



# Il “modello Galliera” per un invecchiamento attivo ed in salute

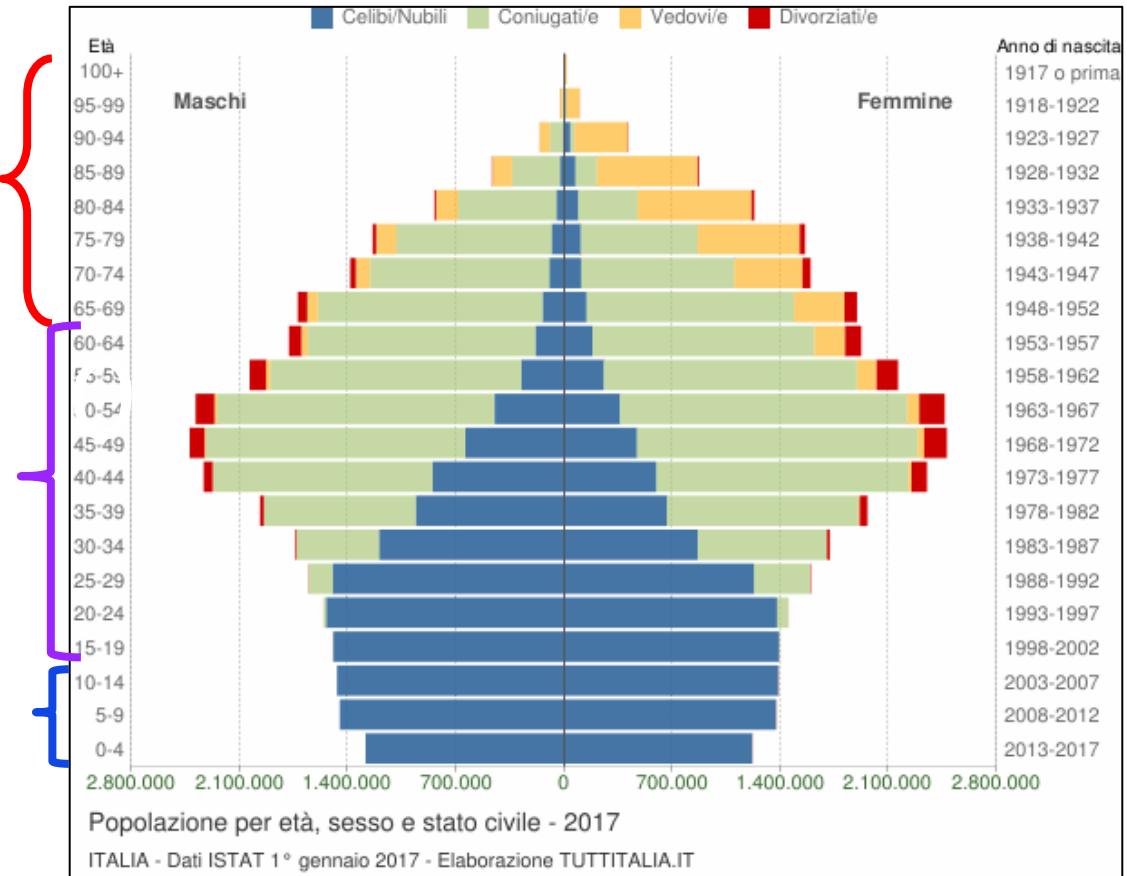
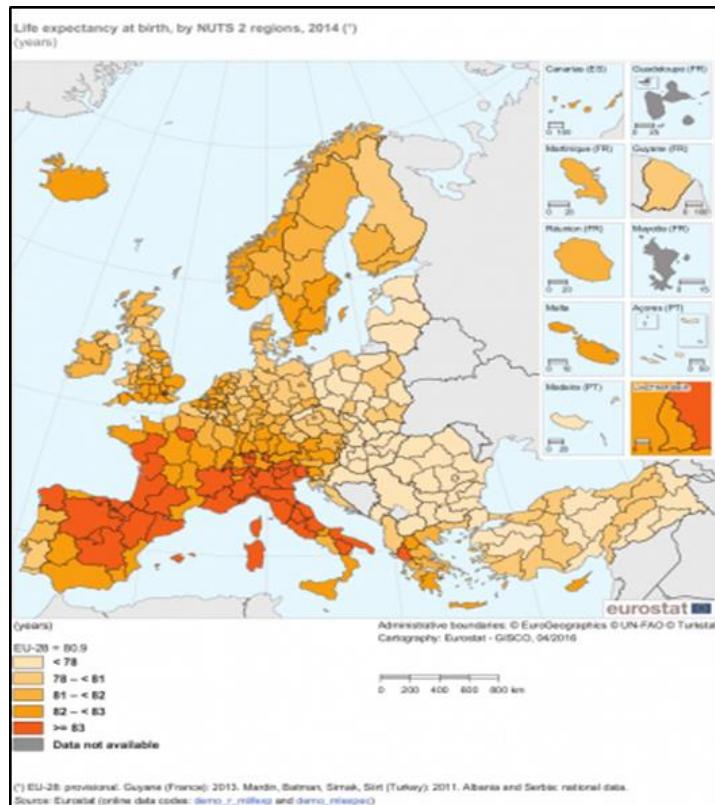




# EU Innovation Partnership on Active and Healthy Ageing



EIP on AHA



# Healthy Life Years at age 65

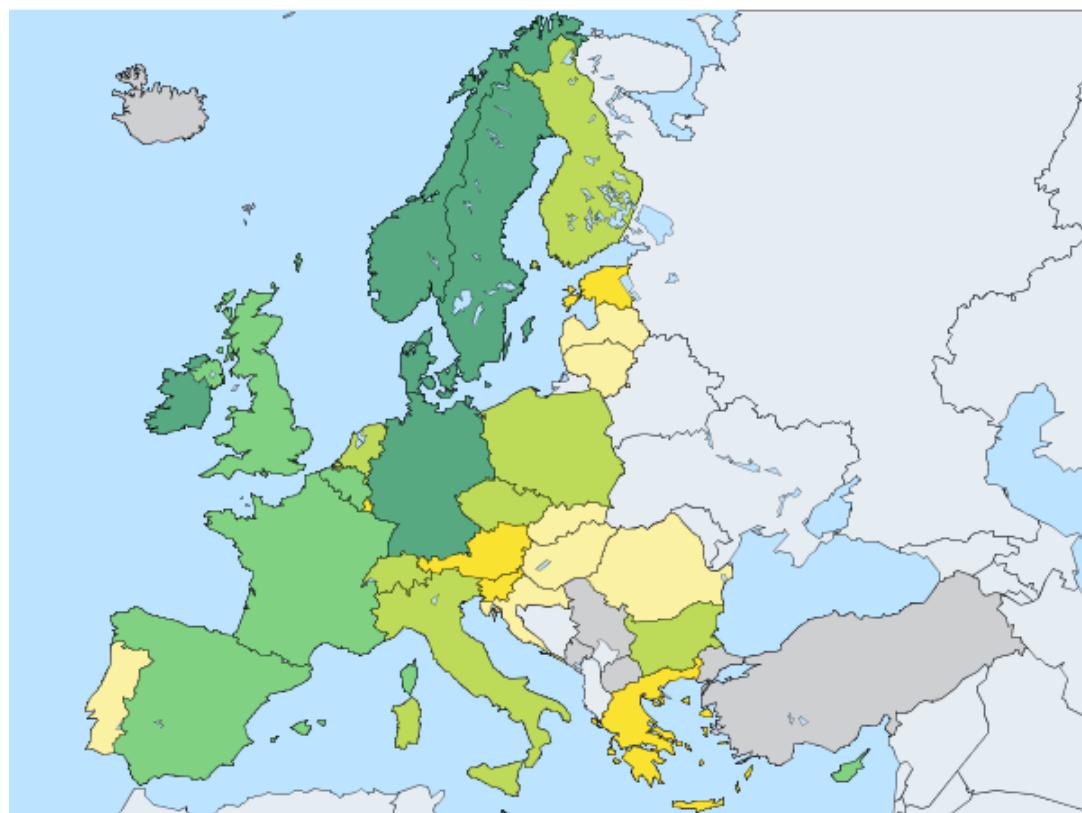
F 2015 2016 M 2015 2016

	F 2015	2016	M 2015	2016
Belgium	11	11.4	11.2	10.3
Bulgaria	9.5	10.1 (B)	8.7	9.2 (B)
Czech Republic	8.6	8.9	8	8.4
Denmark	11.9	11.9	11	11.5
Germany	12.3 (B)	12.4	11.4 (B)	11.5
Estonia	8.3	7	8.3	8.5
Ireland	12	13.2	11.4	12
Greece	7.5	7.8	7.9	8
Spain	8.9	10.4	9.5	10.4
France	10.7	10.8	9.8	9.5
France (metropolitan)	:	:	:	:
Croatia	4.5	4.9	4.7	5.2
Italy	7.8	10.1 (B)	7.8	10.4 (B)
Cyprus	7.3	10.3	8.4	11.2
Latvia	4	4.5	4.1	4.4
Lithuania	5.5	5.8	5	5.8
Luxembourg	8.7	8 (B)	10.7	9.5 (B)
Hungary	5.9	6.4	5.9	6.7
Malta	14	12.9	13.4	12.8
Netherlands	9.4	9.9 (B)	10.5	10.3 (B)
Austria	7.7	7.4	7.9	8.2
Poland	8.4	8.9	7.8	8.2
Portugal	5.4	6.4	7	7.7
Romania	5.7	5.8	6.3	6.2
Slovenia	7.8	8.2	8.2	8.4
Slovakia	3.8	4.2	4.1	4.5
Finland	9	8.9	9.3	9.4
Sweden	16.8	16.6	15.7	15.1
United Kingdom	10.4	11.1	10.2	10.4
Iceland	15.1	:	15.5	:
Liechtenstein	:	:	:	:
Norway	15.3	15.2	15.3	15.4
Switzerland	:	9.8	:	10.1

Healthy life years and life expectancy at age 65 by sex

Years - 2016

Healthy life years in absolute value at 65 – females  
Healthy life years in absolute value at 65 – females



Legend

4.2 - 6.4

6.4 - 8.2

8.2 - 10.1

10.1 - 11.4

11.4 - 16.6

Not available

# Demographics data: January 1, 2018

	Eu-28*	Italy^	Liguria^
Population	510.300.000	60.589.445	1.565.307
≥ 65 years (%)	19.2	22.6	28.4
≥ 80 years (%)	5.5	6.8	9.5
Aging Index	127.7	168.7	252.3
Aging Dependency Index	29.9	34.8	47.1
Life Expectancy at birth (years)	M	80.6	80.5
Life Expectancy at 65 years		19.0	18.9
Life Expectancy at birth	F	84.9	85.0
Life Expectancy at 65 years		22.2	22.4

# “FRAIL Project- Genoa, Italy”

A Prospective Study in 405 Community-dwelling Older Subjects - Genoa, Italy

**Prevalence of pre-frail / frail**

<b>33.3</b>	<b>/ 11.6% (1)</b>
<b>27.2</b>	<b>/ 10.4% (2)</b>

(1) CHS ‘phenotype’, Fried 2001 (2) FRAIL scale, Morley 2011

	Odds Ratio	95%CI	p
Sex	1.84	0.93-3.62	0.078
Age	1.02	0.94-1.10	0.687
Gait speed	0.31	0.08-1.16	0.083
Barthel Index	0.54	0.42-0.71	0.000
Education	0.93	0.87-0.99	0.046
CIRS (severity)	29.15	7.01-121.14	0.000
Total dietary protein	0.44 *	0.22-0.84	0.01
Dairy products	0.40 *	0.21-0.77	0.006
Meat/fish/poultry	0.38 *	0.20-0.74	0.004



CIRS: Cumulative Illness Rating Scale

\* Frail + Pre-frail vs Robust; Binary Logistic regression, stepwise backward

In November 2010, the EU adopted a European **disability strategy** for the period 2010-2020

The EIP-AHA aims, by 2020, to increase the average healthy lifespan of EU citizens by two years, through:

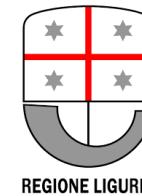
- 1) improving health and quality of life;**
- 2) ensuring health and social care systems are sustainable and efficient;**
- 3) creating growth and market opportunities for business.**

This partnership involves **cooperation** between the EC, EU Member States, regions, industry, health and social care professionals and organisations representing older people and patients.



European Innovation  
Partnership on Active  
and Healthy Ageing

REFERENCE SITE



REGIONE LIGURIA

Galliera Hospital

«Reference Regional Hospital  
for Geriatric Care/Orthopedics»

- 1. Progetto “Memory Training”**
- 2. MPI\_AGE Project (Project Leader)**
- 3. EUROS AF (PI & Coordinator Center)**
- 4. Sunfrail Project (Associate Partner)**
- 5. EFFICHRONIC Project (WP Leader)**
- 6. MULTIPLAT\_AGE Project (PI & Coordinator Center)**



Ospedale di rilievo nazionale e di alta specializzazione



Consumers, Health,  
Agriculture, and Food  
Executive Agency  
*Chafea*



REGIONE DEL VENETO



# MPI<sup>+</sup>:Age

## Using Multidimensional Prognostic Indices (MPI) to improve cost-effectiveness of interventions in multimorbid frail older persons

*Start Meeting Luxembourg, 26.03.2014  
Final Event – Venice & Genoa, 7-8 June 2017*



Intramural Research  
Program  
National Institute  
on Aging  
National Institutes of Health

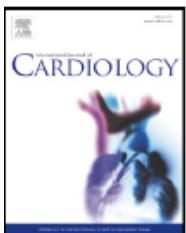


Bulgarian Association  
on Ageing

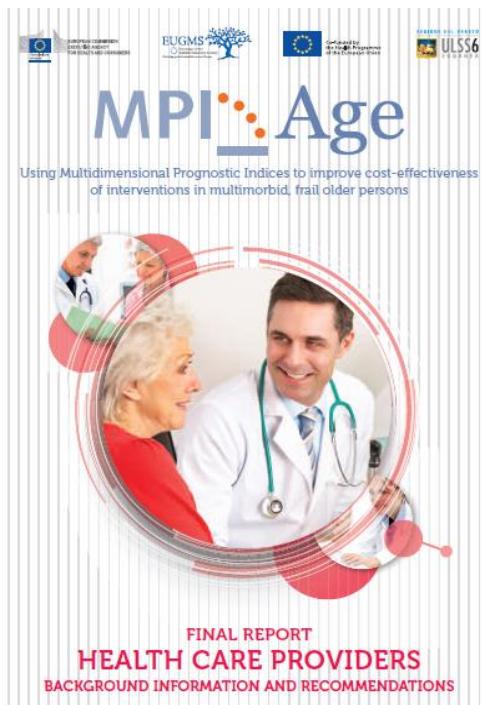


## SCIENTIFIC ACTIVITIES of MPI\_AGE

*20 articles in international  
journals, more than 50  
abstracts/communications*



Three sets of  
Recommendations  
based on MPI\_AGE  
project



website and  
social media

<http://www.mpiage.eu>



Mpi\_Age



Co-funded by  
the Health Programme  
of the European Union

## Statin Use and Mortality

😊 1712 patients with Diabetes Mellitus M=43.2%, mean age=81.1±7.3



Pilotto et al, PlosOne 2015; DOI:10.1371/journal.pone.0130946

😊 2597 patients with CAD mean age=83.9±7.3, Follow-up 3.2±2.1 years



Pilotto et al, Am J Cardiol 2016 Dec 1; 118: 1624-30

## Anticoagulants and Mortality

😊 1827 subjects with atrial fibrillation Age=84.4±7.1, FU 3.0 years



Pilotto et al, J Am Geriatr Soc 2016 Jul; 64(7): 1416-24

## Anti-dementia drugs and Mortality

😊 6818 subjects with dementia, F 70.5%, Age=84.1±6.9, FU 2.2±2.1 yrs



Pilotto et al. J Am Med Dir Assoc 2018 Feb; 19 (2): 162-168

# MPI and 1-year outcomes

N°patients=1069 F=60.8%, mean age = 84.1±7.4 years; 1-year mortality 26.6% (285 p.ts)



	Home-care services			Nursing-home care		Hospital Re-admission	
	N°	OR	95%CI	OR	95%CI	OR	
<b>MPI 1</b>	<b>167</b>	<b>1</b>	<b>Ref.</b>	<b>1</b>	<b>Ref.</b>	<b>1</b>	<b>Reference</b>
<b>MPI 2</b>	<b>482</b>	<b>2.4</b>	<b>1.5-4.0</b>	<b>2.2</b>	<b>1.3-3.8</b>	<b>1.8</b>	<b>1.3 - 2.7</b>
<b>MPI 3</b>	<b>413</b>	<b>1.8</b>	<b>1.1-3.0</b>	<b>1.7</b>	<b>0.9-2.9</b>	<b>1.6</b>	<b>1.1 - 2.3</b>

**Conclusion.** MPI is a significant predictor of post-discharge outcomes, i.e. access to home-care services, admission to nursing homes and re-hospitalization.

# Multimorbidity: clinical assessment and management

Multimorbidity: assessment, prioritisation and management of care for people with commonly occurring multimorbidity

National Guideline Centre

Final

*NICE guideline NG56*

*Methods, evidence and recommendations*

*September 2016*

## 7.5 Life expectancy risk tools

**7.5.1 Review question: What risk tool best identifies people with multimorbidity who are at risk of reduced life expectancy?**

### 7.5.5 Evidence statements

#### Inpatient

Guideline Development Group identified 5 tools that demonstrated moderate accuracy in predicting reduced life expectancy:

- Burden of Illness Score for Elderly Persons (BISEP)
- Charlson Comorbidity Index – Romano version
- **Multidimensional Prognostic Index (MPI)**
- PROFUND Index
- Prognostic Index



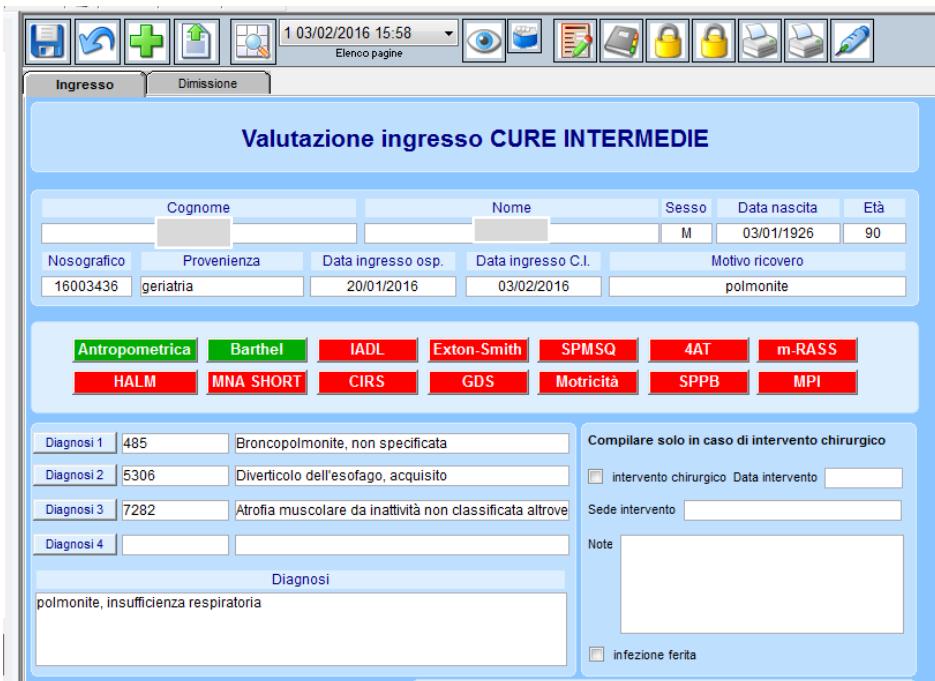
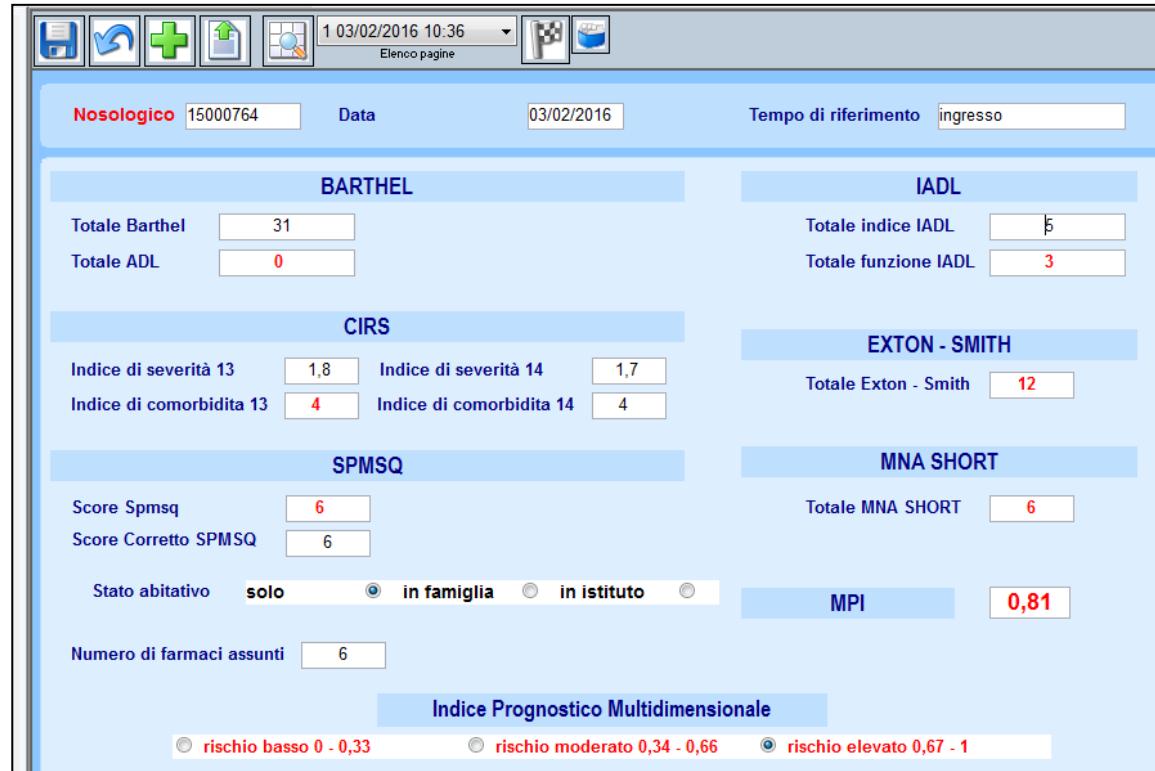
9 January 2018  
EMA/CHMP/778709/2015  
Committee for Medicinal Products for Human Use (CHMP)

EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH

## Reflection paper on physical frailty: instruments for baseline characterization of older populations in clinical trials

- It is recognized that a complete evaluation of frailty to support its management requires a multidimensional interdisciplinary Comprehensive Geriatric Assessment (CGA), which is the ‘gold standard’ in clinical practice
- the **Multidimensional Prognostic Index (MPI)** is able to extract information from CGA to categorize frailty in three subgroups with excellent prognostic value

## Integrated Geriatric Clinical Record for physicians and nurses

**CGA** → **MPI**

## EUROSAF Study

**(The EURopean study of Older Subjects with Atrial Fibrillation)**

**Evaluating The Efficacy And Risks Of Anticoagulant Treatments  
In Multimorbid Frail Older Subjects With Atrial Fibrillation**

## METHODS

Cross-national, prospective, observational study

3.000 AF older subjects (~30 Geriatrics Units, 15 Countries)

- older patients  $\geq 65$  years
- admitted to hospital for acute or relapse of chronic disease
- documented diagnosis of non-valvular AF
- informed consent to participate to the survey
- Clinical and functional data + MPI
- Follow-up: 1 year

# ENHANCING HEALTH SYSTEMS SUSTAINABILITY BY PROVIDING COST-EFFICIENCY DATA OF EVIDENCED BASED INTERVENTIONS FOR CHRONIC MANAGEMENT IN STRATIFIED POPULATION BASED ON CLINICAL SOCIO-ECONOMIC DETERMINANTS



GOBIERNO DEL  
PRINCIPADO DE ASTURIAS  
CONSEJERÍA DE SERVICIOS  
Y DERECHOS SOCIALES

**FICYT**  
FUNDACION PARA EL FOMENTO EN ASTURIAS  
DE LA INVESTIGACION CIENTIFICA APLICADA  
Y LA TECNOLOGIA

**CHU**  
MONTPELLIER  
CENTRE HOSPITALIER  
UNIVERSITAIRE

  
Ente Ospedaliero  
**Ospedali  
Galliera**  
Genova  
Ospedale di rilievo nazionale e di alta specializzazione

**Erasmus MC**  
Universitair Medisch Centrum Rotterdam  
*Erasmus*

**Polibienestar**  
UNIVERSITAT DE VALÈNCIA

**QISMET**  
Quality Institute for Self Management Education & Training

E.O. Galliera Hospital - Genoa, Italy –  
11-12 December 2017

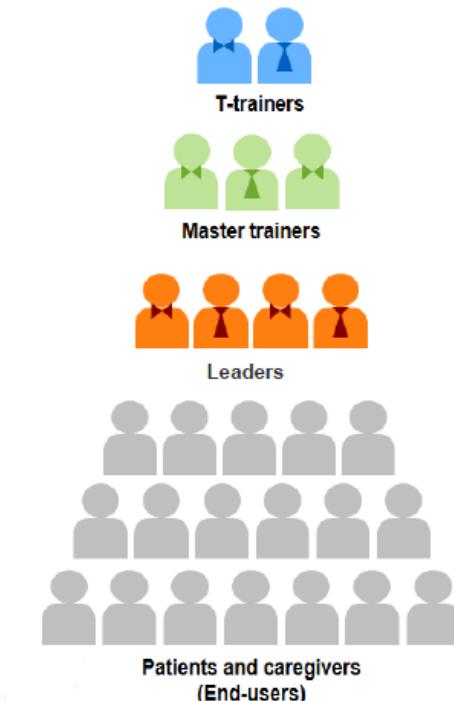
1<sup>st</sup> Interim Meeting  
**EFFICHRONIC** Project



## What do we need to train Leaders?

### T. 5.2 Preparation of the intervention programme

### CDSMP Training Chain



- **T-trainers:** Stanford resources
- **Master trainers:** England, Holland, Italy, Switzerland and Spain
- **Monitors:** Leading a workshop requires two facilitators / tutors (at least one of them has to be patient or caregiver)  
EFFICHRONIC : 32 per country
- **Patients and carivers:** users  
EFFICHRONIC = 500 per country

# MULTIPLAT-AGE

Codice WF

**NET-2016-02361805**

	Titolo		<b>Development and implementation of common strategy for the management of community-dwelling older subjects with multimorbidity and polypharmacy: integration with a multicomponent intervention platform by using domotic, robotic and telecare systems (MULTIPLAT_AGE)</b>	
	Centro Coordinatore italiano della Rete		E.O. Ospedali Galliera, Dipartimento CUROGE – Genova	
	Principal Investigator		Dott. Alberto Pilotto	
n.	Regione	Ente/Ospedale	WP	Titolo del progetto
1	Liguria	E.O. Ospedali Galliera , Dipartimento CUROGE Genova	1	Development and validation of a care transition model in a home-oriented protected area by using high technology systems for the management of multimorbid and polytreated older people (PRO-HOME)
2	Campania	AOU Salerno & Università Federico II, Napoli	2	The ICT based integrated care of chronic multimorbid patients at their home: the EASYDOM trial.
3	Piemonte	AOU Novara e Università del Piemonte Orientale, Novara	3	Evaluation of appropriateness of drug prescriptions in the elderly and development of programs to improve it in Piedmont.
4	Liguria	IRCCS AOU San Martino e UniGE, DINO GMI, Genova	4	Combined training with Action observation and exergames (eAction-training) to improve balance and gait stability in elderly subjects at risk for falls.
5	Calabria	AO Mater Domini, UO Neurologia e Università di Catanzaro	5	Clinical efficacy and neurophysiological correlates of cognitive stimulation in aged subjects with mild and moderate cognitive impairment.

## INFORMATICA

- Standardizzazione dati (Cart.Clin.MD)
- Prescrizione farmaci (APPROGER)



## DOMOTICA

- Ambient Assisted Living (Mo.Di.Pro.)
- Monitoraggio clinico (Sensori wearable)



## ROBOTICA

- Assistiva (PadBot)
- Clinica e riabilitativa (*hunova*)



*Department of Geriatric Care, OrthoGeriatrics and Rehabilitation*  
*“Frailty Area”*  
**E.O. Galliera Hospital – Genoa, Italy**  
*National Relevance & High Specialization Hospital*



**MPI\_Age**

<http://www.mpiage.eu>

**Mpi\_Age**



<https://www.galliera.it/20/58/strutture-sanitarie/178/progetto-effichronic>

**Effichronic**



**Grazie per l'attenzione**