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DELIVERABLE D 2.3

Taxonomy of Technologies Final Version

Document Type:	Deliverable
Dissemination Level:	Public
Editor:	UMAN
Document state:	Final
Document version:	1
Contributing Partners:	UMAN, UNIBO, EPFL, NTNU, RBMF
Contributing WPs:	WP2
Estimated P/M (if applicable):	4
Date of Completion:	20/12/2013
Date of Delivery to EC:	20/12/2013
Number of Pages:	63

SEVENTH FRAMEWORK PROGRAMME

The project is co-funded by the European Community under the Information and Communication Technologies (ICT) theme of the Seventh Framework Programme (FP7/2007-2013). Grant Agreement n°288940.

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Document History

Version	Date	Comments	Author
V0.1	27/06/2013	First working draft circulated to partners	UMAN
V0.2	16/07/2013	Second draft circulated to partners	UMAN
V0.3	23/07/2013	Third draft circulated to partners	UMAN, RBMF
V0.4	13/08/2013	Fourth draft circulated to partners	UMAN, EPFL
V0.5	22/10/2013	Fifth draft circulated to partners	UMAN
V1	20/12/2013	Final version submitted to EC	UNIBO

Executive Summary

This document presents the taxonomy developed as part of the FARSEEING project, which was led by work package 2 (WP2).

The taxonomy is designed for two purposes:
[1] To characterise and classify technology-enabled interventions, such as those published in the literature. It is hoped that this will achieve easier comparison of technologies.
[2] To encourage authors of new interventions to report the intervention in such a way that it can be replicated and understood by others.

The hard copy of the taxonomy and the accompanying handbook presented here are complemented by an online tool, which can be found at taxonomy.farseeingresearch.eu. The online taxonomy is an interactive tool, facilitating classification of interventions and incorporating definitions from the handbook, which will simplify the process of characterising and gathering information about technology-enabled interventions.

Using the taxonomy

The taxonomy is divided into five domains (see Section 1 for definitions). Within each domain there are further sub-domains (shown by grey headings in the taxonomy), and then finally within in each sub-domain, there is a further breakdown of categories. This manual provides a detailed description of the domains, sub-domains and categories.

Domains $\Rightarrow$ Sub-domain $\Rightarrow$ Category

The taxonomy is a balance between detailed description and a more reductionist approach. Occasionally it may be difficult to find an exact sub-domain or category for the intervention being detailed. This is most likely to occur beyond the sub-domain level. Our advice is to select the domains, sub-domains, and categories which best describe the intervention. In each sub-domain there is a section marked “other” which allows you to enter any interventions that you cannot classify under the sub-domains currently available.

It is also important to recognise that the taxonomy has been designed for international comparison. For example, we have used the International Classification for Health Accounts (ICHA) developed by the Organisation for Economic Co-operation and Development (OECD) to classify organisations who deliver healthcare. We would encourage you to fit your situation into this classification as best you can.

Feedback

The taxonomy will evolve and grow over time. We would welcome any feedback to inform revisions either on the online tool or by emailing chris.todd@manchester.ac.uk.

Section 1: Domains and sub-domains of the taxonomy

Overview of the structure of the FARSEEING Taxonomy Handbook.

Domain A: Approach: describes the methodological approach in terms of primary aims of the intervention, study design and what recruitment and selection criteria have been used to identify participants.

Sub domains:

Primary Aims of the intervention being developed

Study Design

Primary Selection Criteria used for case identification

Domain B: Base: describes where participants have been selected from, where the intervention is delivered and by whom.

Sub domains:

Recruitment the site at which participants of the intervention were identified.

Main site(s) of delivery the site at which the *majority* of the intervention is delivered or targeted.

Domain C: Components of outcome measures: describes the outcome measures collected before and as part of the intervention.

Sub domains:

Outcome measurement includes who collects the measures and by what method.

Outcome measures include the tools used.

Domain D: Descriptors: Describes each of the technologies delivered in the intervention (and control), including sub-classifications that are considered potentially important.

Sub domains:

Technologies- Description of the technologies, including intervention components.

Control group/s- Description of control group or sham interventions.

Domain E: Evaluation: Describes evaluation approach

Sub domains:

Evaluation- Describes costs and usability of intervention

Section 2: Detailed explanations and examples for the domains and categories within the FARSEEING Taxonomy.

Domain A: Approach

(A1) Primary aim of the intervention reported in the study. **Please choose the dominant aim (you have the option to choose outcome measures in Domain C which may cover secondary aims).**	
(A1.1) To prevent falls (reduce the incidence of falls)	'A fall should be defined as an unexpected event in which the participant comes to rest on the ground, floor, or lower level.' (Lamb et al., 2005)
(A1.2) To reduce fall related injuries	*e.g. broken wrist, hip, head injuries.*
(A1.3) To detect falls	This includes activity before a fall, the falling phase, the impact on the ground, floor or lower level and the resting phase. If present, the recovery phase such as the return to the previous activity (Becker et al, 2012). *e.g. reactive call alarm, following a fall.*
(A1.4) To assess falls risk	*e.g. To carry out a multi-factorial assessment, to assess for gait patterns which put someone at risk of falls.*
(A1.5) To predict individual falls	*e.g. Studies concerning the time period immediately before the fall event; real time detection of changes / prediction of the fall event and pre-fall event.*
(A1.6) To monitor function/ physical activity and participation in activity.	*e.g. Ongoing monitoring of mobility, body sway, balance, ADL's etc. (Does not include one-off assessments of function and physical activity.)*
(A1.7) To improve function / physical activity and participation in activity.	*e.g. Studies designed to promote physical activity and increase participation.*
(A1.8) To promote independence	*e.g. Self-reliance, ageing in place, physical and intellectual capacity to care for oneself or to access support to do so.*

(A1.9) To undertake technological development	*e.g. Proof of concept, refinement of technologies, validation.*
(A1.10) To optimise health/social care resource/use	*e.g. reduce hospital admissions, social care packages, cost savings/benefits.*
(A1.11) To improve and assess psycho/social outcomes	*e.g. Targeting mental or behavioural characteristics of an individual or a group. (e.g. fear, self-efficacy, activity avoidance, loss of confidence). Targeting social outcomes (e.g. social contacts, loneliness, isolation).*
(A1.12) Others	All other primary aims not described under A1.1 to A1.11. Brief description (free text)
(A2) Study design **Type of study being conducted**	
(A2.1) Design	
(A2.1.1) RCT (includes all randomised designs)	http://www.york.ac.uk/inst/crd/pdf/Systematic_Reviews.pdf http://www.nlm.nih.gov/cgi/mesh/2013/MB_cgi?mode=&index=15512&field=all&HM=&II=&PA=&form=&input= MESH: D016449
(A2.1.2) Case control studies	http://www.york.ac.uk/inst/crd/pdf/Systematic_Reviews.pdf http://www.nlm.nih.gov/cgi/mesh/2013/MB_cgi?mode=&index=15173&field=all&HM=&II=&PA=&form=&input= MesH: D016022
(A2.1.3) Cross sectional	http://www.york.ac.uk/inst/crd/pdf/Systematic_Reviews.pdf http://www.nlm.nih.gov/cgi/mesh/2013/MB_cgi?mode=&index=3280&field=all&HM=&II=&PA=&form=&input= MESH: D003430
(A2.1.4) Quasi-experiments	http://www.york.ac.uk/inst/crd/pdf/Systematic_Reviews.pdf

(A2.1.5) Qualitative study	http://www.nlm.nih.gov/cgi/mesh/2013/MB_cgi?mode=&index=21264&field=all&HM=&II=&PA=&form=&input= MeSH: D036301
(A2.1.6) Feasibility study	http://www.nlm.nih.gov/cgi/mesh/2013/MB_cgi MeSH: D005240
(A2.1.7) Mixed methods	Any combination of the above. *Free text for description.*
(A2.2) Intervention type	
(A2.2.1) Single intervention	Only one major intervention is provided to the participants *e.g. people receive exercise messages via a smartphone.*
(A2.2.2) Multiple interventions	Two or more interventions are given, but are standard interventions, not tailored to the individual participants. Describe the interventions and how they were implemented.
(A2.2.3) Multifactorial intervention	Two or more interventions are given, which are linked to each participant's risk profile, identified through assessment (see Domain C: Components). Not all participants receive the same combination of interventions.
(A3) Main Selection Criteria	
(A3.1) Population approach These are approaches in which the entire population of older people are targeted for recruitment. No targeting criteria are specified, with the exception of age and gender (sometimes).	
(A3.1.1) Age only specified population	The only approach to targeting the population is by age e.g. >50. Rather than a specified age range.
(A3.1.2) Developmental population	Population not defined by age used for proof of concept. Convenience population may be identified to test technology. *e.g. use of younger people to simulate falls. However, intervention is aimed at older population group.*
(A3.1.3)	Defined as users of a specific service.

Patients/users of service	
(A3.2) Demographics	
(A3.2.1) Age group	≥ ….. years (Insert the minimum age of the participants according to the inclusion criteria.)
(A3.2.2) Female only	
(A3.2.3) Male only	
(A3.2.4) Selected on basis of demographic characteristics	e.g. Ethnic group: A group of people with a common cultural heritage that sets them apart from others in a variety of social relationships [MeSH D005006]. If the inclusion and exclusion criteria for a study or programme did not state a specific ethnic group, but all members of the sample are from one ethnic group, then this box should not be ticked. Social and-economic status: Social and economic factors that characterise the individual or group within the social structure [MeSH D012959].
(A3.2.5) Previous fall history	History of falls during the last year (self-report or any records) State whether single fall, or multiple falls (two or more).
(A3.2.6) Sedentary	Sedentary behaviour is ‘a cluster of individual behaviours where sitting of lying is the dominant mode of posture and energy expenditure is very low’ (Pate et al., 2008).
(A3.2.7) Underactive	Usual level of physical activity that is less than 30 minutes of moderate-intensity physical activity on most days of the week. [MeSH D057185]
(A3.2.8) Screening tool	Selected by the use of a screening tool. A fall screening tool is a short test intended to determine an older person’s risk of falling in order to determine eligibility for a fall risk intervention. It is not usually used to determine treatment received. Examples are the FRAT and AGS/BGS fall screening algorithm.

	An exercise screening tool could also be used. Participants could be selected based on their strength and balance or the number of exercise/activity hours.
(A3.2.9) Others	Not described under A3.2.1-A3.2.8 Brief description (*free text*)
(A3.3) Chronic diseases, symptoms, impairments	
(A3.3.1) Osteoporosis / osteoporotic (bone fragility) fractures	Osteoporosis: Reduction of bone mass without alteration in the composition of bone, leading to fractures. Primary osteoporosis can be of two major types: postmenopausal osteoporosis (OSTEOPOROSIS, POSTMENOPAUSAL) and age-related or senile osteoporosis. [MeSH D010024].
(A3.3.2) Parkinson's disease/ syndrome	Parkinson disease: A progressive, degenerative neurologic disease characterised by a tremor. [MeSH D010300].
(A3.3.3) Cerebrovascular Disorders	A broad category of disorders characterized by impairment of blood flow in the arteries and veins which supply the brain. [MeSH D002561]
(A3.3.4) Eye diseases, visual impairments	Eye diseases [Mesh D005128], Vision disorders: Visual impairments limiting one or more of the basic functions of the eye: visual acuity, dark adaptation, colour vision, or peripheral vision. [MeSH D014786]
(A3.3.5) Dementia, cognitive impairment	Dementia: An acquired organic mental disorder with loss of intellectual abilities of sufficient severity to interfere with social or occupational functioning. The dysfunction is multifaceted and involves memory, behaviour, personality, judgment, attention, spatial relations, language, abstract thought, and other executive functions. [Dementia: MeSH D003704] This category includes also less severe cognitive impairments affecting the ability to think, concentrate, formulate ideas, reason and remember.

(A3.3.6) Depression symptoms	Depression: Depressive states usually of moderate intensity in contrast with major depression present in neurotic and psychotic disorders. [Depression: MeSH D003863] Depressive disorder: An affective disorder manifested by either a dysphoric mood or loss of interest or pleasure in usual activities. The mood disturbance is prominent and relatively persistent. [MeSH D003866] Dysthymic Disorder: Chronically depressed mood that occurs for most of the day, more days than not, for at least 2 years. During periods of depressed mood, at least 2 of the following additional symptoms are present: poor appetite or overeating, insomnia or hypersomnia, low energy or fatigue, low self-esteem, poor concentration or difficulty making decisions, and feelings of hopelessness. [MeSH D019263]
(A3.3.7) Syncope	A transient loss of consciousness and postural tone caused by diminished blood flow to the brain (i.e., Brain Ischemia). [MeSH D013575].
(A3.3.8) Gait and/or balance impairment	Gait is the way one locomotes or walks [MeSH D005684]. Examples: walking patterns and running patterns; impairments such as spastic gait, hemiplegic gait, paraplegic gait, asymmetric gait, limping and stiff gait pattern [ICF b770]. Balance impairments include impairments of sitting, static standing or dynamic balance. In the context of falls gait and balance impairments are often detected with timed or qualitative performance tests such as the get up and go test.
(A3.3.9) Urinary incontinence	Involuntary loss of urine, such as leaking of urine. It is a symptom of various underlying pathological processes. Major types of incontinence include urinary urge incontinence and urinary stress incontinence [MeSH D014549].
(A3.3.10) Diabetes	Examples: Diabetes Mellitus, Type 2: A subclass of Diabetes Mellitus that is not Insulin-responsive or dependent (NIDDM). It is characterized initially by Insulin resistance and Hyperinsulinaemia; and eventually by glucose intolerance; Hyperglycaemia; and overt diabetes. [MeSH D003924]

	Diabetes Mellitus, Type 1: A subtype of Diabetes Mellitus that is characterised by Insulin deficiency. It is manifested by the sudden onset of severe Hyperglycaemia, rapid progression to Diabetic Ketoacidosis, and death unless treated with insulin. [MeSH D003922]
(A3.3.11) Obesity	A status with body weight that is grossly above the acceptable or desirable weight, usually due to accumulation of excess fats in the body. The standards may vary with age, sex, genetic or cultural background [MeSH D009765]
(A3.3.12) Others	Not described under A3.3.1-A3.3.11. Brief description (*free text*)
(A3.4) Medication specific	Individuals have been selected as they are taking specified classes of medication with a known association with fall risk (e.g. SSRIs; sedatives; hypnotics), a known effect on balance and physical activity or as identified by the authors of the paper.
(A3.5) Specific environments or living conditions	Individuals have been selected as they are living in a specific environment or within specific living conditions. *e.g. Extra Care Housing/Assisted Living Facility; hospital; nursing homes).* *(Free text)*
(A3.6) Specific groups excluded	
(A3.6.1) Requires walking aid	Requires walking aid to carry out ADL and movement. *e.g. walking stick, frame.*
(A3.6.2) Cognitive impairment	e.g. Dementia: An acquired organic mental disorder with loss of intellectual abilities of sufficient severity to interfere with social or occupational functioning. [Dementia: MeSH D003704] This category also includes less severe cognitive impairments affecting the ability to think, concentrate, formulate ideas, reason and remember.
(A3.6.3) Other specified exclusion	Specific group(s) stated by authors and which cannot be coded elsewhere. Don't code "Other specified exclusion" if the criteria obviously interferes with the planned intervention or increases the

	risk of dropping out of the study in an obvious way: *Illustrative examples:* - *Terminal illness.* - *Admitted for palliative care (institutional studies).* - *Enrolled in any other similar studies.* - *Participating in any similar interventions.* - *Receiving home nursing care on a regular basis (community studies).* - *Planning to be absent from the intervention location for a longer period or don't expect to remain in the area during the intervention period.* - *Psychiatric illness prohibiting participation.* - *Too frail to withstand the exercises.* - *Contraindication to treatment.* - *Not speaking the language the intervention or assessment is delivered in.* - *Living too far away from the research centre.* - *Could not give informed consent (e.g.: cognitive impairment and no regular carer).* - *Unable or unwilling to complete the baseline assessments.* - *Not ambulatory with or without an assistive device.* - *Uncontrolled cardiac failure of hypertension.* - *Chronic alcoholism.* - *Active cardiovascular, pulmonary, vestibular and bone diseases.* - *Active metabolic diseases.* Brief description (*free text*)
(A3.6.4) No selection criteria specified	Authors have not specified inclusion and exclusion criteria.
(A4) Sampling method	
(A4.1) Convenience sample	http://wps.prenhall.com/chet_portney_foundations_3/85/21909/5608776.cw/index.html

(A4.2) Random sample from population	http://wps.prenhall.com/chet_portney_foundations_3/85/21909/5608776.cw/index.html
(A4.3) Cluster sampling	http://wps.prenhall.com/chet_portney_foundations_3/85/21909/5608776.cw/index.html
(A4.4) Snowball sampling	http://wps.prenhall.com/chet_portney_foundations_3/85/21909/5608776.cw/index.html

Domain B: Base

Recruitment Site & Case Identification **Main Site of Delivery** **Kind of Service Provider** **Describes where participants have been selected from and where the intervention is delivered.**
The **recruitment site** is the site at which participants were identified. This includes the setting and/or the discipline. The **main site of delivery** for ICT is the site where the technology is used or implemented, data are recorded, interventions or assessments are delivered. It is very possible that case identification occurs at one site, and the delivery of services may occur across multiple sites. Post intervention follow-up or booster sessions/visits are not counted in this category. The **service-provider** is the institution, company or person who is using and providing the ICT within a work setting, research, a business or service model. For the classification of the health care providers the International Classification for Health Accounts (ICHA) developed by the Organisation for Economic Co-operation and Development (OECD) was used as far as possible**.**
(B1) Primary health care providers
(B1.1)Hospitals (Inpatient: Acute or Sub-acute) "Hospitals comprise licensed establishments that are primarily engaged in providing medical, diagnostic and treatment services that include physician, nursing and other health

services to inpatients and the specialised accommodation services required by inpatients. Although the principal activity is the provision of inpatient medical care they may also provide day care, outpatient and home health care services as secondary activities. The tasks of hospitals may vary by country and are usually defined by legal requirements." (OECD, Eurostat, WHO, 2011; p.131), Unlike the ICHA-HP this classification distinguishes between acute, emergency and sub-acute settings. OECD System of Health Accounts	
(B1.1.1) Acute	Licensed establishments primarily engaged in providing diagnostic and medical treatment (both surgical and non-surgical) to in-patients with a wide variety of medical conditions (including general hospitals, mental health hospitals and other specialised hospitals). *Illustrative examples:* - General acute care hospitals. - Community, county, and regional hospitals. - Hospitals of private non-profit-organisations (e.g. Red Cross). - Teaching hospitals; university hospitals. - Army, veterans, and police hospitals. - Acute department of a geriatric hospital. - Geriatric evaluation and treatment unit. - Overnight acute inpatient services. - Same day acute inpatient services.
(B1.1.2) Emergency department	Hospital department responsible for the administration and provision of immediate medical or surgical care to the emergency patient.
(B1.1.3) Sub-acute	Licensed establishments or departments primarily engaged in medical post-acute, rehabilitative, preventive and extended care services *Illustrative examples:* - Geriatric rehabilitation (inpatient). - Rehabilitation hospital. - Long-stay geriatric care in the acute hospital setting.

Cross-references Establishments referred to as hospitals but primarily engaged in providing inpatient long-term nursing and rehabilitative services to persons requiring convalescence are classified under "Residential long-term (nursing) care facilities". Facilities specialising in the long-term care of persons diagnosed with learning disabilities / intellectual disabilities, or mental health problems, or in substance abuse programmes are classified under "Residential long-term (nursing) care facilities / Mental health and substance abuse facilities."	
(B2) Residential long-term (nursing) care facilities (Non-acute) *[ICHA-HP HP.2]*	
Comprises establishments primarily engaged in providing residential long-term care that combines nursing, supervisory or other types of care as required by the residents. Health services are largely at the level of nursing care, in combination with personal care services. The medical components of care are, however, much less intensive than those provided in hospitals." (OECD, Eurostat, WHO, 2011; p.133) OECD System of Health Accounts	
(B2.1) Long-term nursing care facilities (HP.2.1)	Establishments that are primarily engaged in providing inpatient nursing and rehabilitative services for long-term care patients. Permanent core staff of registered or licensed practical nurses that, along with other staff, provide nursing care in combination with personal care. Also occasionally provide acute health care and nursing care in conjunction with accommodation and other types of social support, such as assistance with day-to-day living tasks and assistance towards independent living. The exact classification in the corresponding types of institutions depends on the country-specific division of labour in the care process, especially in long-term care and rehabilitation. (OECD, Eurostat, WHO, 2011; p.133-134) OECD System of Health Accounts Illustrative examples: - Convalescent homes or convalescent hospitals. - Homes for the elderly with nursing care. - In-patient care hospices. - (Community) nursing homes. - Rest homes with nursing care. - Skilled nursing facilities (USA).

	- Teaching nursing homes. - Long-term care facilities. **Cross-references** Institutions where nursing care interventions are more of an incidental character or are performed by non-permanent staff such as visiting nurses are probably social care institutions and should be classified as "Establishments of long-term social care." This should also apply to organisations where medical and nursing health care services account for only a small share of the institution's overall activity. Nurses visiting these institutions should be reported separately as "Providers of ambulatory health care / Other health care practitioners".
(B2.2) Mental health and substance abuse facilities (HP.2.2):	Establishments (e.g. group homes, intermediate care facilities) that are primarily engaged in providing domiciliary services for persons diagnosed with learning disabilities / intellectual disabilities. Provide mental health care, though the focus is on room and board, protective supervision and counselling. Residential mental health and substance abuse facilities are primarily engaged in providing residential care and treatment for patients with mental health and substance abuse illnesses. Health care services are incidental to the counselling, mental rehabilitation and support. (OECD, Eurostat, WHO, 2011; pp.134-135) OECD System of Health Accounts Illustrative examples: - Residential mental retardation facilities. - Mental health and substance abuse facilities. - Alcoholism or drug addiction rehabilitation facilities (other than licensed hospitals). - Mental health convalescent homes or hospitals. - Day and night care institutions providing, for a limited time, long-term nursing, including personal care for persons with mental illness such as dementia, etc. **Cross-references**

	Day-care centres with curative or rehabilitative care focusing on individuals other than those diagnosed with learning disabilities / intellectual disabilities are classified under "Providers of ambulatory health care / All other ambulatory centres".
(B2.3) Other residential long-term care facilities (HP.2.9)	e.g. Geriatric rehabilitation facilities that do not fulfil the criteria for geriatric hospitals. (OECD, Eurostat, WHO, 2011; pp.135) OECD System of Health Accounts
(B3) Providers of ambulatory health care	
Establishments primarily engaged in providing health care services directly to outpatients who do not require inpatient services. Includes offices of general medical practitioners; medical specialists; establishments specialising in the treatment of day-cases and in the delivery of home care services. Health practitioners provide services to patients who visit the health professional's office, or the practitioners visit the patients at home. Do not usually provide inpatient services. This item has five subcategories, including: medical practices, dental practices, other health care practitioners, ambulatory health care centres and providers of home health care services. (OECD, Eurostat, WHO, 2011; pp.135) OECD System of Health Accounts **Recruitment:** If the recruitment procedure was based on e.g. computerised patient registers from general practitioners code "community based". Code "Providers of ambulatory health care" only if they have an active role in screening and recruiting eligible study participants inside their practices or services.	
(B3.1) Medical practices (HP.3.1)	Offices of general medical practitioners and offices of medical specialists (other than dental practice) in which medical practitioners holding the degree of a doctor of medicine (Code 2210 ISCO-08, ISCED-97 level 5 and 6) are primarily engaged in the independent practice of general or specialised medicine, including psychiatry, cardiology, osteopathy, homeopathy, surgery and others. This group also includes the practices of TCAM professionals with a corresponding medical education. (OECD, Eurostat, WHO, 2011; p.135) OECD System of Health Accounts
(B3.2) Offices of general medical practitioners (HP.3.1.1)	Establishments of health practitioners who hold the degree of a doctor of medicine or a corresponding qualification and are primarily engaged in the independent practice of general

	medicine. Although in some countries "general practice" and "family medicine" may be considered as medical specialisations, these occupations should always be classified here." (OECD, Eurostat, WHO, 2011; p.136) OECD System of Health Accounts Illustrative examples: - General practitioners in private offices; general practices. - Physician walk-in offices/centres. - District medical doctors; family medical practitioners; medical doctors (general); medical officers (general); resident medical officers specialising in general practice; physicians (general); primary health care physicians. Independent practising general practitioners and general paediatricians within the public system. Specialists of a wide range of specialities in private offices.
(B3.3) Offices of mental health medical specialists (HP.3.1.2)	Establishments of independent mental health practitioners holding the degree of a doctor of medicine with a specialisation in mental medicine or a corresponding qualification." (OECD, Eurostat, WHO, 2011; pp.136) OECD System of Health Accounts
(B3.4) Offices of medical specialists (other than mental medical specialists)(HP.3.1.3)	Establishments of health practitioners holding a degree of medical doctor with a specialisation other than general medicine or mental health (equivalent to ISCO-08Code 2212). (OECD, Eurostat, WHO, 2011; p.137) OECD System of Health Accounts Illustrative examples: - Offices of surgeons, aesthetic surgeons, anaesthetists, cardiologists, dermatologists, emergency medicine specialists, endocrinologists, orthopaedists, preventive medicine specialists, radiologists and radiotherapists, rheumatologists, specialist physicians (internal medicine), urologists, etc. - Establishments that are known as medical clinics other than multi-specialist centres, which are primarily engaged in the treatment of outpatients (Korea, Japan) Self-employed and independent specialists who rent a room or equipment for the purpose of their own outpatient practices on-

	site in hospitals or residential long-term care facilities.
(B3.5) Other health practitioners (HP.3.3.)	Paramedical and other independent health practitioners (other than medical professions: general or specialist physicians, and dentists), such as chiropractors, optometrists, psychotherapists, physical, occupational, and speech therapists and audiologist establishments who are primarily engaged in providing care to outpatients. Operate as individual or group practices in their own offices, or independently in the facilities of others. Some form of legal registration and licensing is a necessary condition in order to be reported as a paramedical practitioner in many countries. (OECD, Eurostat, WHO, 2011; p.138) OECD System of Health Accounts Illustrative examples: - Physiotherapists and physical therapists; - Occupational and speech therapists; - Offices of podiatrists - Nurses offices - Pharmacists - Dieticians
(B3.6) Ambulatory health care centres (HP.3.4)	Establishments engaged in providing a wide range of outpatient services by a team of medical, paramedical and support staff. Generally treat patients who do not require inpatient treatment. They differ from HP.3.1.3 Offices of medical specialists by their multi-specialisations, the complexity of the medical-technical equipment used and the range of types of health professionals involved." *(OECD, Eurostat, WHO, 2011; pp.139)* OECD System of Health Accounts
(B3.7) Ambulatory mental health and substance abuse centres (HP.3.4.1)	Establishments with medical staff, primarily engaged in providing outpatient services related to the diagnosis and treatment of mental health disorders, alcohol and other substance abuse. Generally treat patients who do not require inpatient treatment. They may provide counselling staff and information regarding a wide range of mental health and substance abuse issues and/or refer patients to more extensive treatment programmes, if necessary. (OECD,

	Eurostat, WHO, 2011; pp.139-140) OECD System of Health Accounts *Illustrative examples:* - Outpatient mental health centres and clinics (other than hospitals and mental health facilities). **Cross-references** Hospitals primarily engaged in the inpatient treatment of mental health and substance abuse illnesses with an emphasis on medical treatment and monitoring are classified under "***Hospitals"***; Establishments primarily engaged in the inpatient treatment of mental health and substance abuse illness with an emphasis on residential care and counselling rather than medical treatment are classified under (B2.2) HP.2.2 *Mental health and substance abuse facilities*.
(B3.8) Free-standing ambulatory surgery centres (HP.3.4.3)	Specialised establishments with physicians and other medical staff, primarily engaged in providing surgical services (e.g. orthoscopic and cataract surgery) on an outpatient basis. Outpatient surgical establishments have specialised facilities (e.g. operating and recovery rooms) and specialised equipment (e.g. anaesthetic or X-ray equipment). (OECD, Eurostat, WHO, 2011; p. 140) OECD System of Health Accounts **Cross-references** Hospitals that also perform ambulatory surgery and emergency room services are classified Under "*Hospitals*".
(B3.9) Dialysis care centres (HP.3.4.4.)	Establishments with medical staff, primarily engaged in providing outpatient kidney or renal dialysis services. (OECD, Eurostat, WHO, 2011; p. 140) OECD System of Health Accounts

(B3.10) All other ambulatory centres (HP.3.4.9.)	Establishments that are engaged in providing a wide range of outpatient services, by a medical, paramedical and often support staff. Usually bringing together several specialities and/or serving specific functions of primary care and/or secondary care. e.g. centres or clinics of health practitioners with different degrees (i.e. physician and dentist). (OECD, Eurostat, WHO, 2011; pp. 140-141). OECD System of Health Accounts **Cross-references**: Centres of hospitals that also perform ambulatory surgery and emergency room services are classified under *"**General hospitals**"* if they are fully integrated. ***Note:*** *Mixed health and social care. In some health care systems "integrated care" refers to the inclusion of social care elements. It can be classified under "Providers of ambulatory health care / other ambulatory centres if medical ambulatory care dominates, or otherwise under **"Establishments of long term social care"** or "**Other 3rd party providers"**, if social care dominates.*
(B3.11) Providers of home health care services (HP.3.5)	Establishments primarily engaged in providing skilled nursing services in patients' homes. May also include personal care services, support in medications, use of medical equipment and supplies, counselling; 24-hour home care; occupational and vocational therapy; dietary and nutritional services; speech therapy; audiology; and high-tech care, such as intravenous therapy. Often substitutive for inpatient long-term services delivered by HP.2 Residential long-term care facilities or outpatient services provided by HP.3.3 Other health care practitioners." (OECD, Eurostat, WHO, 2011; p. 141) OECD System of Health Accounts *Illustrative examples* - Community nurses and domiciliary nursing care (including child day care in the case of sickness). - Home health care agencies. - Visiting nurse associations.

	Cross-references Excluded are non-medical or non-paramedical providers offering help and support at home, and thus predominately engaged in providing services related to instrumental activities of daily living (IADL) such as help in cleaning, shopping, etc. These non-health care activities are outside the health care boundary, and respective providers that deliver only IADL services are captured under ***"Establishments of long term social care"*** *or "****Other 3rd party providers".***
(B4) Other primary health care providers *[ICHA-HP HP.4, HP.5, HP.6]*	
Providers of ancillary services *[ICHA-HP HP.4]* Establishments that provide specific ancillary type of services directly to outpatients under the supervision of health professionals. Includes providers of patient transportation and emergency rescue, medical and diagnostic laboratories, and other providers of ancillary services. May charge patients directly for their services. (OECD, Eurostat, WHO, 2011; p. 142) OECD System of Health Accounts	
(B4.1) Providers of patient transportation and emergency rescue (HP.4.1)	Establishments primarily engaged in providing the transportation of patients by ground or air in the case of emergencies, or as a component of the treatment process. The ambulance vehicles are often operated by medically trained personnel. (OECD, Eurostat, WHO, 2011; p. 142) OECD System of Health Accounts *Illustrative examples:* - Ambulance services for patients with or without emergency rescue. - Establishments primarily engaged in providing specialised patient transportation that is not rescue service along with health care e.g. transport services for dialysis or chemotherapy. - Patient transportation (by ground and air) related to specific medical services like transplantology. - Patient transportation by conventional vehicles specially adjusted for a medical purpose. **Cross-references** Transportation in conventional vehicles by non-specialised providers, such as by taxis when this is authorised and the

	costs are reimbursed by health insurance (*e.g.* for transportations of patients undergoing renal dialysis or chemotherapy), is classified under "**Rest of economy** / *All other industries as secondary providers of health care*."
(B4.2) Medical and diagnostic laboratories (HP.4.2)	Establishments primarily engaged in providing analytic or diagnostic services, including body fluid analysis or genetic testing, directly to outpatients with or without referral from health care practitioners." (OECD, Eurostat, WHO, 2011; p. 142) OECD System of Health Accounts *Illustrative examples:* - Diagnostic imaging centres; - Dental X-ray or medical X-ray laboratories; - Medical/clinical laboratories. *Note: Excluded are any providers of diagnostic services, forensic laboratories, genome data centres or blood and organ banks that deliver their services only as intermediate outputs to other health care providers within an episode of medical treatment.* **Cross-references** Establishments such as optical and orthopaedic laboratories that are primarily engaged in making lenses to prescription or making orthopaedic or prosthetic appliances to prescription are classified under "**Retailers and other providers of medical goods**."
(B4.3) Other providers of ancillary services (HP.4.9)	Services not explicitly listed above. (OECD, Eurostat, WHO, 2011; p. 143) OECD System of Health Accounts *Illustrative examples:* ▪ Hearing testing services (except by offices of audiologists). ▪ Pacemaker monitoring services. ▪ Physical fitness evaluation services (except by offices of health practitioners).
(B5) Retailers and other providers of medical goods *[ICHA-HP HP.5]*	
Specialised establishments whose primary activity is the retail sale of medical goods to the	

general. Establishments whose primary activity is the manufacture of medical goods, such as making lenses, orthopaedic or prosthetic appliances for direct sale to the general public are also included, as is fitting and repair done in combination with sale. *Note*: Due to special medical safety and quality regulations, retailers of over-the counter medical products and other providers of medical goods are subject to licensing and/or pharmaceutical authorisation in order to be eligible to provide their activities. Non-health care products such as cosmetics, dietetic products and natural products are excluded from health expenditures." (OECD, Eurostat, WHO, 2011; p. 144) OECD System of Health Accounts	
(B5.1) Pharmacies (HP.5.1)	Establishments primarily engaged in the retail sale of pharmaceuticals to the population for prescribed and non-prescribed medicines. Usually, either the owner of a pharmacy or its employees must be a registered pharmacist, chemist or pharmacy doctor." (OECD, Eurostat, WHO, 2011; p. 144) OECD System of Health Accounts *Illustrative examples:* - Dispensing chemists. - Community pharmacies. - Independent pharmacies in supermarkets. - Pharmacies in hospitals that mainly serve outpatients. **Cross-references** Pharmacies integrated in hospitals that mainly serve inpatients are part of establishments classified under "Hospitals"; Specialised dispensaries where the continuous monitoring of compliance and treatment plays an important role (such as for diabetes patients) are classified under "Providers of ambulatory health care / Ambulatory health care centres" (e.g. Dialysis care centres, all other ambulatory centres); Dispensed medicines in doctors' offices are recorded under "Providers of ambulatory health care / Medical practices."
(B5.2) Retail sellers and other suppliers of durable medical goods and medical appliances (HP.5.2)	Establishments primarily engaged in the retail sale of durable medical goods and medical appliances such as hearing aids, optical glasses, other vision products and prostheses to the general public for individual or household use. This includes the fitting and repair provided in combination with sales. Also included are establishments primarily engaged in the

	manufacture of medical appliances such as prostheses, for the general public. (OECD, Eurostat, WHO, 2011; pp. 144-145). OECD System of Health Accounts *Illustrative examples:* - Retail sellers of glasses and vision products. - Retail sellers of hearing aids. - Suppliers of wheelchairs. - Providers of orthopaedic shoes, artificial limbs and other prosthetic devices. - Medical supply stores. *Note*: Examples of specialised professions of suppliers of vision products are opticians, ophthalmic opticians, optometrists and orthoptists. Professions of suppliers of hearing aids include audiologists, hearing aid technicians. Usually, hearing health care professionals are an integral part of the selection and delivery of appropriate hearing instruments. The supply of prostheses involves professions like medical and dental prosthetic technicians, orthodontic technicians and orthopaedic appliance makers.
(B5.3) All other miscellaneous sale and other suppliers of pharmaceuticals and medical goods (HP.5.9)	All other principal activity retail suppliers of medical goods to the general public not elsewhere classified." (OECD, Eurostat, WHO, 2011; p. 145) OECD System of Health Accounts *Illustrative examples:* - Cartridges, sale of fluids (e.g. for home dialysis). - All other suppliers of medical goods not otherwise classified delivering medical goods directly to consumers. - Electronic shopping and mail-order houses specialising in medical goods.
(B6) Providers of preventive care *[ICHA-HP HP.6]*	
Organisations providing collective preventive programmes and campaigns/public health programmes for specific groups of individuals or the population-at-large. Includes the promotion of healthy living conditions and lifestyles in schools by special outside health care professionals, agencies or organisations (see also HP.8.2)." (OECD, Eurostat, WHO, 2011; p. 145) OECD System of Health Accounts	

Illustrative examples: - Institutes of Occupational Medicines. - Local occupational health and safety networks/centres. - Public health institutes/departments (in case of major prevention activities). - Epidemiological surveillance and disease control centres. - Institutes administering health registers related to disease control programmes. - Institutes for communicable diseases. - Health promotion agencies. - Centres of public health education with activities involving the promotion of healthy lifestyles, healthy food and diets. - Local health authorities operating preventive health programmes. **Cross references** The provision of individual preventive screenings are recorded under *e.g.* HP.3.1 *Medical practices* or HP.4.2 *Medical and diagnostic laboratories.* If services are provided to inpatients this has to be classified under "***Hospitals***".	
(B7) Providers of health care system administration and financing *[ICHA-HP HP7.]*	
Establishments primarily engaged in the regulation of the activities of agencies that provide health care and in the overall administration of the health care sector, including the administration of health financing. (OECD, Eurostat, WHO, 2011; p. 146) OECD System of Health Accounts	
(B7.1) Government health administration agencies (HP.7.1)	Government administration (excluding social security) primarily engaged in the formulation and administration of government health policy, in the administration of health financing, and in the setting and enforcement of standards for medical and paramedical personnel Includes the regulation and licensing of providers of health services. Includes statistical institutes of a ministry of health (but not institutes administering population-based health registers) and public registers of health care providers. (OECD, Eurostat, WHO, 2011; p. 147) OECD System of Health Accounts *Illustrative examples:* - Ministry of Health. - Local and regional departments of the Ministry of Health.

	- Board of Health. - Drug regulation agencies, including law enforcement. - Agencies for the regulation of safety in the workplace. - Institute of Health System Information and other institutes affiliated with the Ministry of Health. - Local health authorities (in case of major administrative activities, such as law enforcement, licensing and registering providers). - Local centres for drug control inspections. - Local centres for medical device control. - Health care financing administration. **Cross references** Government health agencies mainly engaged in providing public health services, even if predominantly of a collective nature (surveillance, hygiene), are classified under "Other primary providers"(***Providers of preventive care***). *Note*: *Government administration of employee schemes.* Also includes administration of compulsory employer-based health insurance covering various groups of state employees (army, veterans, railroad and other public transport, police, state officials and so on in the case of separate financing schemes for these groups). It excludes universal social health insurance administration.
(B7.2) Social health insurance agencies (HP.7.2)	Agencies (sickness funds) that handle the administration of social health insurance schemes. Sickness funds may also provide the administration of employer's health insurance schemes not offered by the government. Also included is the administration of compulsory social health insurance covering various groups of state employees (army, veterans, railroad and other public transport, police, state officials, etc.). May also administer voluntary private health insurance schemes. Organisations subordinated to health insurance funds, like the Medical Advisory Boards, are also to be included." (OECD, Eurostat, WHO, 2011; p. 147) OECD System of Health Accounts *Illustrative examples*:

	- Administration of health insurance schemes of social insurance; - Administration of accident insurance schemes (health care part) of social insurance; - Administration of voluntary health insurance schemes of social insurance.
(B7.3) Private health insurance administration agencies (HP.7.3)	Private insurance corporations that may manage more than one type of health insurance scheme at the same time (e.g. compulsory private health insurance and voluntary health insurance). Includes establishments primarily engaged in activities consisting of or closely related to the management of insurance (activities of insurance agents, average and loss adjusters, actuaries and salvage administration). (OECD, Eurostat, WHO, 2011; p. 148) OECD System of Health Accounts *Illustrative examples:* - Private insurance corporations providing the administration of compulsory health insurance. - Private health insurance funds. - Agencies administering complementary health insurance (for example, a French mutualité) in the case of non-financial corporations. - Agencies administering employer private health insurance programmes (other than government social security and government health programmes for state employees).
(B7.4) Other administration agencies (HP.7.9)	Organisations or administrative units that cannot be clearly classified into the above categories. e.g. involved in the generation of financial sources as in the case of medical savings accounts. Also includes non-profit institutions serving households (other than social insurance). (OECD, Eurostat, WHO, 2011; p. 148)OECD System of Health Accounts *Illustrative examples* - NPISH that administer government health care financing schemes for special groups of the population, such as students. - Community-based voluntary health insurance managed by NPISH.

	Note: Excludes doctors associations; hospital associations; associations of the medical professions; and trade unions financed by fees from members, because they provide (intermediate) services to their members and not directly to patients.

(B8) Providers of long-term social care

Establishments of *long-term social care* are primarily engaged in providing assistance and social care type services for elderly and other persons unable to care for themselves and/or unwilling to live independently. Includes organisations that focus on social services that aim to prevent and combat the social isolation of persons with body or functional limitations. Instrumental activities of daily living (IADL), such as housekeeping, laundry, shopping, preparation of meals, help with financial activities, etc. can be provided both in residential settings and at home. (OECD, Eurostat, WHO, 2011; p. 150) OECD System of Health Accounts

Illustrative examples:

- Assisted-living facilities without on-site nursing care.
- Continuing-care retirement communities.
- Homes for the elderly without on-site nursing care.
- Home social care providers, e.g. specialised in IADL services, such as home care, meals-on-wheels, etc., with additional nursing care services.
- Community Alarm Services

Cross-references:

Health and long-term care services are captured by primary or secondary health care providers HP.1-HP.8.2.

(B9) Educational research settings not elsewhere classified

Non-profit institutions and institutions of higher education that are doing research and development and that can't be classified under the previous categories (e.g. hospitals).

Illustrative example:

- Research laboratories.

(B10) Other 3rd party providers not elsewhere classified

Establishments that are outside the health care provider universe and do not provide health care goods and services either to individuals or groups of the population, but which are

specialised in health-related activities and goods not classified above. This category also comprises establishments involved in health promotion with a multi-sectoral approach that might include various organisations that deal with a wide range of public safety measures.	
(B11) Further categories	
(B11.1) Community based	>> *only "Recruitment site/case identification"* *Illustrative examples:* - Public advertising/ presentations - Untargeted public advertising and presentation in the community - Press - Radio - Advertising campaign - Organisation/institution related recruitment (not classifiable elsewhere) - Senior centres / Day Service Centres - Community centres - Clubs - Churches
(B11.2) Population based registers	Using the addresses of public registers for recruiting participants. (e.g., via mailing or telephone) *Illustrative examples:* ▪ Voter registration lists ▪ Electoral roll [If for recruitment community based and population based strategies were used code only B11.1 (Community based)]
(B11.3) Participant's home	Interventions or procedures delivered in participant's home (including indoor, entrance and private outdoor).
(B11.4) Organisations & other locations in	>> *Only main site of delivery.*

the community	*Illustrative examples:* - Senior centres - Community centres - Clubs - Churches Not described under hospitals, nursing and residential care facilities and other provider of ambulatory health care.
(B11.5) Work environment	Place or physical location of work or employment as well as the immediate surroundings of the workplace, such as a construction site or office building.
(B11.6) Outdoor environment	Public outdoor environment. (Only a subcategory of "community based" within the domain "Recruitment Site/Case Identification". In the domain "Main site of delivery" this is a separate category)
(B11.7) Others	Others not described under B11.1-B11.6 Brief description (free text)
(B11.8) Not described	Source of case identification is not or incompletely described

Domain C: Components of outcome measures

Describes the components of the outcome measures used. **Includes who collects the measures and the methods used for collection.** **The outcome measures/tools actually used.**	
(C1) Outcome measures recorded / carried out by	
(C1.1) Professionals	A health or social care professional or clinical researcher who can work autonomously and possesses the skills required to carry out specialist outcome measurement. *e.g. social worker, physiotherapist, research nurse (must belong to a professional governing body).*

(C1.2) Trained non-professionals	Non-professionals trained by professional instructors in specific assessments/outcome measures. *e.g. Healthcare assistant, care worker, voluntary sector staff.*
(C1.3) Researcher	A non-clinically trained researcher carries out the outcome measures**.**
(C1.4) Self	Self-assessment carried out by the participant according standardised instruction or material (e.g. paper self-assessment/outcomes). Assessment/outcome measures are carried out by the participant or by the participant with assistance. *e.g. family member assists participant*.
(C1.5) Automated	Where the technology itself carries out the outcome measurement. *e.g. The person enters details and the computer provides an assessment.*
(C2) Medium of outcome measurement	
(C2.1) Face-to-face	e.g. appointment at home or in clinic / other health setting.
(C2.2) Paper-based	e.g. questionnaire or note taking.
(C2.3) Technology facilitated	e.g. teleconferencing, videoconferencing, or using a personal computer.
(C2.4) Technology led	e.g. automated collection of gait speed measurement.
(C3) Outcome measurement method	
(C3.1) Observation	Outcome measure is taken through observing the participant directly or through an ICT intervention.
(C3.2) Clinical assessment	An evaluation of a patient's physical condition and prognosis based on information gathered from physical and laboratory examinations and the patient's medical history. This is carried out by a trained clinician and may include any of the assessments/outcome measures above.

(C3.3) Validated assessment tool	A validated assessment tool may be used, either completed by a professional, non-professional or by the individual. Validity: does the instrument measure what it claims to measure?
(C3.4) Non-validated assessment tool	A tool or questions may be used which have not been checked for reliability and validity. Therefore, we do not know how robust the results would be. (Criteria for evaluating patient-based outcome measures.)
(C3.5) Self-report	No objective measure of outcome is used and the participants reports on their own outcomes. This would not use any pre-designed questions/tools. *e.g. Home exercise diary*
(C4) Outcome measurement implementation	
(C4.1) Comprehensive geriatric assessment	Comprehensive geriatric assessments: improve diagnostic accuracy, guide the selection of interventions to restore or preserve health, recommend an optimal environment for care, predict outcomes and monitor clinical change over time. Patient-centred, it is conducted by a core team that consists, at a minimum, of a physician, nurse, and social worker, each with special expertise in caring for older people. Frequently, a psychiatrist is a member of the core team. Also includes family members and other important persons in the individual's environment This interdisciplinary diagnostic process intended to determine an older person's physical and mental health, social and economic status, functional status and environmental characteristics in order to develop and implement a care plan. *(Source: National Institutes of Health. Consensus Development Conference Statement. October 19-21, 1987)*
(C4.2) Validated falls risk assessment	Fall risk assessment is a diagnostic process intended to determine an older person's risk of falling in order to plan coordinated treatment and long-term follow up. The fall risk assessment is sometimes performed in specialised settings like a fall clinic. The assessment includes methods that are specifically designed and tested for the assessment of the risk of falling (e.g.

	gait speed, static balance, strength, dual task measures, cardio-vascular assessments etc). *e.g. PPA (Physiological Profile Assessment)*
(C4.3) Attitudes towards technology	*e.g. Attitudes to Falls Related Intervention Scale (AFRIS) may be used before the use of technology and afterwards.*
(C4.4) Quality of Life	Often measures the following broad domains: physical health, psychological health, social relationships, and environment. A generic concept reflecting concern with the modification and enhancement of life attributes, e.g., physical, political, moral and social environment; the overall condition of a human life (MeSH: D011788).
(C4.5) Gait and balance	Assessments that determine the quality of gait and/or balance. *e.g. TGUG*
(C4.6) Overall physical function	Assessments which determine overall physical function, looks at multiple components of physical function. *e.g Short Physical Performance Battery (SPPB), functional grid.*
(C4.7) Physical activity	Assessment which considers the overall physical activity of an individual, normally related to physical activity guidelines and number of minutes the person is physically active. This could be assessed through self-reported questionnaires (*e.g. CHAMPS, IPAQ, Assessment of Physical Activity in Frail* Older People*; APAFOP*) or ICT interventions which monitor physical activity and movement. *e.g. At least 150 minutes (2 hours and 30 minutes) of* moderate-intensity aerobic activity *such as cycling or fast walking every week.*
(C4.8) Cardiovascular assessment	Assessment of basic cardiovascular status including heart rate and rhythm, postural pulse and blood pressure and, if appropriate, heart rate and blood pressure responses to carotid sinus stimulation. *(Source: AGS Panel of Falls Prevention, JAGS 2001).*
(C4.9) Psychological assessment	Psychological assessments in this area focus on fear of falling, or self-efficacy, or self-confidence measures. (e.g. FES-I).

(C4.10) Cognition	Cognitive assessment may be used to: (i) screen for cognitive impairment; (ii) differential diagnosis of cause; (iii) rating of severity of disorder, or monitoring disease progression. *e.g. MMSE, neurological assessment*
(C4.11) Medication review	Performing a comprehensive medication review to identify, resolve, and prevent medication-related problems, including adverse drug events with a special focus on medications associated with an increased fall risk (e.g. antipsychotics, sedatives, hypnotics, antidepressants, antiarrhythmics, anticonvulsants, anxiolytics, antihypertensives, diuretics).
(C4.12) Vision	Vision assessment (e.g. visual acuity, depth perception, contrast sensitivity, cataracts).
(C4.13) Foot assessment	Assessment of the foot, usually undertaken by a podiatrist or chiropodist. May include assessment of biomechanical alignment; pain; callus; footwear; peripheral neurological assessment.
(C4.14) ADL assessment	Assessment of ability to carry out activities of daily living (ADL) such as eating, continence, transferring, going to the toilet, dressing and bathing. *e.g. The Katz Index of Independence in Activities of. Daily Living.*
(C4.15) Environmental assessment	Environment (dwelling units): Includes formal home visit assessments schedules e.g. Housing Enabler. Environment (public) : Assessment of the hazards, safety and/or enabling features of the external environment such as footpath assessment. Environment (aids for personal care and protection): Assessment to determine the need for aids for personal care, including mobility aids, dressing aids. Protective aids include hip protectors and alarm systems.
(C4.16) Other outcome measures not described under C4.1 to C4.15.	Free text

Domain D: Descriptors

Describes each of the technologies delivered in the intervention (and control), including sub-classifications that are considered potentially important. **Technologies: Description of the technologies, including intervention components.** **Select the functions that are used in the study, not all potential functions of the device or system.** **Control group/s: Description of control group or sham interventions.**	
Description of Technologies: This section includes a description of the type of technology, the location and the application.	
(D1) Technology location	
(D1.1) Body worn or body fixed	*Body-worn* The device is worn on or near the body (e.g. trousers pocket). Small movements of the device relative to the body are possible and the sensor location can be changed over time. *Body-fixed* The device is attached to the body (e.g. by transparent film, neoprene belt). Movements of the device relative to the body are minimised. For data analysis it is important to categorise the possible sensor locations during recording (e.g. trouser pocket, jacket).
(D1.2) Located in the environment	Is located in the environment chosen, rather than moving around with the person.
(D1.3) Portable	Can be moved within the environment, but is not body worn, or body fixed.
(D2) Technology type	
(D2.1) SY (System)	A system is a set of interacting or interdependent components forming an integrated whole or a set of elements and relationships, which are different from relationships of the set or its elements to other elements or sets.

(D2.2) DE (Device)	A device is a mechanical or electronic piece of equipment made or adapted for a particular purpose and may include one or more sensors in order to produce a novel output based on a developed algorithm.
(D2.3) SE (Sensor)	A converter that measures a physical quantity and converts it into a signal which can be read by an observer or by an (mostly electronic) instrument.
(D2.4) AC (Actuator)	Converts a signal into a physical action. Actuators can be mechanical, electric, hydraulic and pneumatic (e.g. electric motor, LED light).
Systems	
(D2.1.1) Virtual reality	A platform that can generate a simulated environment which can be explored and interacted with by a user. The user becomes part of this virtual world or is immersed within this environment where they are able to manipulate objects or perform a series of actions through their own movements.
(D2.1.2) Robotics	A branch of technology that deals with the design, construction, operation, and application of robots. Where a robot is an electro-mechanical machine that is guided by a computer program or electronic circuitry
(D2.1.3) Personal emergency alarm	Personal Emergency Response Systems (PERS) to communicate alarm messages and are either operated by the user or activated automatically, in case of personal emergency. Included are, e.g., insulin alarms, seizure alarms for people with epilepsy, and fall alarms. (ISO: 22 27 18)
(D2.1.4) Wireless Sensor Networks	Consists of spatially distributed sensors autonomous sensors to monitor physical or environmental conditions such as temperature, sound, pressure, etc. and to cooperatively pass their data through the network to a main location. http://en.wikipedia.org/wiki/Wireless_sensor_network
(D2.1.5) Monitoring and positioning	Used for observing the status or location of a specific situation or a person

	Included are, e.g., global positioning systems (GPS). (ISO: 22 27 24)
(D2.1.6) Memory trainers	Assistive products designed to enhance the abilities that underlie reasoning and logical activities, e.g. memory, attention, concentration.
(D2.1.7) Automatic door	Opens and shuts the doors.
(D2.1.8) Automatic light	Switches the lights on and off.
(D2.1.9) Automatic windows	Opens and shuts the windows.
(D2.1.10) Gaming platform	Products designed to aid people to engage in recreational activities that follow fixed rules. However, also includes products designed to deliver exercise in a more recreational manner e.g. Wii, X-Box Kinect.
(D2.1.11) Environmental controllers	Included are, e.g., fire alarms and smoke-detectors, temperature all as one system.
(D2.1.12) Home automation	Complete system, which can include a range of devices (e.g. automatic light, automatic door, environmental controller).
(D2.1.13) Balance Platform technologies	Technologies for balance assessment and training.
(D2.1.14) Exercise and ergometer cycles	Stationary cycles for physical exercise. Included are, e.g., arm ergometer cycles and weight bearing treadmill systems. (ISO: 04 48 03)
(D2.1.15) Two-way communication	A form of transmission in which both parties involved can transmit and receive information in half or full-duplex mode.
(D2.1.16) Closed-circuit television	Closed systems for transmitting images with a camera to a recorder or direct displaying in remote location. (ISO: 22 18 18)
(D2.1.17) Portable computers/personal digital assistants (PDA)/smartphone	Computers that can be powered with batteries and thus can be used anywhere Included are, e.g., computers in combination with mobile phones such as smartphones. (ISO: 22 33 06)

Devices	
(D2.2.1) Blood pressure meters (sphygmomanometer)	Used to measure blood pressure.
(D2.2.2) Electrocardiograph (ECG)	A transthoracic (across the thorax or chest) interpretation of the electrical activity of the heart over a period of time, as detected by electrodes attached to the surface of the skin and recorded by a device external to the body.
(D2.2.3) Photoplethysmograph	Used to optically obtain a volumetric measurement of an organ. The trace generated by the device is called photoplethysmogram.
(D2.2.4) Scales	Weighing scales measure the weight or mass of an object.
(D2.2.5) Respiratory monitor	Measures the parameters related to the function of the ventilatory system of the body
(D2.2.6) Electrical stimulators	Used to send electrical signals to the body in order to provide a stimulus.
(D2.2.7) Digital diaries	Digital recording and reminder of events.
(D2.2.8) Timer switches	For controlling electrical devices that are programmed at set intervals of time (ISO: 24 09 30)
(D3.2.9) Climatic control	Controls the room climate only.
(D2.2.10) Sound recording and playing	For recording and the playback of sounds. (ISO: 22 18 03)
(D2.2.11) Video recording and playing	For saving and playing visual images and motion pictures on tape or other electronic media (ISO: 22 18 06)
(D2.2.12) Radio receivers	Included are, e.g., radio sets (ISO: 22 18 09)
(D2.2.13) Televisions	Included are, e.g., digital and high definition televisions. (ISO: 22 18 15)
Sensors	
(D2.3.1) Electrooculograph (EOG)	Measures the voltage between two electrodes placed on the face of a subject so it can detect eye movement.

(D2.3.2) Electromyography (EMG)	A technique for measuring and recording the electrical activity produced by skeletal muscles. EMG is performed using an instrument called an electromyograph, to produce a record called an electromyogram.
(D2.3.3) Heart rate monitor	Used to detect the heartbeat and records the heart rate.
(D2.3.4) Plethysmograph	Measures changes in volume within an organ or whole body
(D2.3.5) Accelerometer	Measures proper acceleration.
(D2.3.6) Gyroscope	Measures angular velocity.
(D2.3.7) Magnetometer	Measures the strength and direction of magnetic fields.
(D2.3.8) Barometric pressure sensor	Measures fluctuations in the pressure exerted by the atmosphere.
(D2.3.9) Thermometers	Measures temperature or temperature gradient.
(D2.3.10) Force sensor	Measures the force applied e.g. force plate.
(D2.3.11) Image Processor	Takes an image as an input with the output being an image or a set of characteristics or parameters related to the image.
(D2.3.12) Electrical muscle stimulation (EMS)	Performs elicitation of muscle contraction using electric impulses. Also known as neuromuscular electrical stimulation (NMES) or electromyostimulation.
(D2.3.13) Transcutaneous Electrical Nerve Stimulators (TENS)	Performs stimulation of the nerves for therapeutic purposes using electric current.
(D2.3.14) Pulse oximeter	Non-invasive photoplethysmograph that monitors the saturation of a users haemoglobin level.
(D2.3.15) Photoplethysmograph	Used to optically obtain a volumetric measurement of an organ.
(D2.3.16) Pedometer	Estimates the number of steps a person takes by detecting the motion of the person's body segment.
(D2.3.17) Pressure sensor	Measures the distribution of the force applied. e.g used in smart shoes.

(D3) Functionality: **Description of how the technology functions/pre-dominant function**	
(D3.1) Alert	Allows for emergency communication between the user and external assistance.
(D3.2) Monitoring	Performs continuous observation through body attached or environmental sensors which may be used for later analysis
(D3.3) Assessment	Performs a validated measurement of a user to allow for an evaluation to performed by an expert.
(D3.4) Persuasive	Interacts with the user through intentional communication motivated through the users interaction or observation.
(D3.5) Communication	A platform that allows information or messages to be transmitted from one user or location to another through a communication media.
(D3.6) Delivery	Delivers a direct intervention to the patient e.g. Exergame.
(D3.7) Automatic or manual?	Does the system automatically detect the user and record automatically, or does the user have to enter information / operate the system or device?
(D4) Method: **Method in which the technology interacts with the older adult (primary)**	
(D4.1) Sound	Pre-dominant interaction with user is through sound and noise.
(D4.2) Kinaesthetic	Pre-dominant interaction with user is through touch, vibration, pressure
(D4.3) Visual	Pre-dominant interaction with user is through visual methods
(D4.4) Other	Please state
(D5) Initial training/Instruction:	

The instructions given at the start of the intervention on the use of the equipment.	
(D5.1) Duration of contacts	Length of time, hours/minutes invested in training/instruction to use the technology.
(D5.2) Intensity of intervention	Specify how often the intervention / technology will be used.
(D5.3) Complexity of intervention	How challenging is the intervention? "Complexity of the intervention would for example be an exercise intervention, which involves a cognitive task that has a measurable effect on a person physiological complexity. Where the measurement of complexity is the evaluation of physiological signals using nonlinear dynamics." How many duel/multiple tasks does the participant complete?
(D6) Supervision/Follow-up contacts: **Details of the amount of follow-up.**	
(D6.1) Frequency of contacts	Number of contacts: Month/minutes:
(D7) Intervention utilisation: **Recording of participant use**	
(D7.1) Frequency of use	Number of times technology/intervention is used.
(D7.2) Timescale of use	Length of time technology/intervention used on each occasion and in total.
(D7.3) Duration	Weeks: Hours: Minutes:
(D8) Control Group(s)	
(D8.1) Control group described	There is a description of the control group.

(D8.2) No specific intervention	No special interventions for the control group.
(D8.3) Sham intervention	An intervention performed on a control group participant to ensure that he or she experiences the same incidental effects as those receiving the actual intervention.
(D8.4) Usual care	The control group receives usual care.
(D8.5) Healthy population	The control group is made up of members of the general population, who are not defined by a chronic disease, psychological or physiological condition.
(D8.6) Same intervention as intervention group (different population)	The control group have received the same intervention, but comprise a different population group. For example, the intervention group members have experienced falls and the control group members have not.
(D8.7) Comparator intervention	Another intervention for comparison purposes. Please specify intervention.
(D8.8) No control	There is no control group.

Domain E: Evaluation

Describes evaluation approach **Evaluation: Describes costs and usability of intervention**	
(E1) Costs – ensure costs are not counted in more than one category	
(E1.1) Initial costs of technology	Includes costs of hardware and software, the cost of acquiring the equipment and installation costs.
(E1.2) Monthly costs	Includes costs for renting or running the technology. Includes costs for internet service provision, call centre connection (if part of the intervention) and equipment hire.
(E1.3) Service costs for initial training	Includes development of training for users, including training staff to deliver training. Includes actual cost, or staff time taken to deliver the training to users.

(E1.4) Monthly service costs	Includes costs of ensuring that the technology operates correctly and costs of repairs to faulty equipment. Call out costs, staff costs, materials costs are all included.
(E1.5) Additional costs	Includes cost of data transfer to service provider, if applicable.
(E1.6) Cost savings	Has a health economic evaluation been undertaken? http://www.who.int/choice/publications/d_economic_impact_guide.pdf
(E2) Funding	
(E2.1) Funded within research project	Costs of the intervention (initial costs, equipment, training and monthly costs) are covered by the research project funding.
(E2.2) End user (total costs)	The end user (recipient of the intervention) pays for the intervention. This includes the initial costs for equipment and training, plus the monthly costs for equipment and service provision.
(E2.3) End user (share of total costs)	The end user (recipient of the intervention) pays a proportion of the total overall cost of the intervention, or pays for one or more aspects of it. For example, the end user does not pay for hardware or software development or installation, but pays for monthly running costs and service provision.
(E2.4) Public health care / statutory health care insurance	Funding for the intervention is provided either in part, or in full, by public health care (the NHS in the UK) or statutory health insurance agencies (Germany).
(E2.5) Social health insurance agencies	Funding for the intervention is provided either in part, or in full, by social health insurance agencies.
(E2.6) Private health insurance administration agencies	Funding for the intervention is provided either in part, or in full, by private health insurance agencies.
(E2.7) Community	Funding for the intervention is provided either in part, or in full, by community based services. See B11.1.
(E2.8) Hospital	Funding for the intervention is provided either in part, or in full, by hospital services. See B1.1.

(E2.9) Residential long-term (social) care facilities	Funding for the intervention is provided either in part, or in full, by a residential long-term social care facility. See B8.
(E2.10) Residential long-term (nursing) care facilities	Funding for the intervention is provided either in part, or in full, by a residential long-term nursing care facility. See B2.
(E2.11) Provider of ambulatory healthcare	Funding for the intervention is provided either in part, or in full, by a provider of ambulatory health care. See B3.
(E2.12) Combination of the above	Please specify.
(E2.13) Others	Funding for the intervention is provided either in part, or in full, by a service or organisation not included above.
(E3)Sustainability	
(E3.1) Long term access to technology	Is there evidence that this is a sustainable technological intervention, suitable for roll out?
(E4) Ethics	
(E4.1) Ethical issues	Have ethical issues been considered and addressed? e.g. privacy, confidentiality, withdrawal of the intervention. Are there ethical issues associated with the continuation or withdrawal of the intervention? (Not whether ethical approval has been granted, or not)
(E5) Stakeholder technology perceptions	
(E5.1) Physical dimension	"captures obtrusive effects associated with physical aspects of a technology and their effects on users or the home environment." (Hensel et al., 2006) Also includes positive aspects, such as attractiveness and unobtrusive nature of technology. *Illustrative examples:*

	- Functional (in)dependence - Discomfort or strain - Excessive noise - Obstruction or impediment in space - Aesthetic (in)congruence - Wearing comfort
(E5.2) Usability	"includes additional demands on time and effort associated with using a technology; for example, in learning how to use it and for its maintenance." (Hensel et al., 2006) Also includes ease of use. *Illustrative examples:* - User friendliness (or lack of) or accessibility - Additional demands on time and effort
(E5.3) Function	"captures concerns associated with how the equipment works, including its perceived reliability and effectiveness. Concerns about inaccurate measurement (of, e.g., vital signs) ..., functional attributes such as non-portability or limited power supply may restrict users to shortened distance or time away from home… users may perceive that a technology is not useful in meeting needs it was expected to meet." (Hensel et al., 2006) Also includes positive responses to the functionality of the technology, including enabling participants to increase their level of independence. *Illustrative examples:* - Malfunction or suboptimal performance - Accurate or inaccurate measurement - Restriction in distance or time away from home - Perception of usefulness or lack of usefulness
(E5.4) (Technical) support	Data on stakeholder satisfaction with services of the manufacturer or the distributor.

	Illustrative examples: - Instructions for using and implementing the technology - Troubleshooting when having problems with the technology (e.g. with hardware, software, communication, data analyses)
(E5.5) Data security and protection	The procession of personal data has to be in accordance with conditions of transparency, legitimate, and proportionality. This category includes furthermore the protection of data from unauthorised (accidental or intentional) modification, destruction, or disclosure.
(E5.6) Profitability	A measure of evaluating the overall efficiency of the business with the technology. Includes accounting profitability (net profit and net operational profit after taxation), social profitability and value added profitability (net value earned).
(E6) Participant perceptions:	
(E6.1) Device	
(E6.1.1) Physical dimension	"captures obtrusive effects associated with physical aspects of a technology and their effects on users or the home environment." (Hensel et al., 2006) Also includes positive aspects, such as attractiveness and unobtrusive nature of technology. *Illustrative examples:* - Functional (in)dependence - Discomfort or strain - Excessive noise - Obstruction or impediment in space - Aesthetic (in)congruence - Wearing comfort
(E6.1.2) Usability	"includes additional demands on time and effort associated with using a technology; for example, in learning how to use it and for its maintenance." (Hensel et al., 2006)

	Also includes ease of use and ease of access to an intervention (such as exercising as home). *Illustrative examples:* - user friendliness (or lack of) or accessibility - Additional demands on time and effort
(6.1.3) Privacy	*"Informational privacy* refers to the desire to control the sharing of personal information with others and may be violated when telehealth devices reveal more information than the user desires. *Physical privacy* is related to both the degree to which one is physically accessible to others and the accessibility of one's personal space or territory and may be violated when telehealth technology impinges on the user's control of such access." (Hensel et al., 2006) *Illustrative examples:* - Invasion of personal information - Violation of the personal space of home
(E6.1.4) Function	"captures concerns associated with how the equipment works, including its perceived reliability and effectiveness. Concerns about inaccurate measurement (of, e.g., vital signs). ... functional attributes such as non-portability or limited power supply may restrict users to shortened distance or time away from home. ...users may perceive that a technology is not useful in meeting needs it was expected to meet." (Hensel et al., 2006) Also includes positive responses to the functionality of the technology, including enabling participants to increase their level of independence, safety and outcomes and clear and timely feedback *Illustrative examples:* - Malfunction or suboptimal performance - (In)accurate measurement - Restriction in distance or time away from home - Perception of usefulness or lack of usefulness

(E6.1.5) Human interaction	"captures concerns about how a technology may negatively affect human interaction, response, or relationships. Home telehealth patients may fear technology replacing in-person interaction with their health care providers. Family caregivers may fear that this will mean greater burden for providing care is placed on them. Focus groups about smart home technology revealed a concern about human response or assistance, that there might be "nobody at the other end. . .to react to the information." Finally, users may worry about a technology affecting friendships or other valued relationships." (Hensel et al., 2006) Also includes additional human interactions enabled by use of technology (e.g. personal emergency response systems). *Illustrative examples:* - Threat to replace in person visits - (Lack of) human response in emergencies - Detrimental effects on relationships Positive effects on relationships, increased social interaction and also increased motivation as a result.
(E6.1.6) Self-concept	"A technology may be perceived as obtrusive because of its effect on or meaning for self-concept: "the concept the individual has of himself as a physical, social, and spiritual or moral being." This dimension includes the psychological aspect of dependence (as distinguished from *functional dependence*, above, which focuses on the physical aspect of dependence). Assistive technology may be viewed as "a mechanism by which to regain independent performance, or as a symbol of lost function and abilities." In addition to self-evaluation, what others may think is also important to self-concept. The literature includes examples of people with assistive devices being treated differently by others as well as users' fears of embarrassment or stigmatization for needing such devices." (Hensel et al., 2006). May also include increased self-concept and self efficacy, described as self-efficacy is a self judgment of one's ability to perform a task within a specific domain (Bandura, 1982). *Illustrative examples:*

	- Symbol of loss of independence - Cause of embarrassment or stigma - Increases confidence and self-efficacy.
(E6.1.7) Routine	"The use of telehealth technology in the home may affect users' daily routines or rituals and/or require the acquisition of new ones. ... It is assumed that telehealth technology brought into the home could be perceived as obtrusive to personal routines in the same way." (Hensel et al., 2006) *Illustrative examples:* - Interference with daily activities - Acquisition of new rituals
(E6.1.8) Sustainability	"This dimension includes user concerns about sustaining use of a technology. In this context, users are worried that for some reason, including affordability or their own functional ability, they will not be able to keep or use the technology into the future. Concerns about sustainability may be perceived as obtrusive when users believe they need to keep using a technology but are anxious that circumstances may not allow this." (Hensel et al., 2006)
(E6.1.10) Control	Perceptions of control of the use of systems. e.g. they have the ability to stop a false alarm. Choice about when and where a video camera was used.
(E6.2) Service satisfaction	
(E6.2.1) Service satisfaction	Data on the participant or end-user satisfaction with services: *Illustrative examples:* - The service delivery program when attaining the technology (procedures, length of time) - Continuing follow-up and support services - Maintenance of the technology (repairs, servicing, additional costs) - The quality of the professional services (information, attention and accessibility).

	[Examples relate to the service dimensions of the Qebec User Evaluation of Satisfaction with Assistive Technology (Demers, Weiss-Lambrou and Ska, 2002)]
(E7) Participant adherence	
(E7.1) Adherence	Includes use of the technology and/or adherence to the intervention delivered by the technology. For example, frequency of use (related to set parameters *e.g. carrying out programme 3 times a week*), Whether they continue to use technology/carry out the intervention or drop-out. Whether they comply with the use of the technology *e.g. wear the falls detector.* May also include qualitative feedback from participants on why they did/did not adhere (considering categories above).

Section 3: The Taxonomy

The following pages present the domains of the taxonomy extracted from the Excel spreadsheets that have been developed as part of WP2's work. The taxonomy can be used as a tick box selection exercise, using the pages presented here, or by completing the online tool. The partners involved in WP2's development of the taxonomy intend for the online tool to provide a simpler, more intuitive way in which to research studies and papers.

Front sheet:

Country of origin of paper/study:	
Are you categorising:	
Existing paper	
Please state:	
Planned study / protocol	

Second sheet:

Domain A: Approach		
A1	**Primary aim of the intervention (dominant aim)**	
	Health related aims:	
A1.1	**To prevent falls (reduce the incidence of falls)**	
A1.2	**To reduce fall related injuries**	
A1.3	**To detect falls**	
A1.4	**To assess falls risk**	
A1.5	**To predict individual falls**	
A1.6	**To monitor function / physical activity and participation in activity**	
A1.7	**To improve function / physical activity and participation in activity**	
A1.8	**To promote independence**	
A1.9	**To undertake technological development**	
A1.10	**To optimise health/social care resource/use**	
A1.11	**To improve and assess psycho/social outcomes**	
A1.12	**Others**	***Free text***
Technology development:		
Please complete technology section only, to describe technology as accurately as possible		
A2	**Study design**	
A2.1	**Design**	
A2.1.1	**RCT (includes all randomised designs) - drop down list possible on electronic version**	
A2.1.2	**Observational studies (cohort, case control)**	
A2.1.3	**Cross sectional**	

A2.1.4	Quasi-experiments	
A2.1.5	Qualitative Evaluation	
A2.1.6	Feasability study	
A2.1.7	Mixed Methods (any combination of the above)	*Free text*
A2.2	Intervention type	
A2.2.1	Single intervention	
A2.2.2	Multiple intervention	
A2.2.2	Multifactoral intervention	
A3	Main selection criteria	
A3.1	Population approach	
A3.1.1	Age only specified population	
A3.1.2	Developmental population	
A3.1.3	Patients/users of service	
A3.2	Demographics	
A3.2.1	Age group	
A3.2.2	Female only	
A3.2.3	Male only	
A3.2.4	Selected on basis of demographic characteristics	
A3.2.5	Previous fall history - state single or multiple	
A3.2.6	Sedentary	
A3.2.7	Underactive	
A3.2.8	Screening tool	
A3.2.9	Others	*Free text*
A3.3	Chronic diseases, symptoms, impairments	
A3.3.1	Osteoporosis / osteoporotic (bone fragility) fractures	
A3.3.2	Parkinson's disease/syndrome	
A3.3.3	Cerebrovascular disorders	
A3.3.4	Eye diseases, visual impairments	
A3.3.5	Dementia, cognitive impairment	
A3.3.6	Depression symptoms	
A3.3.7	Syncope	
A3.3.8	Gait and/or balance impairment	
A3.3.9	Urinary Incontinence	
A3.3.10	Diabetes	
A3.3.11	Obesity	
A3.3.12	Others	*Free text*
A3.4	Medication specific	
A3.5	Specific environments or living conditions	*Free text*
A3.6	Specific groups excluded	
A3.6.1	Requires walking aid	
A3.6.2	Cognitive impairment	
A3.6.3	Other specified exclusion	*Free text*
A3.6.4	No selection criteria specified	
A4	Sampling method	
A4.1	Convenience sample	

A4.2	**Random sample from population**	
A4.3	**Cluster sampling**	
A4.4	**Snowball sampling**	

Third sheet:

Domain B: Base 1		
	Recruitment site / case identification	
B1	**Primary health care providers**	
B1.1	**Hospitals**	
B1.1.1	Acute	
B1.1.2	Emergency department	
B1.1.3	Subacute (e.g. rehabilitation)	
B2	**Residential long-term (nursing) care facilities**	
B2.1	Long-term nursing care facilities	
B2.2	Mental health and substance abuse facilities	
B2.3	Other residential long-term care facilities	
B3	**Provider of ambulatory health care**	
B3.1	Medical practices	
B3.2	Offices of general medical practitioners	
B3.2	Offices of mental health medical specialists	
B3.4	Offices of medical specialists (other than mental medical specialists)	
B3.5	Other health practitioners	
B3.6	Ambulatory health care centres	
B3.7	Ambulatory mental health and substance abuse centres	
B3.8	Free-standing ambulatory surgery centres	
B3.9	Dialysis care centres	
B3.10	All other ambulatory centres	
B3.11	Providers of home health care services	
B4	**Other primary health care providers**	
B4.1	Providers of patient transportation and emergency rescue	
B4.2	Medical and diagnostic laboratories	
B4.3	Other providers of ancillary services	
B5	**Retailers and providers of medical goods**	
B5.1	Pharmacies	
B5.2	Retail sellers and other suppliers of durable medical goods and medical appliances	
B5.3	All other miscellaneous sale and other suppliers of pharmaceuticals and medical goods	
B6	**Providers of preventive care**	
B7	**Providers of health system administration and financing**	

B7.1	Government health administration agencies	
B7.2	Social health insurance agencies	
B7.3	Private health insurance administration agencies	
B7.4	Other administration agencies	
B8	**Establishments of long-term social care**	
B9	**Educational research setting**	
B10	**Other 3rd party providers not elsewhere classified**	
B11	**Further categories**	
B11.1	Community based	
B11.2	Population based registers	
B11.3	Participant's home	
B11.4	Organisations and other locations in the community	
B11.5	Work environment	
B11.6	Outdoor environment	
B11.7	Others	*Free text*
B11.8	Not described	

Fourth sheet:

Domain B: Base 2			
	Main Site of delivery	**End-user/consumer related (part of) technology is located/used**	**Service provider is located**
	Kind of service provider		
B1	**Primary health care providers**		
B1.1	**Hospitals**		
B1.1.1	Acute		
B1.1.2	Emergency department		
B1.1.3	Subacute (e.g. rehabilitation)		
B2	**Residential long-term (nursing) care facilities**		
B2.1	Long-term nursing care facilities		
B2.2	Mental health and substance abuse facilities		
B2.3	Other residential long-term care facilities		
B3	**Provider of ambulatory health care**		
B3.1	Medical practices		
B3.2	Offices of general medical practitioners		
B3.2	Offices of mental health medical specialists		
B3.4	Offices of medical specialists (other than mental medical specialists)		
B3.5	Other health practitioners		

B3.6	Ambulatory health care centres		
B3.7	Ambulatory mental health and substance abuse centres		
B3.8	Free-standing ambulatory surgery centres		
B3.9	Dialysis care centres		
B3.10	All other ambulatory centres		
B3.11	Providers of home health care services		
B4	**Other primary health care providers**		
B4.1	Providers of patient transportation and emergency rescue		
B4.2	Medical and diagnostic laboratories		
B4.3	Other providers of ancillary services		
B5	**Retailers and providers of medical goods**		
B5.1	Pharmacies		
B5.2	Retail sellers and other suppliers of durable medical goods and medical appliances		
B5.3	All other miscellaneous sale and other suppliers of pharmaceuticals and medical goods		
B6	**Providers of preventive care**		
B7	**Providers of health system administration and financing**		
B7.1	Government health administration agencies		
B7.2	Social health insurance agencies		
B7.3	Private health insurance administration agencies		
B7.4	Other administration agencies		
B8	**Establishments of long-term social care**		
B9	**Educational research setting**		
B10	**Other 3rd party providers not elsewhere classified**		
B11	**Further categories**		
B11.1	Community based		
B11.2	Population based registers		
B11.3	Participant's home		
B11.4	Organisations and other locations in the community		
B11.5	Work environment		
B11.6	Outdoor environment		
B11.7	Others	*Free text*	
B11.8	Not described		

Fifth sheet:

Domain C: Components of outcome measures

C1	**Outcome measures recorded / carried out by:**	
C1.1	Professionals	
C1.2	Trained non-professionals	
C1.3	Researcher	
C1.4	Self	
C1.5	Automated	
C2	**Medium of outcome measurement**	
C2.1	Face-to-face	
C2.2	Paper based	
C2.3	Technology facilitated	
C2.4	Technology led	
C3	**Outcome measure method**	
C3.1	Observation	
C3.2	Clinical assessment	
C3.3	Validated assessment tool	
C3.4	Non-validated assessment tool	
C3.5	Self-report	
C4	**Outcomes measured by (state tool used)**	
C4.1	Comprehensive geriatric assessment	
C4.2	Validated falls risk assessment	
C4.3	Attitudes towards technology	
C4.4	Quality of life	
C4.5	Gait and balance	
C4.6	Overall physical function	
C4.7	Physical activity	
C4.8	Cardiovascular assesment	
C4.9	Psychological assessment	
C4.10	Cognition	
C4.11	Medication review	
C4.12	Vision	
C4.13	Foot assessment	
C4.14	ADL assessment	
C4.15	Environmental assessment	
C4.16	Other outcome measures not described	*Free text…*

Sixth sheet:

Domain D: Descriptors		
	Description of technologies	
D1	**Technology location**	
D1.1	Body worn or body fixed	
D1.2	Located in the environment	
D1.3	Portable	
D2	**Technology type**	
D2.1	SY (System)	
D2.2	DE (Device)	
D2.3	SE (Sensor)	
D2.4	AC (Actuator)	
		If information is appropriate and available

	Technology application Select the overarching system, plus all individual devices, sensors or actuators (components).	Make & Model	Sampli-ng rate	Range of measureme-nt	Sensor charact-eristic	Processor
	Systems					
D2.1.1	Virtual reality					
D2.1.2	Robotics					
D2.1.3	Personal emergency alarm					
D2.1.4	Wireless Sensor Networks					
D2.1.5	Monitoring and positioning					
D2.1.6	Memory trainers					
D2.1.7	Automatic door					
D2.1.8	Automatic light					
D2.1.9	Automatic windows					
D2.1.10	Gaming platform					
D2.1.11	Environmental controllers					
D2.1.12	Home automation					
D2.1.13	Balance platform technologies					
D2.1.14	Exercise and ergometer cycles					
D2.1.15	Two-way communication					
D2.1.16	Closed-circuit television					
D2.1.17	Portable computers / personal digital assistants (PDA) / Smartphone					
	Devices					
D2.2.1	Blood pressure meters (sphygmomanometer)					
D2.2.2	Electrocardiograph (ECG)					
D2.2.3	Photoplethysmograph					
D2.2.4	Scales					
D2.2.5	Respiratory monitor					
D2.2.6	Electrical stimulators					
D2.2.7	Digital diaries					
D2.2.8	Timer switches					
D2.2.9	Climatic control					
D2.2.10	Sound recording and playing					
D2.2.11	Video recording and playing					
D2.2.12	Radio receivers					
D2.2.13	Televisions					
	Sensors					
D2.3.1	Electrooculograph (EOG)					
D2.3.2	Electromyography (EMG)					
D2.3.3	Heart rate monitor					
D2.3.4	Plethysmograph					
D2.3.5	Accelerometer					
D2.3.6	Gyroscope					
D2.3.7	Magnetometer					
D2.3.8	Barometric pressure sensor					

D2.3.9	Thermometers					
D2.3.10	Force sensor					
D2.3.11	Image processor					
D2.3.12	Electrical muscle stimulation (EMS)					
D2.3.13	Transcutaneous electrical nerve stimulators (TENS)					
D2.3.14	Pulse oximeter					
D2.3.15	Photoplethysmograpgh					
D2.3.16	Pedometer					
D2.3.17	Pressure sensor					
D3	**Functionality**					
D3.1	Alert					
D3.2	Monitoring					
D3.3	Assessment					
D3.4	Persuasive					
D3.5	Communication					
D3.6	Delivery					
D3.7	Automatic or manual?					
D4	**Method**					
D4.1	Sound					
D4.2	Kinaesthetic					
D4.3	Visual					
D4.4	Other					
D5	**Initial training / instruction**					
D5.1	Duration of contacts					
D5.2	Intensity of intervention					
D5.3	Complexity of intervention					
D6	**Supervision / follow up contacts**					
D6.1	Frequency of contacts					
D7	**Intervention utilisation**					
D7.1	Frequency of use					
D7.2	Timescale of use					
D7.3	Duration					
Repeat sections D1-D8 for all arms of the study						
D8	**Control Group(s)**					
D8.1	Control group described					
D8.2	No specific intervention					
D8.3	Sham intervention					
D8.4	Usual care					
D8.5	Healthy population					
D8.6	Same intervention as intervention group (different population)					
D8.7	Comparator intervention					
D8.8	No control					

Seventh sheet:

Domain E: Evaluation				
E1	**Costs**			
E1.1	Initial costs of technology itself (hard- and software)			(£/$/€)
E1.2	Monthly costs for renting or running the technology			(£/$/€)
E1.3	Service costs for initial training			(£/$/€)
E1.4	Monthly service costs			(£/$/€)
E1.5	Additional costs			(£/$/€)
E1.6	Cost savings			(£/$/€)
E2	**Funding**			
E2.1	Funded within research project			
E2.2	End-user (total costs)			
E2.3	End-user (share of total costs)			
E2.4	Public health care / statutory health care insurance			
E2.5	Social health insurance agencies			
E2.6	Private health insurance administration agencies			
E2.7	Community			
E2.8	Hospital			
E2.9	Residential long-term (social) care facilities			
E2.10	Residential long-term (nursing) care facilities			
E2.11	Provider of ambulatory health care			
E2.12	Combination of the above			
E2.13	Others			*Free text*
E3	**Sustainability**			
E3.1	Long term access to technology			
E4	**Ethics**			
E4.1	Ethical issues			
E5	**Stakeholder technology perceptions**			
E5.1	Physical Dimension			
E5.2	Usability			
E5.3	Function			
E5.4	(Technical) support			
E5.5	Data protection and security			
E5.6	Profitability			
E6	**Participant perceptions**			
E6.1	**Device**			
E6.1.1	Physical Dimension (incl. wearing comfort)			
E6.1.2	Usability			
E6.1.3	Privacy			
E6.1.4	Function			
E6.1.5	Human interaction			
E6.1.6	Self-concept			
E6.1.7	Routine			
E6.1.8	Sustainability			

E6.2	**Service satisfaction**	
E6.2.1	Service satisfaction	
E7	**Participant adherence**	
E7.1	Adherence	

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