

# **Novel ICT-based products and services in elderly care**

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# Content of presentation

- Company intro – general overview
- **Two main solutions:**
  - Inclusion Society – multiplatform, helping elderly people feel cared for and connected with closest persons in safe environment
  - eCare@Home – system of elderly people mental health care



# Introduction

- **SIA eCare Solutions:** a branch of Norwegian IT company, named Hospital Organiser
- Hospital Organiser: an innovative Norwegian software enterprise, established in 2003
- Main focus: development of **user friendly and functional software solutions** for the health sector
- Developed various software solutions within eHealth: mainstream within **municipal health sector** and special solutions targeting individual diagnoses
- Experience: leading of several European funded projects, development of advanced solutions and portfolio of ongoing research projects in the respective field



# Inclusion Society

Inclusion Society: **proactive preventative health care solutions**, giving to health care responsible parties (doctor, nurse) the opportunity to detect and address any downward trend in the elderly health before the acute healthcare necessity

Inclusion Society: older persons **security care at home**, enabling older persons live longer independent life in their natural environment

E-health sector is in early development stage in Latvia and other neighboring countries: eCare Solutions SIA brings Scandinavian experience to apply

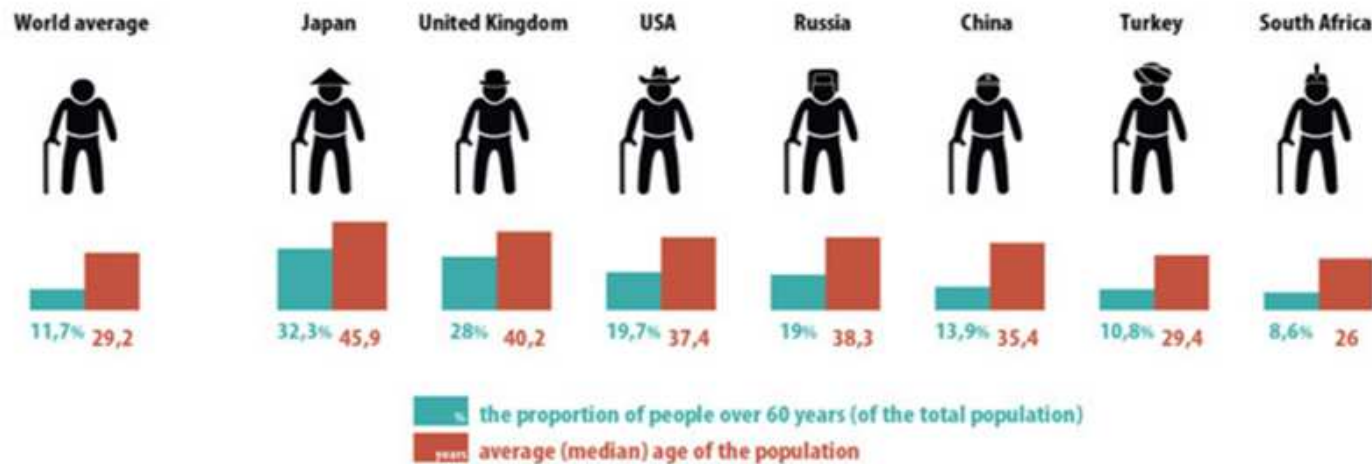


# Challenge statement

Steadily growing older part of population – important need of easy care services and solutions for persons to be treated at their natural environment in European countries

**Challenges:** financial, recourses, approach

## Aging planet



UN Department of Economic and Social Affairs Data

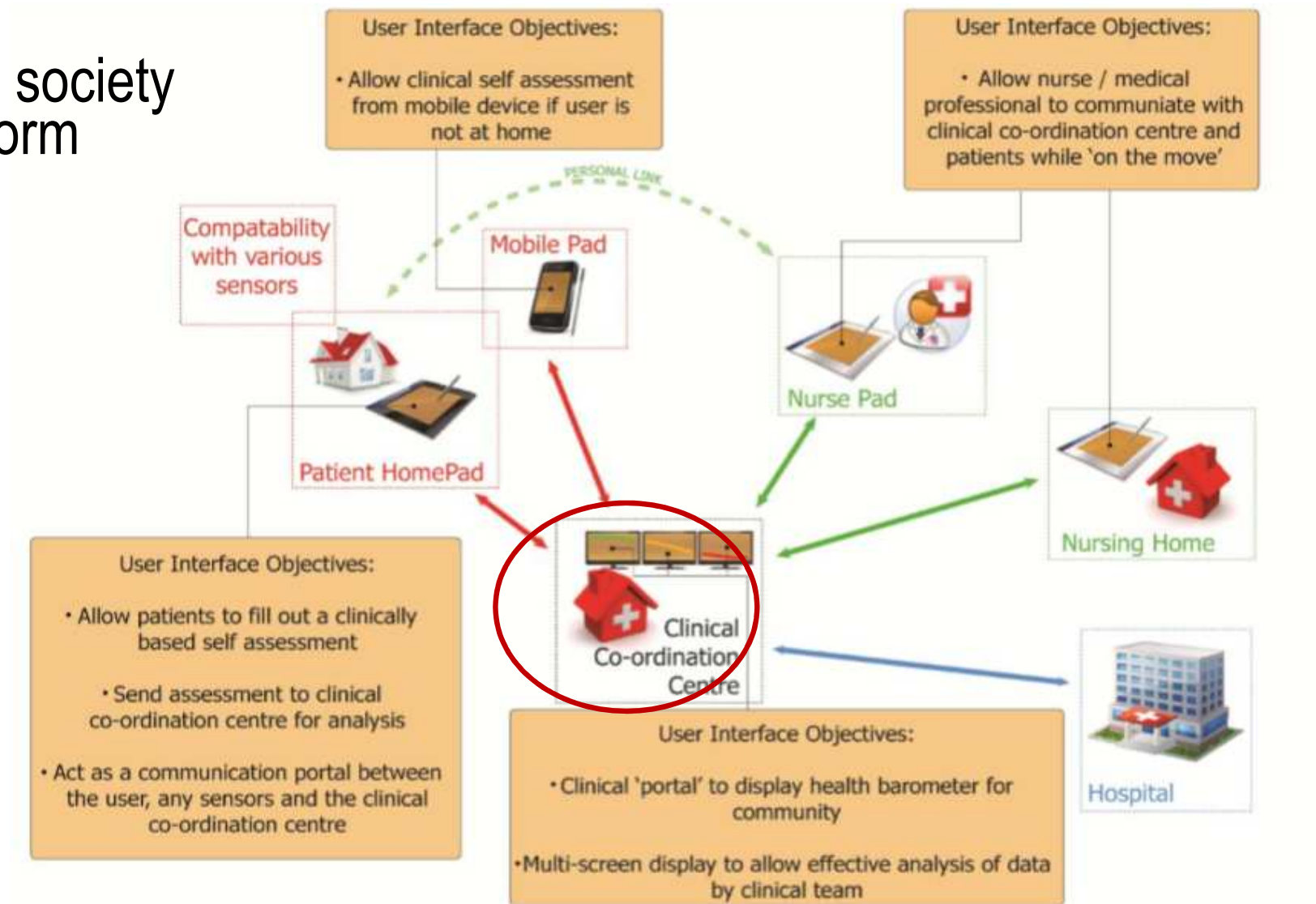
# E-health for elderly

## E-health and internet applications may help:

- **support** functional capabilities of older adults
- **promote** a better and healthier lifestyle
- **enhance** the security, prevent social isolation and help maintain the multifunctional network around the individual
- **support** (informal) careers, families and care organizations
- **increase** the efficiency and productivity of used resources in the ageing societies



# Inclusion society platform



# Inclusion Society

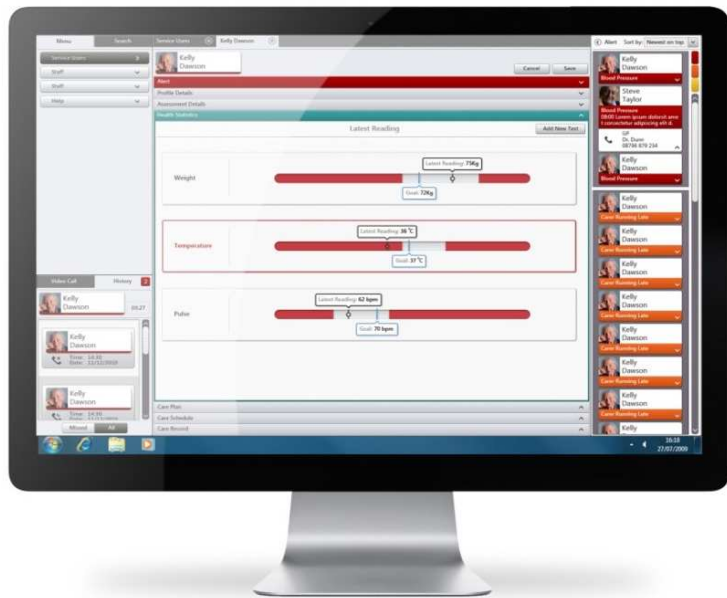
**HELPING PEOPLE  
IMPROVE THEIR HEALTH  
& FEEL CONNECTED**

**Inclusion Society**  
Multi-Platform Assisted Living Service





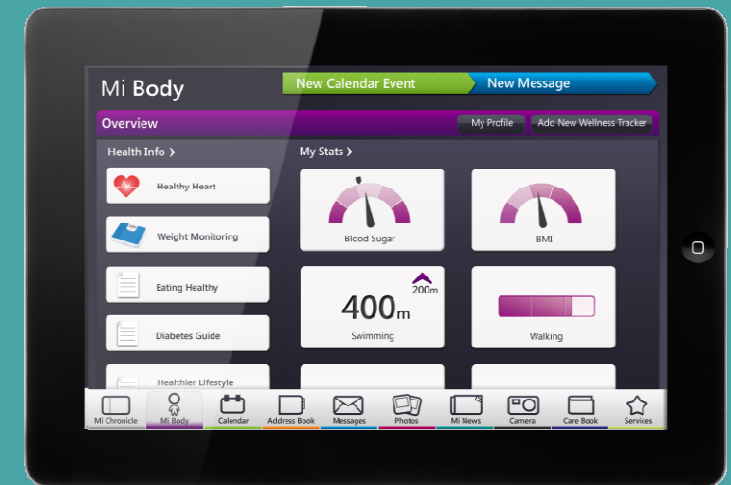
# Inclusion Society



Care Management Portal

SAME INFORMATION IN THE CLOUD,  
DIFFERENT USER PRESENTATIONS

The interaction  
design tailored  
to the specific  
requirements of  
each end user



Homepad: wellness  
section

# Inclusion Society



1 Sensors detect a rise in the patients body temperature. HomePad aggregates the sensor information and reports to the Clinical Co-ordination Centre.

2 A video call is instigated by the clinical co-ordination centre to assess the situation and arrange further treatment if needed.



3 The patient receives the details of the appointment with the identification information of the visiting doctor. This provides a sense of security for the patient.

4 The HomePad can then be used to order and schedule delivery of any medication or other items the user may require.



# Inclusion Society

QUICK ,EASY, SECURE  
ACCESS TO YOUR PRIVATE  
NETWORK OF PEOPLE  
WHO MATTER TO YOU

The Contacts area only  
contains people that you,  
or an authorised carer  
have invited in.

Contacts can be given  
specific access privileges  
(push, view, get alerts)



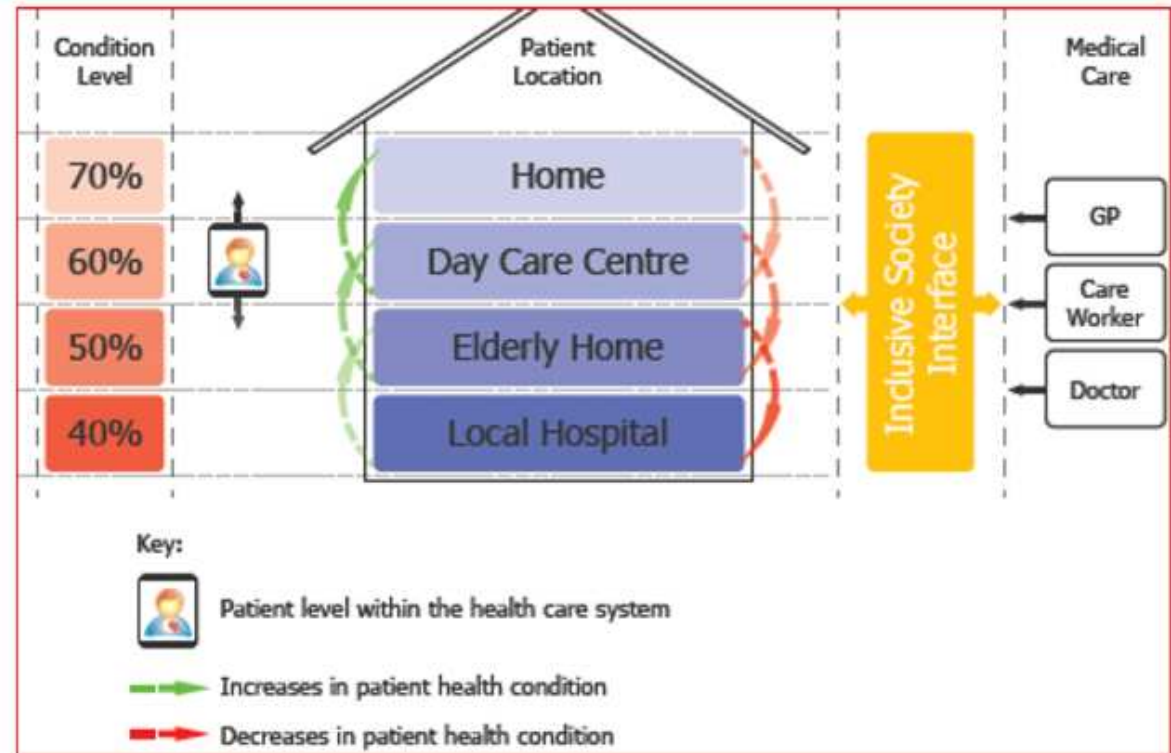
Homepad: Contacts area

# Value chain

There is considerable **synergy** by **connecting the older person** at home and/ or in institutions to the municipal health services (MHS) coordination centre

Lack of information between the actors (care workers, GP's and hospital) still exists

By implementation of Inclusion Society solution, the result is that elderly people living at home can stay longer, at **less cost for the public budget** and improved quality of live



# Inclusion Society - impact

**For the public:** cost saving from the national budget towards elderly care services via hospital and municipal care services

**For end-users (elderly):** The improvement in quality of life by increasing well being and security that they are connected, that someone are following up by monitoring and providing preventive care

**For the providers:** The municipal health services will obtain closer contact to the elderly persons at home, possibly reducing the need for direct personal contact and getting better overview with less cost and simplifying testing, by those who are testing themselves at home, instead of going to their GP's, health centre, etc.

**Industry partners:** Public and private partnership might be established as initiate new business models

# Inclusion Society - status

## PROJECT STATUS

Completed: INS

in progress (under ECH)

V2 design & Dev

Low cost Tablet integration

Brand partnership building

**Completed:** Phase 1 – activities funded by EU project 1 (inclusion society)  
User research, service system design  
V1 software (early alpha trials in 2 care homes one UK one Norway)  
Homepad, Friends and Family portal + Nurse Pad, Care Management portal

**Work in progress:** Phase 2 activities funded by project 2 (Ecare @home)  
User research into self care / mental health  
September 2014: Alpha trials

**March 2015:** Beta trials (Mental Health Clinical trial – InGeest hospital)

**September 2015:** target to start the commercial sales



# eCare@home

Tablet-Computer Delivered Ambient Assistance solution for older adults with mental disorders



# E-Health in Mental Health Care

- Advocates of e-health claim that **e-health interventions** have been extensively studied and found **effective**
- Still, e-health **has not been broadly implemented** in mental health care
- Needs and desires of end users (both patients, significant others and clinicians) are not an ongoing part of the developmental process



# eCare@home

## Targets:

- Older adults (60+) with a bi-polar disorder or recurrent depressive disorder
- Next of kin (partner, children)
- Mental health care professionals (psychiatrists, social workers, psychiatric nurses)

## To:





- Promote self-management
- Contribute to patient's awareness of the disorder
- Tap into changing needs for care
- Provide signals for tertiary prevention/crisis intervention
- Promote activation and social contact



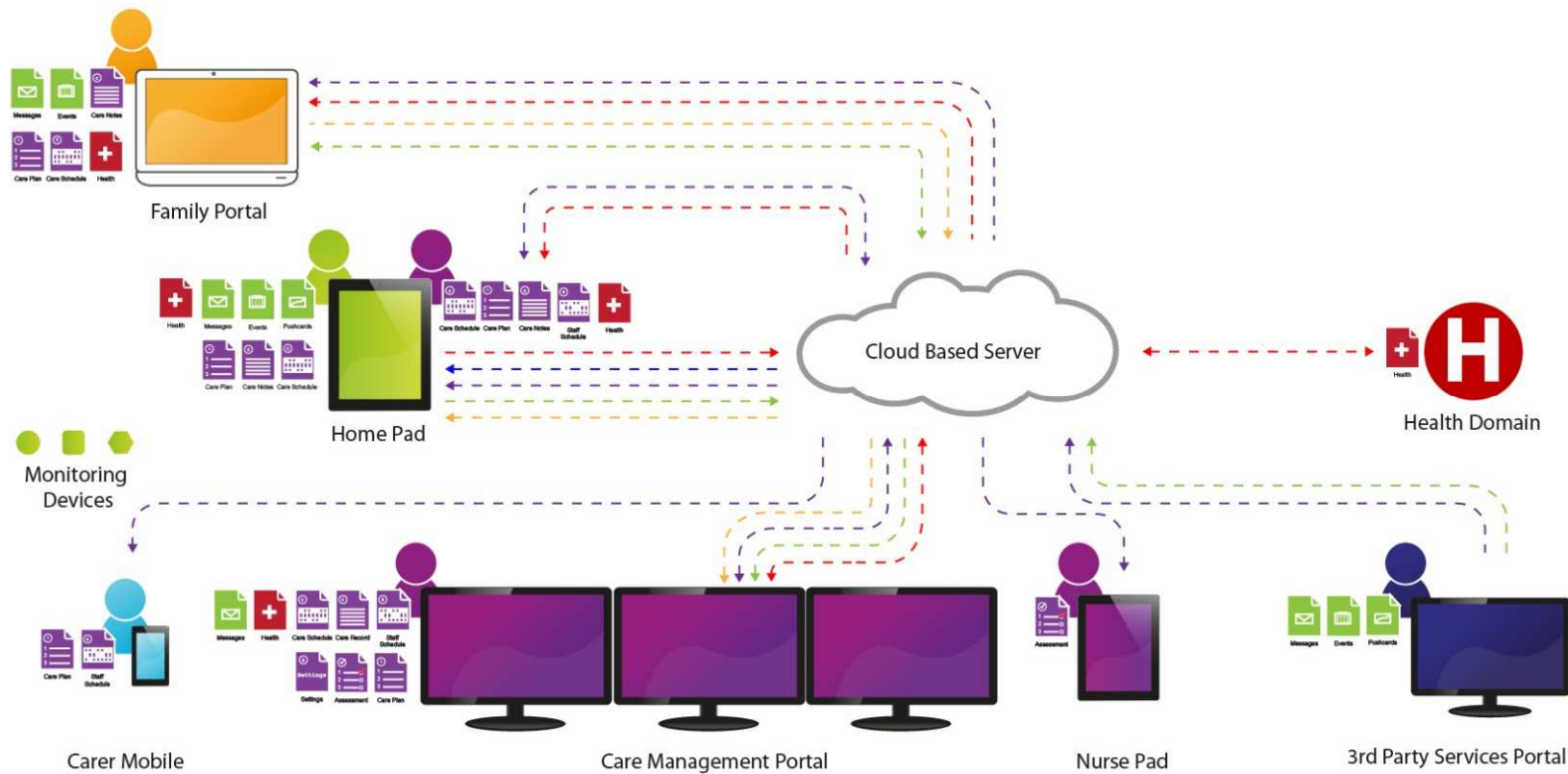
eCare Solutions



# eCare@home – customers' profile

 <p><b>Anne-Marie</b> Bipolar I disorder Young-old (62) Diagnosed late-30's High risk of relapse</p>	 <p><b>Jan</b> Bipolar II disorder Young-old (68) Diagnosed mid-50's Wife passed away</p>	 <p><b>Willem</b> Bipolar I disorder Old-old (74) Diagnosed early-30's Lonely and vulnerable</p>	 <p><b>Margaretha</b> Bipolar II disorder Old-old (80) Diagnosed mid-60's Comorbidity issues</p>
<p>Determined to avoid readmission after manic episode</p> <p>High level of family support</p> <p>Few physical or mental comorbidities</p>	<p>In severe depressive episode</p> <p>Family are very concerned following his wife's death</p> <p>Still has some independence</p>	<p>Little social contact locally but has children living abroad</p> <p>Increasingly irritable and disoriented when manic</p> <p>Doesn't like reminders of his illness</p>	<p>Multiple chronic conditions - lots of medication</p> <p>Little mobility or independence</p> <p>Some cognitive impairment</p>

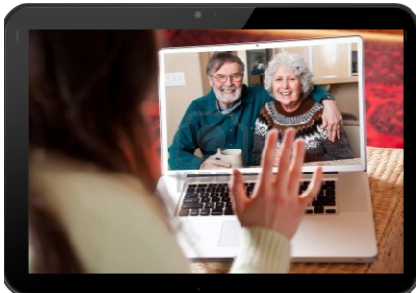
# eCare@home – platform



# eCare@home – focus



**Self-tracking** to detect patterns in mood, activities and sleep



**Online support** from formal and informal carers through e-mail, instant messaging and video-conferencing



**Psychoeducation** on disease management, medication and social activities

# eCare@home – user friendly design

## Examples of easy self-tracking design

Constant report of low mood indicates necessity to **track and check person/patient** more carefully

The screenshot shows a mobile application interface for mood tracking. At the top, there is a dark header bar with an 'Undo' button, a battery icon, and a Wi-Fi icon. Below this is an orange bar with the title 'Mood Readings' and three buttons: 'Cancel', 'Add Note', and 'Save Reading'. The main content area is titled 'Today - How did you feel?'. It features a horizontal slider with a scale from -5 to +5. Above the slider are three circular icons: a sad face at -5, a neutral face at 0, and a happy face at +5. The slider has a white handle positioned at +4, with a small black box containing '+4' below it. To the left of the slider is a white square button with a minus sign, and to the right is a white square button with a plus sign. The bottom of the screen has a dark bar with several buttons: 'Home', 'Wellness' (highlighted in orange), 'Contacts', 'Calendar', 'Settings', a left arrow, 'Mail', 'Photos', and a right arrow.



# eCare@home – user friendly design

The screenshot displays a mobile application interface for recording activity levels. At the top, a dark header bar contains an 'Undo' button and icons for battery and Wi-Fi status. Below this is an orange title bar labeled 'Activity Level Readings' with 'Cancel', 'Add Note', and 'Save Reading' buttons. The main content area asks 'Today - How active have you been?' and features three icons: a person in bed for 'Passive', a walking person, and a running person for 'Active'. A horizontal slider with a scale from -5 to +5 is positioned below these icons. A central control box with left and right arrow buttons is currently positioned over the '0' mark on the scale. To the left of the slider is a large minus sign button, and to the right is a large plus sign button. The bottom of the screen features a dark navigation bar with buttons for 'Home', 'Wellness' (which is highlighted in orange), 'Contacts', 'Calendar', 'Settings', a back arrow, 'Mail', and 'Photos', followed by a forward arrow.

# eCare@home – user friendly design

The screenshot displays a mobile application interface for logging sleep quality. At the top, a dark grey header bar contains an 'Undo' button and icons for battery and Wi-Fi status. Below this is an orange bar with the title 'Log Your Sleep Quality' and three buttons: 'Cancel', 'View Old Readings', and 'Continue'. The main content area has a light grey background and asks the question 'How well did you sleep last night?'. It features three circular icons representing different sleep states: 'Very Badly' (a sad face), 'OK' (a neutral face), and 'Very Well' (a happy face). Below these icons is a horizontal slider with a range from -5 to +5. A white location pin icon is positioned at the 0 mark on the slider. The slider has left and right arrow buttons at its ends. At the bottom of the screen is a dark grey navigation bar with buttons for 'Home', 'Wellness' (which is highlighted in orange), 'Contacts', 'Calendar', 'Settings', 'Mail', and 'Photos'. There are also left and right arrow buttons flanking the 'Settings' button.





# eCare@home – tracking the patient's condition

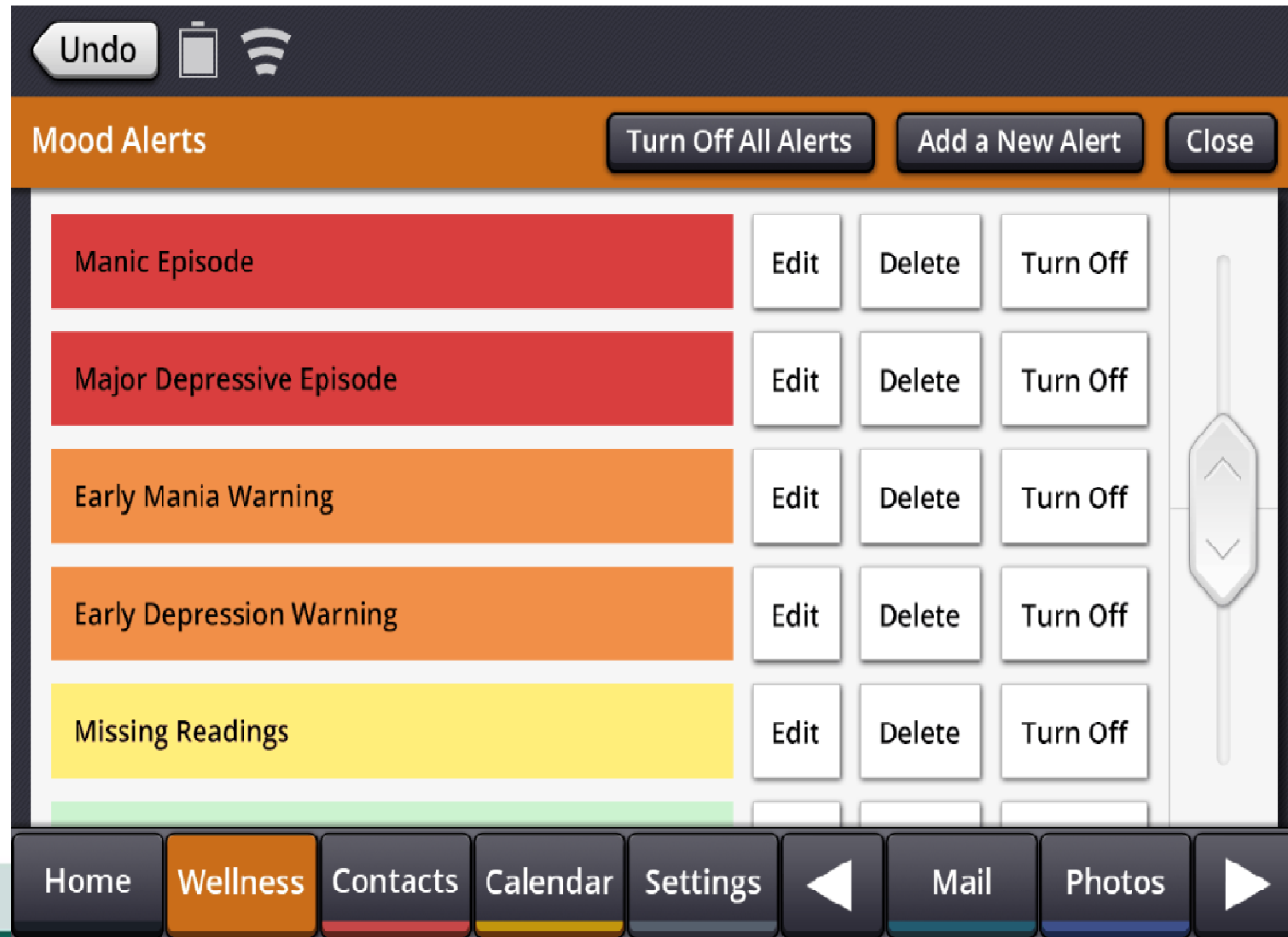




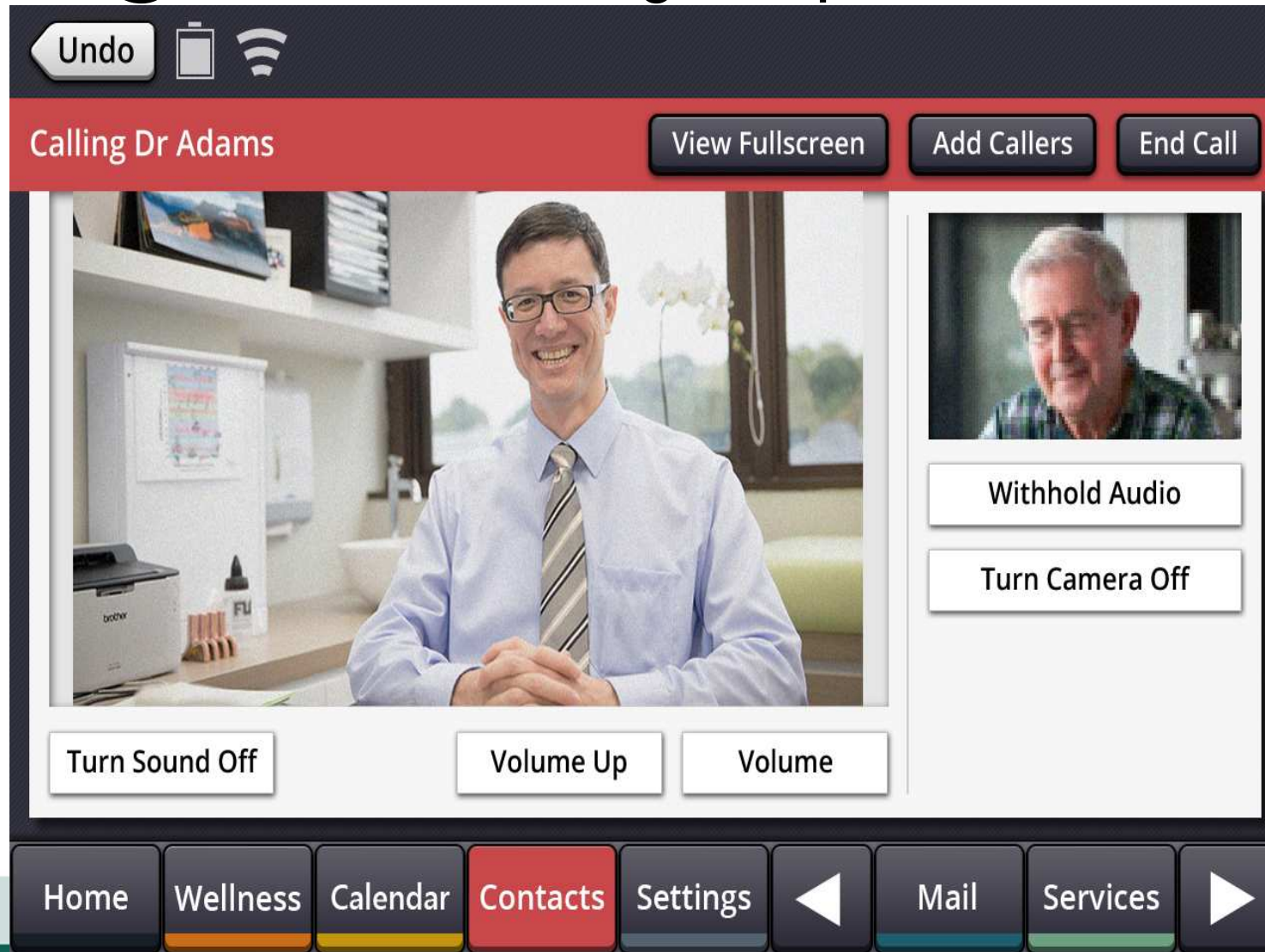
# eCare@home – tracking the patient's condition



# eCare@home – tracking the patient's condition



# eCare@home – tracking the patient's condition



# eCare@home – stakeholders

**Possible stakeholder No.1 - Municipal social services:** The core provision of the system provided by the local government (municipality) as mental healthcare provider. The provider will offer a comprehensive enterprise solution, which shall ensure that the operation works smoothly in relation to their formal and informal caregivers, improving service level and quality of services and lowering costs

**Potential Stakeholder No. 2 - Private care givers/ private operators:** Care givers might take on the role of the care provider

**Potential Stakeholder No.3 - Hybrid Health/social care support:** Combined state and municipality partnering model, where mental disorder with elderly people at home has become important national priorities in social care system in order to reduce huge hospital costs

**Potential Stakeholders No.4 - Family funded Prevention:** The system aims to offer a large number of socialisation and information tools to help avoid common mental health problems such as depression caused by lack of social contact of stimulus



# eCare@home – impact and realisation

The eCare@home solution aims to be **cost effective**, contribute to the governments' budgets through reduced cost of hospital services

Improve the **quality of lives of elderly people living at home** (with and without mental disorder)

During the project, research is planned on best business model, based on country's specific demands

Exploration of the opportunities to create a device and service proposition that is similar to the mobile phone industry. Namely - **hardware is provided for free** in return for a **fixed service contract**. Therefore the users risk of buying the hardware will be eliminated, depending only upon the level of service requested or determined



# Yes, we have also challenges

- Translating clinical practice to requirements for software development
- Different people, different needs
- Self-management: the need for autonomy vs the need for help
- No or limited access to electronic health records
- A safe, enclosed environment versus an open unrestricted system
- Medical device regulations



Thank you, for attention!



# Our contact details

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