HCNS and HCAS contain the actors involved in the HC process, the actions and liabilities of such actors, the services available, the procedures, and the documents.

HCAS respond to a specialized care (e.g. rehabilitation, oncology, etc.) that extends the previous care model with new actors, actions, services, procedures, and documents.

**A. ACCESS SERVICES**

1. Individual Services
   i. HC Request
   ii. HCP Admission
   iii. HCP Discharge
   iv. Professional Admission
   v. Professional Discharge
   vi. Edit HCP/Professional information

2. Structural Services
   i. EU Constitution
   ii. EU-HCP Binding

**B. PATIENT CARE SERVICES**

1. Problem Assessment and Re-Evaluation
   i. Comprehensive Assessment (CA)
   ii. Multi-Dimensional Evaluation
   iii. Clinical Assessment
   iv. Physical Examination
   v. Request of Diagnostic Examination
   vi. Request of Laboratory Analysis
   vii. Consultation
   viii. Social Needs & Social Network Assessment
   ix. Follow-up

2. Intervention Plan Definition
   i. Planning Intervention Plan
   ii. Prescription of Pharmacological Treatment
   iii. Prescription of Non-Pharmacological Treatment
   iv. Prescription of Nursing Care
   v. Prescription of Assistive Devices

3. Intervention Plan Performance
   i. Case Management
   ii. Special Medical Services
   iii. Nursing Care
   iv. Social Assistance
   v. Counselling

**C. INFORMATION SERVICES**

1. Service Monitoring
   i. Patient Record Overview
   ii. Patient Record Social Overview
   iii. IIPs Overview
   iv. Schedule Overview
   v. Waiting List

2. HC Practice
   i. Guide Line Consultation
   ii. FIP Overview
   iii. Pharmacological Therapy Handbook
   iv. Best Practice Handbook
   v. Brochure Consultation

3. Database Inquiring
   i. Activity Report
   ii. Database Queries – services
   iii. Database Queries – clinical

4. Personal Information
   i. Individual Scheduling Overview
   ii. P2P Messages

**PROFESSIONAL ACTIONS AND LIABILITIES:** A number of professional liabilities are linked to each of the profiles of the professionals included as actors in the HC model. Professional Actions and Liabilities are the actions each actor performs to provide a service within the HC structure. Among these general actions, a certain amount corresponds to those needed to perform the K4CARE Model services. The latter actions have been categorized and coded to be enclosed in the ICT platform.

**SERVICES:** all the utilities provided by the HC structure for the care of HCP. HCNS provides Access services addressing organization issues as patient’s admission and discharge or the definition of EUs, Patient care services addressing the care of the patient, and Information services covering the needs of information that actors may require independent of the services they participate in.

HC is based upon the synergic actions of the actors, including the assessment of the problem and the identifying of the needs of the HCP, the definition of an Individual Intervention Plan, the accomplishment of it through the proper procedures (follow-up), and the evaluation of the results. This step-by-step process can be executed several times, until proper results are achieved.

**PROCEDURES:** A procedure is the chain of events that leads actors in performing actions to provide a service. For each service, the sequence of actions constituting the procedure is described. A special table links the actors involved in the procedure to the list of actions of the procedure that implements a particular service, and to all the documents needed.

**INFORMATION DOCUMENTS:** they are required and produced by actors to provide services in the HC structure. Documents represent the basis of the Electronic Home Care Record, the electronic health care record specifically realized inside the K4CARE project. Since these documents may have different general purposes inside the sets of services and procedures, they are divided into request, authorization, prescription, and anamnestic.
Information service documents report on underlying activities (e.g. Activity Report) – even analyzed through semi-automatic queries – or on officially recognized information related to HC (e.g., Guidelines). Exchanging messages among actors is also possible with a service.

**MultiDimensional Evaluation (MDE):** is a multidimensional, interdisciplinary diagnostic process to determine the medical, psychological and functional capabilities of a frail elderly person in order to develop a co-ordinated and integrated plan for treatment and long-term follow-up. MDE represents one of the fundamental features for the definition of the patient’s condition and needs. For this reason it individuates a specific service inside the K4CARE Model.

MDE in the K4CARE model is based on a selected set of standardized evaluation scales largely accepted and used by international teams for clinical, care, and research purposes. In the K4CARE Model a two level approach is proposed: a first level which is common to all the HCPs; and a second level which examines in depth those HCPs affected by one or both the main syndromes considered in the model: immobility syndrome and cognitive impairment.

**Evaluation Scales I level**
- Barthel Index
- Instrumental Activities Of Daily Living Scale (IADL)
- Mini Mental State Examination (MMSE)
- Tinetti Static Scale
- Yesavage Geriatric Depression Scale (GDS)
- Norton Scale
- Modified Cumulative Illness Rating Scale (CIRS)
- Home Assessment Checklist
- Social Assessment Scale
- Caregiver Burden Inventory (CBI)

**Evaluation Scales II level Cognitive Impairment**
- GDS
- Digit span
- Clock Drawing Test (CDT)
- Addenbrooke’s Cognitive Examination (ACE-R)
- Neuro Psychiatric Inventory (NPI-Q)

**Evaluation Scales II level Immobility Syndrome**
- SF-36
- Rivermead Mobility Index (RMI)
- Canadian Neurological Scale (CNS)
- Motor Examination of Unified Parkinson’s Disease Rating Scale (UPDRS)

**Follow-up scales**
- CGIC-PF
- Nursing Follow-up

**K4CARE PROJECT LIST OF MEMBERS**

<table>
<thead>
<tr>
<th>Member</th>
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<tbody>
<tr>
<td>Universitat Rovira i Virgili, ES</td>
</tr>
<tr>
<td>Centro Assistenza Domiciliare Azienda Sanitaria Locale RM B, IT</td>
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<tr>
<td>Czech Technical University in Prague, CZ</td>
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<tr>
<td>Universitá degli Studi di Perugia, IT</td>
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<tr>
<td>Telecom Italia, IT</td>
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<td>European Research and Project Office GmbH, GE</td>
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<tr>
<td>‘Ana Aslan’ International Academy of Ageing, RO</td>
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<tr>
<td>Computer and Automation Research Institute of the Hungarian Academy of Sciences, HU</td>
</tr>
<tr>
<td>The Research Institute for the Care of Older People, UK</td>
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<tr>
<td>Amministrazione Comunale di Pollenza, IT</td>
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<tr>
<td>General University Hospital in Prague, CZ</td>
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<td>Szent Janos Hospital, HU</td>
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The K4CARE project (IST-2004-026968) is an EC 6FP project aiming at the development, the integration and the use of several Information and Communication Technologies (ICT) and intelligent Computer Science (CS) technologies in the framework of Home Care (HC).

**K4CARE** is based on:
- a model for HC service which can be shared by the EU countries;
- an Electronic Home Care Record;
- a telematic and knowledge-based CS platform;
- an Actor Profile Ontology for representing the profiles of the subjects involved in the K4CARE model;
- a Case Profile Ontology for representing symptoms, diseases, syndromes;
- Computer-Based Formal Intervention Plans.

The K4CARE project is developed by thirteen EU partners: eight centres with geriatric, medical and healthcare competencies and five ICT and CS centres.

The K4CARE Health Care Model comprises services that are distributed by local health units and integrated with social services of municipalities, and other organizations of care or social support. It is based on a nuclear structure with a minimum number of common elements to provide a basic HC service that can be modularly extended with optional accessory structures. The nuclear structure is called Home Care Nuclear Structure (HCNS). The accessory structures are called HC Accessory Services (HCAS).