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D4.1 Guidelines to adapt the ValueCare model to pilot sites

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Statement of originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Abstract

This deliverable provides the general framework of the ValueCare concept for pilot site implementation. It includes practical guidance to implement the ValueCare model in each pilot site. Furthermore, preparatory activities were defined that need to be conducted prior to pilot implementation.

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EXECUTIVE SUMMARY

This deliverable, **D4.1 Guidelines to adapt the ValueCare model to pilot sites**, provides the general framework of the ValueCare concept (model) for pilot site implementation. The ValueCare model includes value-based health and social care for older persons supported by ICT (i.e. the ValueCare app and the ValueCare dashboard). For the different target groups, the *value-based care approach* includes an assessment using a self-reported questionnaire which will provide an overview of the older person's mental, physical and overall wellbeing. The results of the self-reported assessment will be discussed during the consultation between the healthcare professional/ care team and the patient and their family if appropriate in order to develop an personalised integrated care plan of services and support to meet the needs identified. The *ValueCare app* will support patients in achieving the goals of their care plan. The *ValueCare dashboard* will assist informal and formal caregivers to monitor a patient's progress. D4.1 includes practical guidance to implement the ValueCare model in each pilot site. Furthermore, preparatory activities will be defined that need to be conducted prior to pilot implementation.

1   Purpose, objectives and scope

The main objective of Work Package (WP) 4 is to implement the ValueCare pilot site care process pathways and to validate them and determine their replicability. The care process pathways have been developed following the co-design activities with various stakeholder groups and which produced the ValueCare model, including the supporting ICT. WP4 has the following specific objectives:

► To implement the innovative ValueCare concept (model), for integrated health and social care for older citizens supported by ICT in 7 pilot sites.
► To adapt the ValueCare general concept to each pilot site through the development of care process pathways.
► To ensure the recruitment rate of end-users are adequate in all pilot sites and according to the agreed scientific inclusion and exclusion criteria.
► To collect the data from all pilot sites.
► To analyse the efficiency and effectiveness of the pilot sites implementations in close cooperation with WP5 on evaluation.

The purpose of deliverable 4.1 (D4.1) is to provide the general framework of the ValueCare concept (model) for pilot site implementation. The general framework is based on the model components co-designed in WP2, including the value-based approach and ICT solution. It includes practical guidance to implement the ValueCare concept (model) in each pilot site.

In D4.1 the following objectives are envisaged:
► Provide practical guidance to pilot sites to adapt the general framework to their context and target groups.
► Describe the sample recruitment in the 7 pilot sites according to the recruitment strategies.
► Determine the preparation activities that need to be conducted prior to pilot implementation.

The guidelines to adapt the ValueCare model to pilot sites is fundamental to other WP4 activities, in particular **D4.2 Implementation plan for each pilot site**. Moreover, it is related to several other WPs:

► **WP2** Development of new integrated care built on value-based methodology to be implemented at EU level; in particular, Task 2.4 Co-design with older citizens and professionals (leader: KVC).
► **WP3** Digital IT for value-based integrated care; in particular, Task 3.4 Development of the ValueCare digital solution front-end to enable the ValueCare methodology implementation in pilot sites (leader: VI).
► **WP5** Formative and summative evaluation of the ValueCare pilots, in particular, Task 5.1 Evaluation Framework (leader: EMC).
► **WP7** Exploitation, innovation and business models, in particular, Task 7.1 Innovation management and Task 7.2 Business models and corresponding feasibility (leader: ECHA).

2   Description of the pilot sites

A comprehensive description of pilot sites is provided in deliverable D2.3.

Table 1: Pilot site characteristics.

Pilot site	Population	Health system financing model	Target group
Rijeka (Croatia)	128,345[1]	Public financing – Social Health Insurance (mixed Bismarck)	Older people who had a heart attack and finished their rehabilitation in the clinic.
Athens (Greece)	664,046[2]	Public health system based on Beveridge model	Older patients with diabetes and co-morbidities living independently in the community.
Cork/Kerry (Ireland)	147,707[3]	Public-private mix in financing and provision of healthcare	Older persons (≥75 years old) with mild to moderate frailty.
Treviso (Italy)	85,200[4]	Public and universal welfare system	Older citizens with (mild) cognitive impairments
Coimbra (Portugal)	143,397[5]	Public and universal welfare system	Older citizens with none to mild cognitive impairment, co-morbidities and a lack of social support.
Valencia (Spain)	800,666[6]	Public and universal welfare system	Older people wild mild to moderate frailty and their families.
Rotterdam (the Netherlands)	638,714[7]	Public-private mix in financing based on Enthovens' model of managed competition[8]	Older people that have had ischemic stroke.

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[1] Census of population: Croatia [https://www.dzs.hr/default_e.htm]. Accessed 5 June 2020.
[2] Census of population: Athens [https://www.statistics.gr/en/greece-in-figures]. Accessed 5 June 2020.
[3] Census of population: Cork/Kerry [https://www.cso.ie/en/census/]. Accessed 5 June 2020.
[4] Census of population: Treviso [http://www.comune.treviso.it/trevisostats/]. Accessed 5 June 2020.
[5] Census of population: Coimbra [https://www.ine.pt/xportal]. Accessed 5 June 2020.
[6] Census of population: Valencia [http://www.valencia.es/ayuntamiento/webs/estadistica]. Accessed 5 June 2020.
[7] Census of population: Rotterdam [http://statline.cbs.nl/]. Accessed 5 June 2020.
[8] M. Kroneman et al., *Health Systems in Transition*, Netherlands Health system review. *18*(2), 2016.

3   Methodology

3.1   The ValueCare concept

The ValueCare concept (model) includes value-based integrated health and social care (WP2) supported by a digital solution (WP3). The aim of the model is to improve health and (social) functioning of older people, support informal caregivers, and facilitate better working conditions for practitioners. The *value-based care approach* is a specific application of 'outcome-based care delivery' developed by the International Consortium for Health Outcomes Measurements (ICHOM: www.ichom.org). It aims to select the individual care needed, and to monitor and discuss the outcomes with the patient and their family. For each pilot site target group, the value-based care approach will be implemented fine-tuned and monitored according to each integrated health and social care pathway. The *digital solution* (i.e. ICT tools) will support all stakeholders in the integrated health and social care pathway.

3.2   Target population

The ValueCare target group consists of older people with chronic health conditions (e.g. cardiovascular diseases, diabetes), frailty or (mild) cognitive impairment, their informal caregiver (e.g. family members, friends) and health and social care providers. Each pilot site has defined the specific target group for their care process pathway (Table 1). Below the inclusion criteria to be eligible to participate and exclusion criteria for participation are described per target group. Additional to these general criteria, pilot sites can define specific in, and exclusion criteria (e.g. to screen for eligible participants).

3.2.1 Older persons

Inclusion criteria

► Older adult (≥65 years of age)
► Confirmed diagnosis of the targeted chronic condition at the time of enrolment.
► Community-dwelling (not in long-term care), or temporarily in a hospital or institution and expected to be referred to outpatient rehabilitation services.
► Able to give informed consent.
► Pilot specific criteria related to the targeted condition.

Exclusion criteria

► Not able to comprehend the information provided in the local language.
► Cannot cognitively evaluate the risks and benefits of participation.
► Not willing to provide informed consent.

3.2.2 Informal caregivers

Inclusion criteria

► Adult (≥18 years of age).
► Relative, partner or friend of an eligible older person/patient.
► Able to give informed consent (in addition to that from the older person/patient).

Exclusion criteria

► Not willing to provide informed consent.

3.2.3 Health and social care professionals

Inclusion criteria

► Provides health or social care services to eligible older persons with the targeted condition.

Exclusion criteria

► Not willing to provide informed consent.

3.3   Recruitment of target population

We aim to include 240 older persons in each pilot site; 120 participants in the intervention group and 120 participants in the control group (i.e. comparison group). In addition, 50-70 informal caregivers (e.g. family members, friends); 30-40 care practitioners who work with older persons having the targeted chronic condition in either health or social care context; and 5-10 organizational and/or IT experts will also be included per pilot site. All participants will need to be included before July 1st, 2022. Participants who provide informed consent and complete the baseline questionnaire will be enrolled in the study.

Pilot sites will recruit participants with the support of public administrations and health and social service practitioners engaged in each pilot site. Recruitment will take place with the support of an engagement campaign (e.g. public events, information sessions, social media communication) developed in D2.3 and supported by WP6. Deliverables 2.3 and 6.1 comprise a detailed plan for engagement of and communication with the target groups.

3.4   Preparatory activities

Before the implementation of the ValueCare model, pilot sites will undertake some preparatory activities.

3.4.1 Medical ethical approval

Pilot sites will need to seek ethical approval from their local Medical Review Ethics Committee (MEC). Ethical approval is obligatory before enrolment of the first study participant. The procedures to obtain Ethical approval will be defined in close collaboration with WP8. Each pilot will be registered in the Clinical Trial registry (https://www.clinicaltrialsregister.eu/) after receiving ethical approval.

3.4.2 Stakeholder engagement activities

A regular communication and interaction structure will be deployed in order to build community connections with local stakeholders involved in the care process pathways. This network will help older people (and their caregivers) to receive the services and support

they need and which will be defined in the personalised integrated care plan. Methods for stakeholder engagement are described in detail in D2.3.

3.4.3 Training activities

Participating health and social practitioners will be trained in the value-based approach and to use the ValueCare dashboard. Older people and their caregivers will be supported in using the ValueCare digital solution through a helpdesk. The training activities for target groups will be defined in D4.2 "ValueCare implementation plan for each pilot".

3.5 Implementation of the ValueCare concept (model)

The ValueCare model includes the value-based integrated care approach supported by the ValueCare app (used by patients) and the ValueCare dashboard (used by informal caregivers and health and social care practitioners). Figure 1 shows a flow diagram of the implementation of the ValueCare model. It presents the general framework for pilot site implementation. Each pilot site can adapt the general framework to their context. Additionally, pilot sites can define processes and support mechanisms in more detail according to the needs and preferences of their target groups.
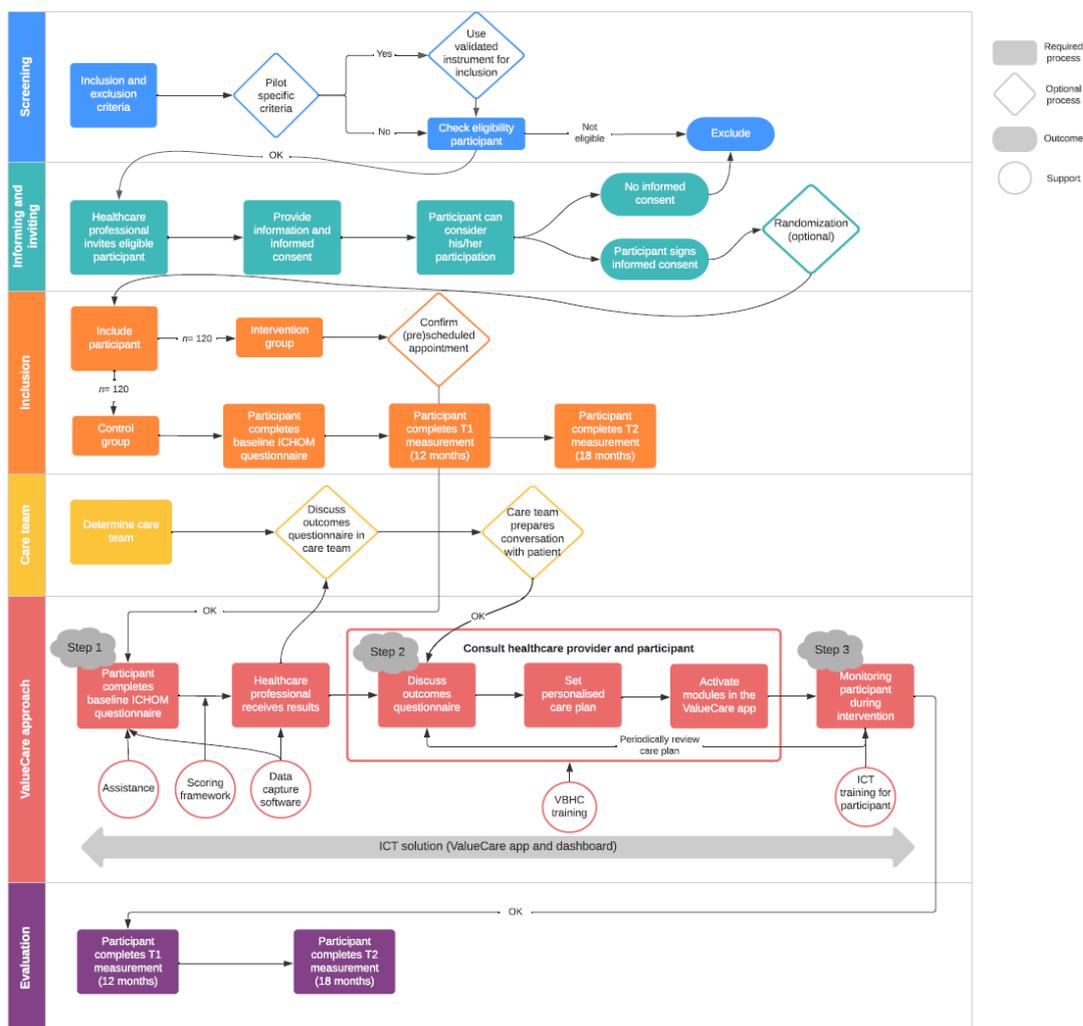

Figure 1. ValueCare flow diagram.

The ValueCare model (ValueCare approach in Figure 1) includes the following elements: 1) assessment, 2) personalised integrated care plan, 3) ICT support, and 4) face-to-face support.

1. Assessment

The assessment will include screening by a self-reported questionnaire that provides an overview of the mental, physical and overall well-being of the participant (see also D5.1 Evaluation Framework). Validated instruments that are practical and commonly used in our target groups will be used. Assistance will be provided to complete the questionnaire (i.e. research assistant, informal care provider) if needed. The questionnaire will be completed either at home or at a care facility that is part of the pilot implementation.

The responses to the questionnaire will be assessed by the participant's health care professional (i.e. nurse specialist, physician assistant) through a digital tool such as a scoring framework for each measurement to quickly analyse results. Ideally, the participants' results will be discussed in a multidisciplinary care team that brings together health and social care practitioners over the full cycle of care (Figure 1, care team). Together, the care team members prepare the consultation with the patient. During the consultation, the relevant health and social care practitioners and participant discuss the outcomes of the assessment and identify priorities for prevention and care. Subsequently, a personalised integrated care plan is set.

2. Personalised integrated care plan

Each patient will be given an individualised care plan designed specifically for his or her needs. The plan will be developed based on the outcomes of the assessment and with the patient's input. The patient, his or her caregiver and healthcare professional/ care team will periodically review the plan to allow for revisions in line with the person's health and care status, when necessary. The care plan can contain for example, information modules, exercises or support groups and will be supported by ICT.

3. ICT support

The implementation and monitoring of the assessment and personalised integrated care plan will be facilitated by a mobile application (i.e. the ValueCare app) for the patient. Through co-design the app is tailored to the needs and preferences of patients with regard to content and usability. In this app, older persons have access to a dashboard with a range of functionalities. Several aspects can be managed, including:

► The assessment of the older person by a self-reported questionnaire
► The personalised integrated care plan
► The integrated social-health network involved in the care plan
► Appointments with health and social care professionals
► Goal-setting and monitoring tools to encourage a healthy lifestyle
► Integration of personal medical devices (e.g. activity tracker, smartwatch)
► Medication reminders
► Social interaction
► Information and health education modules

Informal caregivers and health and social care practitioners will have their own web-based application (i.e. the ValueCare dashboard) in which they can monitor the patient.

4. Face-to-face support

The individual care plan might also contain physical appointments and social/ physical activities such as support groups, exercise groups or meetings with the care provider.

4   Conclusions

The aim of deliverable **D4.1 Guidelines to adapt the ValueCare model to pilot sites** is to provide the general framework to implement the ValueCare concept (model) in each pilot site. The deliverable provides a general description of the ValueCare model including the following elements: 1) an assessment of the participant's health and wellbeing, 2) a personalised integrated care plan, 3) ICT support to achieve the goals set in the care plan, and 4) face-to-face support. The flow diagram under section 3.5 has been created to visualise the required processes to implement the ValueCare model. Each pilot site will adapt processes and support mechanisms to their context. Prior to pilot implementation, pilot sites will need to seek ethical approval from their local Medical Review Ethics Committee (MEC). In addition, pilot sites will engage stakeholders to support the implementation of the ValueCare model. Training activities and pilot-specific adaptations will be further defined in **D4.2 ValueCare implementation plan for each pilot site**. This deliverable provides the framework for future deliverables in WP4, including D4.2 "ValueCare implementation plan for each pilot site" and D4.3 "Report regarding the implementation of ValueCare in 7 European pilot sites".