long it took (not sure what that means)
- Relationship with carers
- Behavioural disorders

NEW AREA: health (including social aspects)
- Pain
- Sleep quality
- Walking
- Socialising with others
- Playing music
- Carer burden test (in carers account)?

Medicine
- Adverse effects

Feedback and suggestions:

We could not find any feedback from people with dementia or carers in regards to the trackers.

Recommendations for trackers are mainly from health professionals.

We have the impression that some health professionals may have misunderstood what the purpose of the trackers are and that trackers will be completed by the person with dementia.
• Some of the recommendations are more a test than a tracker – for example orientation: day, place, person etc. Similarly it is suggested to include behavioural problems, like delusions, hallucinations, etc.
• Anthropometric measures, blood pressure, etc. are aspects that should be tracked by a doctor and quite unlikely the person can contribute to that.
• There was a suggestion to include the carers’ burden scale – not sure if this was something that we had planned.

Trackers should be easy to understand, primarily meaningful to the person and based on the person’s experience of each of them. Trackers will obviously also relevant to the health professionals but they should be primarily for the person with dementia.

Also there should be the opportunity for the person to add other trackers that may be relevant to him/her

SOME NEW SUGGESTIONS OF TRACKERS

1. Memory and daily activities:

On a scale of 1-5,

Did memory problems bother you today? (1 being a lot and 5 not at all)

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</table>

How have you managed finding your way around today? (1 being badly and 5 very well)

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</tr>
</tbody>
</table>
2. Health and wellbeing

How do you feel today? (1 being bad and 5 very good)

How have you managed talking to people today (e.g. finding words, keeping track of the conversation, etc.)? (1 being badly and 5 very well)

How do you feel about getting things done today (e.g. shopping, housework, cooking, etc.)? (1 being bad and 5 very good)

Have you experienced any pain today? (1 being a lot and 5 none)

Have you experienced any difficulties walking around your home today? (1 being a lot and 5 not at all)

How satisfied were you with what you have eaten today? (1 being not satisfied and 5 completely)
How do you feel about your relationship with people who matter to you today? (1 being not satisfied and 5 completely)

1                   2                3           4       5

3. Medication

How easy was it to take your medication today? (1 being very difficult and 5 very easy)

1                   2                3           4       5

Did you experience any side effects? (1 being several and 5 none)

YES                NO   I don’t know