



# Il progetto SHELTER

Graziano Onder  
Centro di Medicina dell' Invecchiamento  
Università Cattolica del Sacro Cuore  
Roma

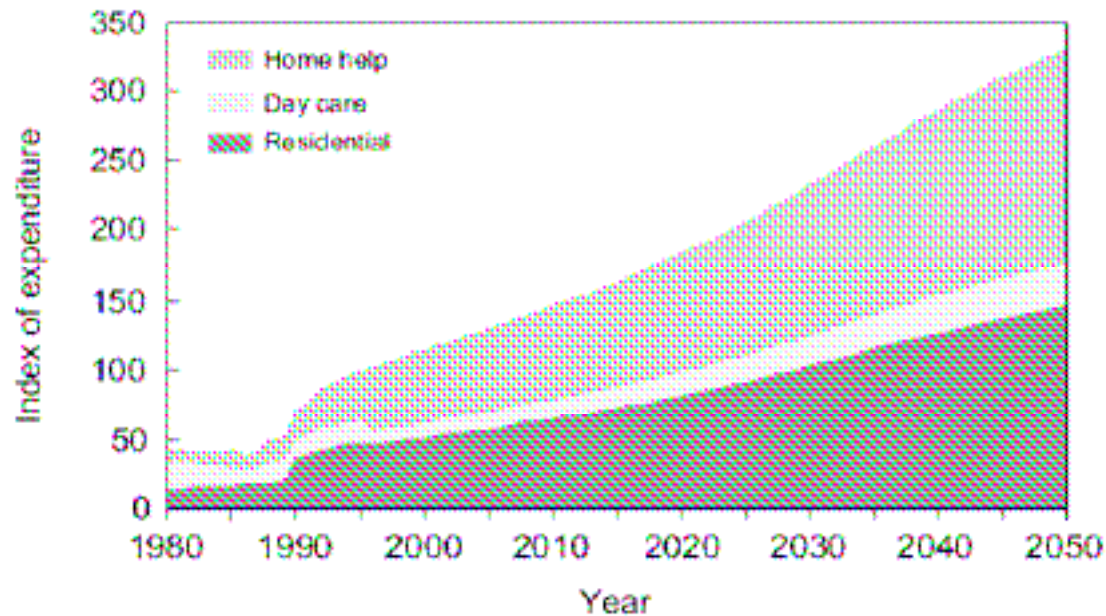
# SHELTER

**Project full title:** Services and Health for Elderly in Long TERM care

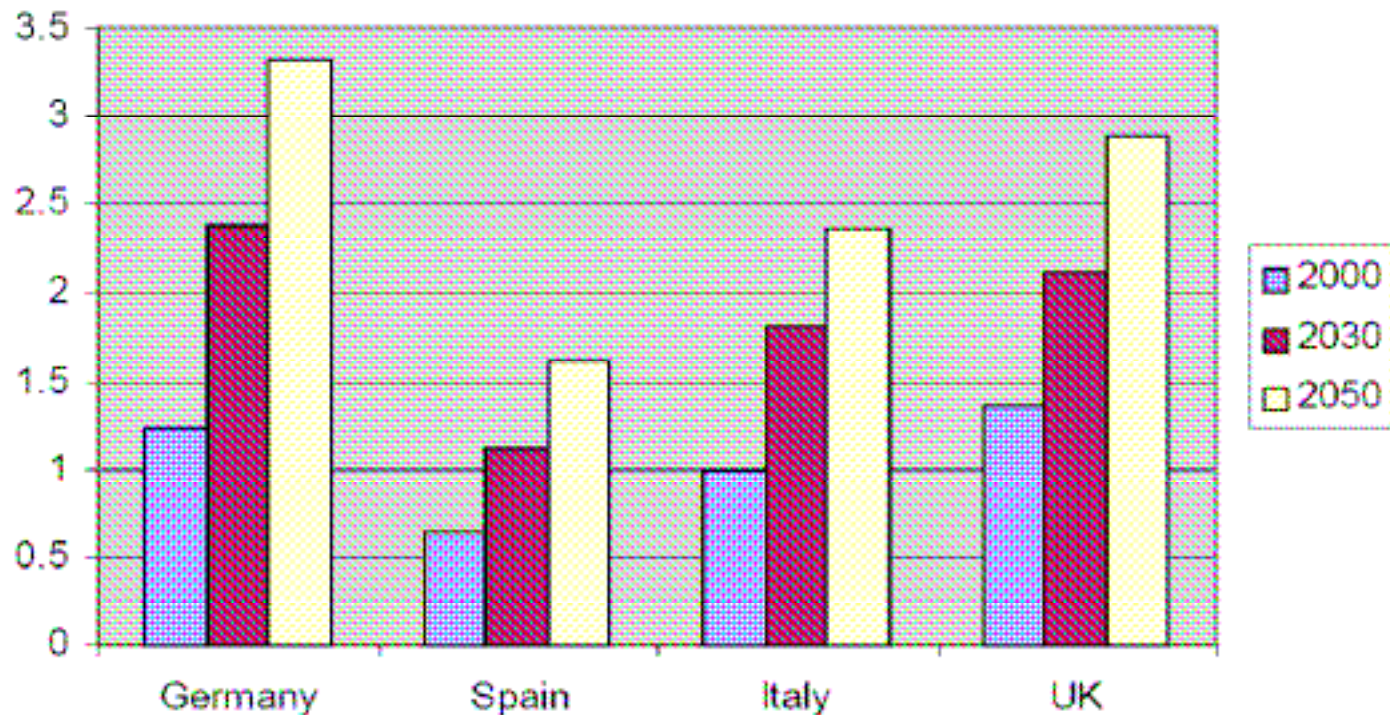
**FP7 Area:** HEALTH-2007-3.2-2: Develop and validate a methodology to analyze the provision of long-term care across European health systems ...

**PI:** Prof. Roberto Bernabei

# Growth in public expenditure on elderly care services



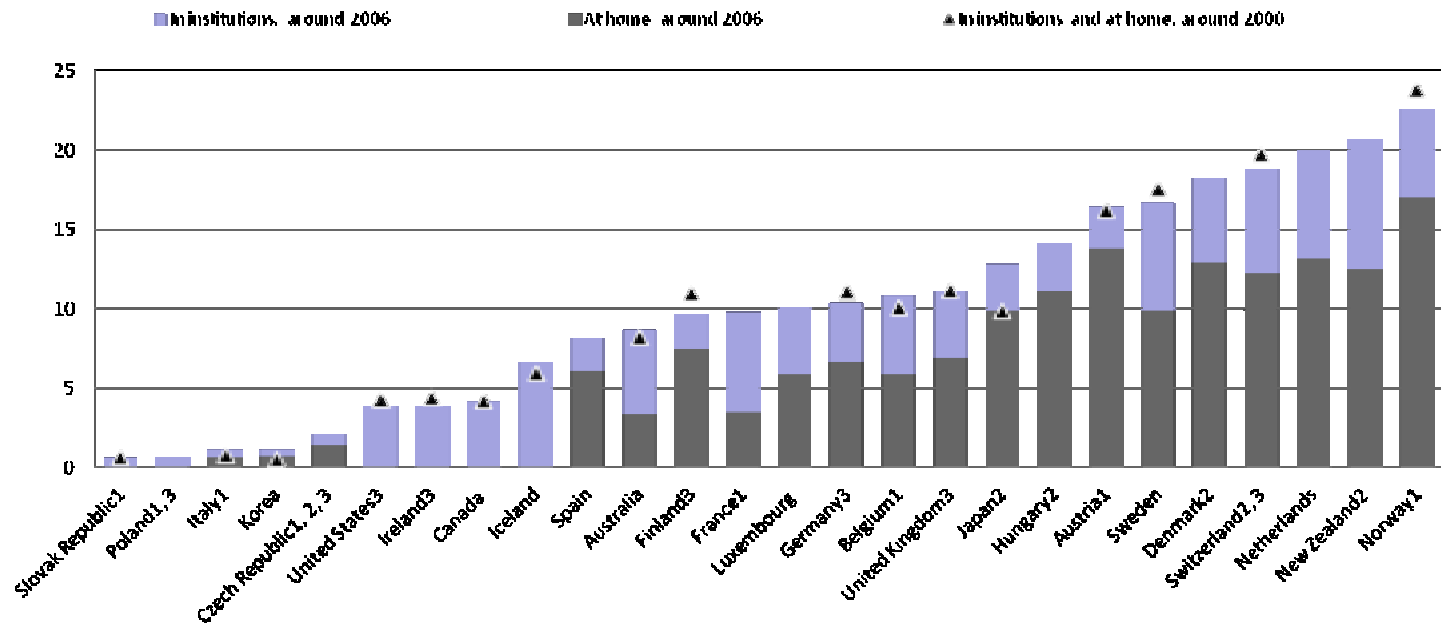
# Projected LTC expenditure as a proportion of GDP



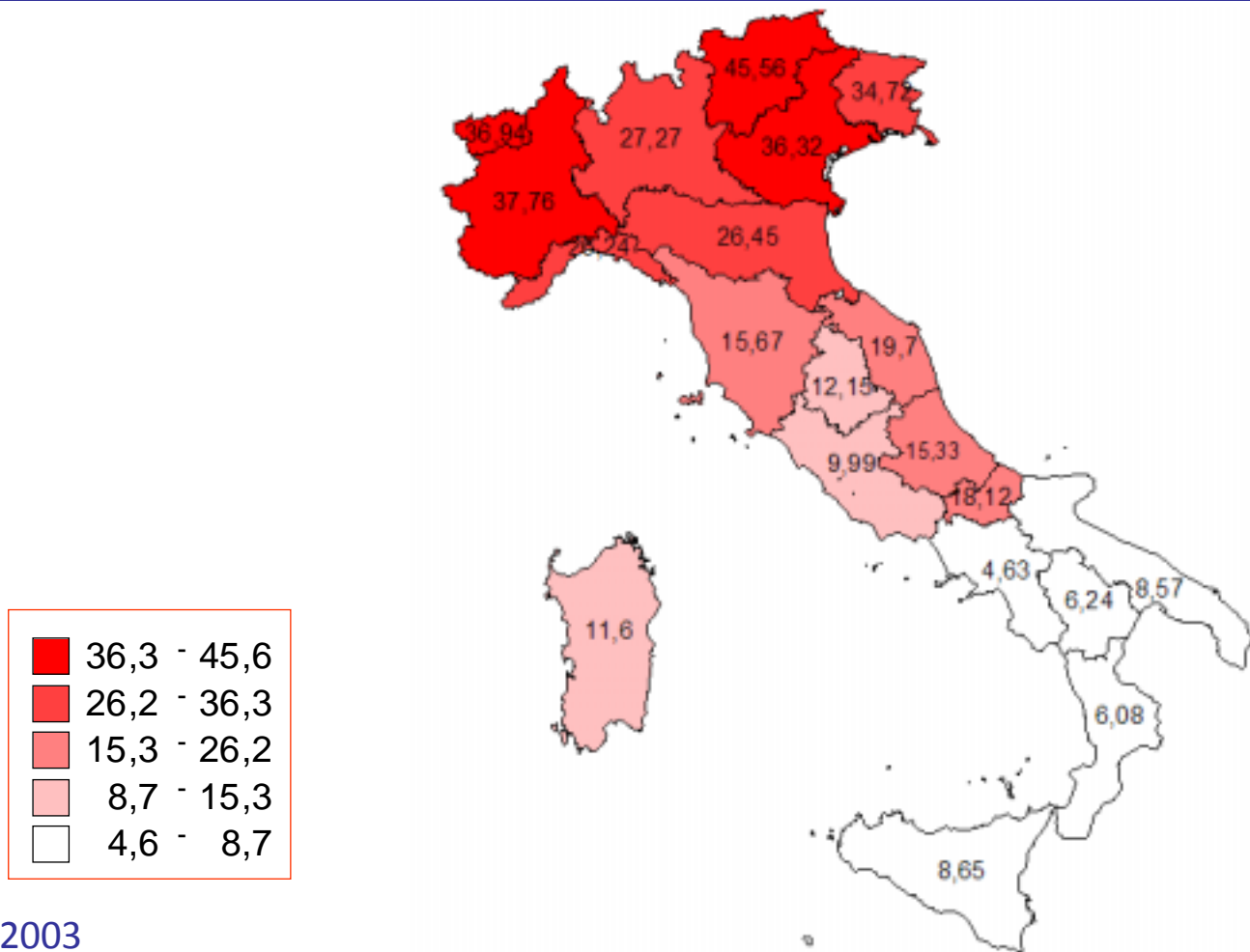
# Public expenditure LTC



# People aged 65+ in institutions and receiving formal care at home as % aged 65+, 2000 and 2006



# NH residents /1000 persons aged 65+



ISTAT 2003

# Lack of data on NH organization and patients characteristics

- Lack of comparable data and evidence and analysis within Europe.
- Data from individual countries;
- Very low level of comparability of the data collected in national surveys;
- Data and analysis from third countries (US) despite different organizational arrangements of the health care sector.



# Reasons

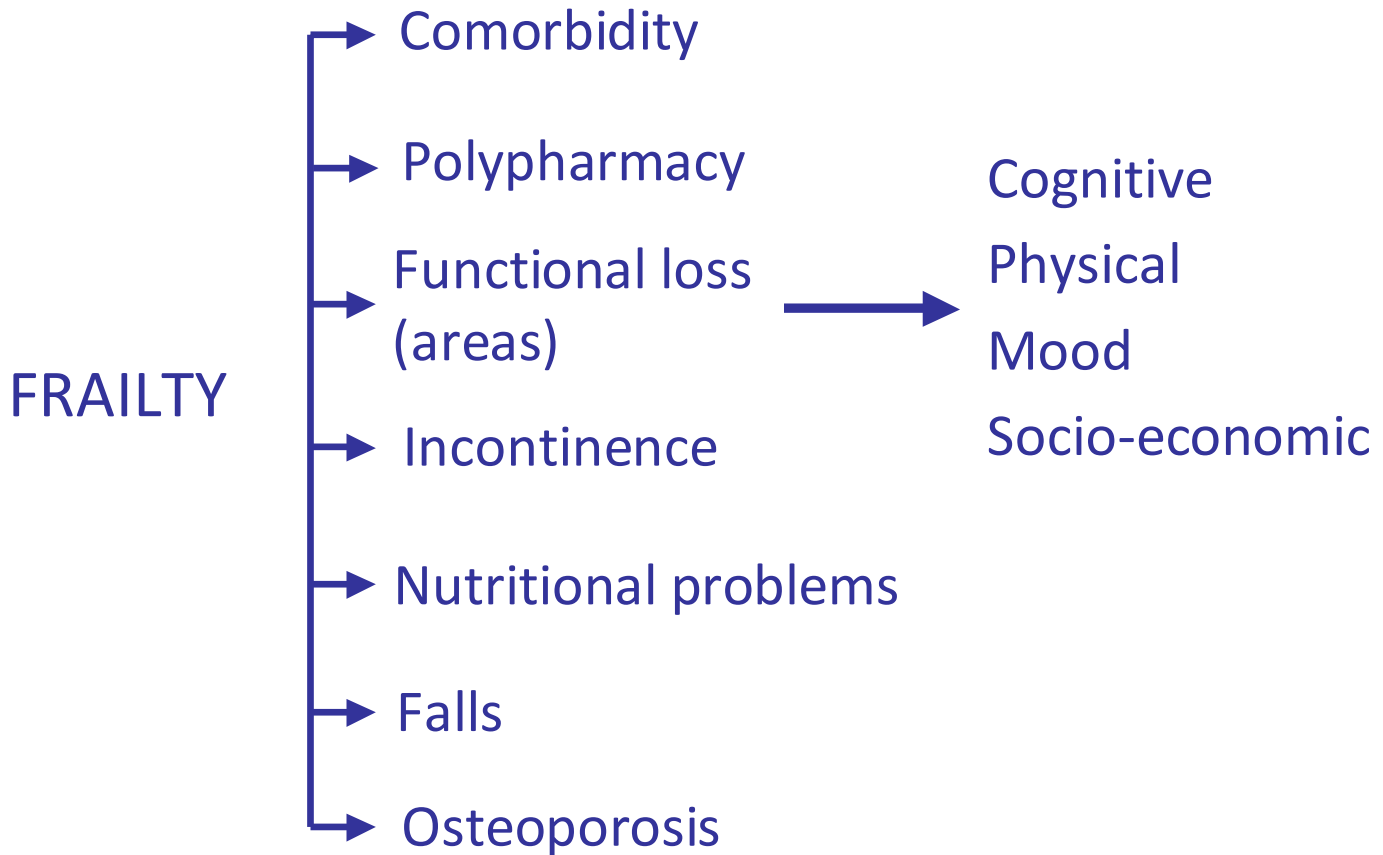
- LTC systems are so different and have so many stakeholders that almost nobody has a total overview of the system;
- Care and services are orientated on supply rather on demand;
- Standardized and validated methodologies to assess health care delivery and quality of care in NH are not routinely used in EU.

# Need for new methodology

Need for developing and validate a methodology:

1. to analyse the provision of LTC across European health systems;
2. develop of eligibility criteria;
3. ensure quality of services;
4. construct quality indicators;
5. resource allocation.

# Geriatric patient



# interRAI Mission Statement

interRAI believes that standardized assessment provides crucial information about the needs of the elderly population which is rapidly growing world-wide. Comprehensive evaluation, including functional, psychosocial and environmental needs, is the key to care planning decisions resulting in quality care for the individual and information for wider policy issues.

# Minimum Data Set

## Examples of Areas Assessed

- Cognition
- Communication
- Mood
- Behavior
- Psycho-social well-being
- Functional Status
- Continence
- Disease diagnosis
- Health conditions
- Nutritional status
- Skin condition
- Activity pursuits
- Social supports
- Medications
- Treatments

## SHELTER - Aims

To **validate** the use of InterRAI LTCF as a methodology to assess provision of care in NH in Europe. Such methodology will allow to:

- a. measure patients outcomes and identify predictors of outcomes;
- b. evaluate and monitor quality of care and identify incentives to improve quality;
- c. develop eligibility criteria and resource utilization groupings

# SHELTER - Study design

**Study design:** cross-national, prospective, observational study in NH residents in European countries.

**Participating countries:** Italy, Czech Republic, Germany, Finland, France, Israel, The Netherlands, United Kingdom.

**Study sample:** 500 individuals from each country.

**Follow up:** 1 year

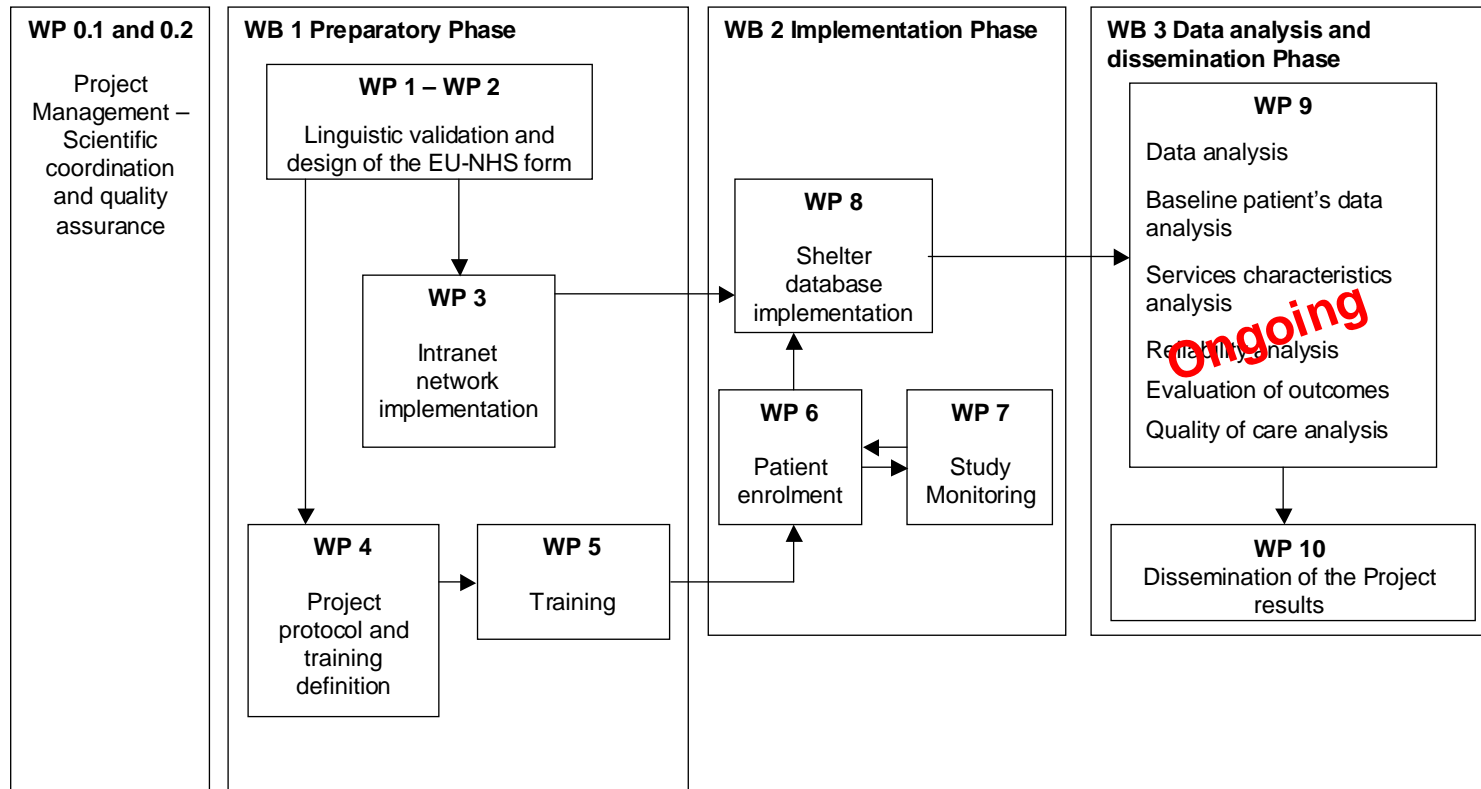


# Participants

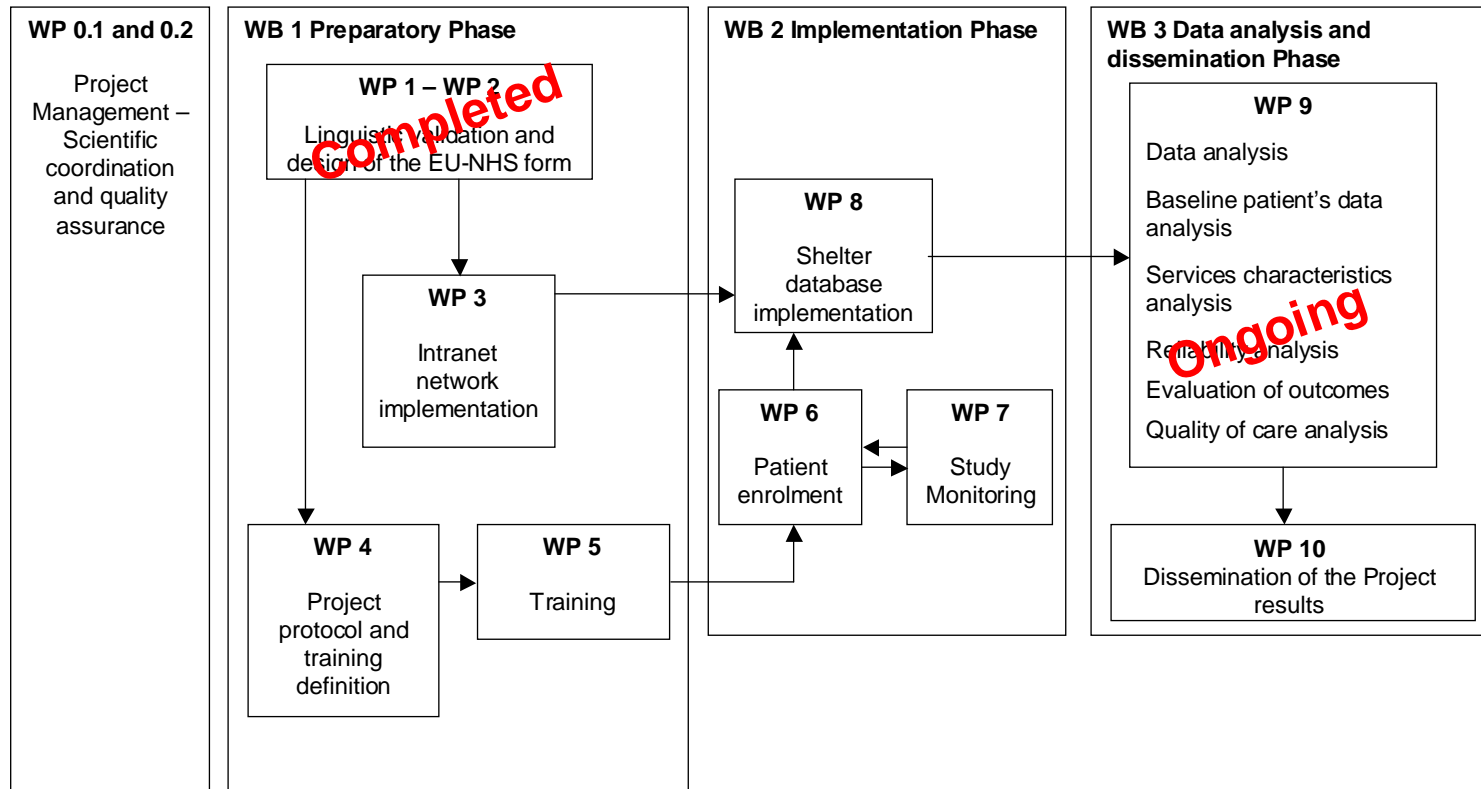
IT	Universita' Cattolica Sacro Cuore
CZ	Charles University - First Medical Faculty
D	University of Ulm
FI	National Research And Development Centre For Social Welfare And Health
FR	Ambroise Paré Teaching Hospital
IL	University of Haifa
NL	Vree University Medical Centre
UK	University of Kent at Canterbury



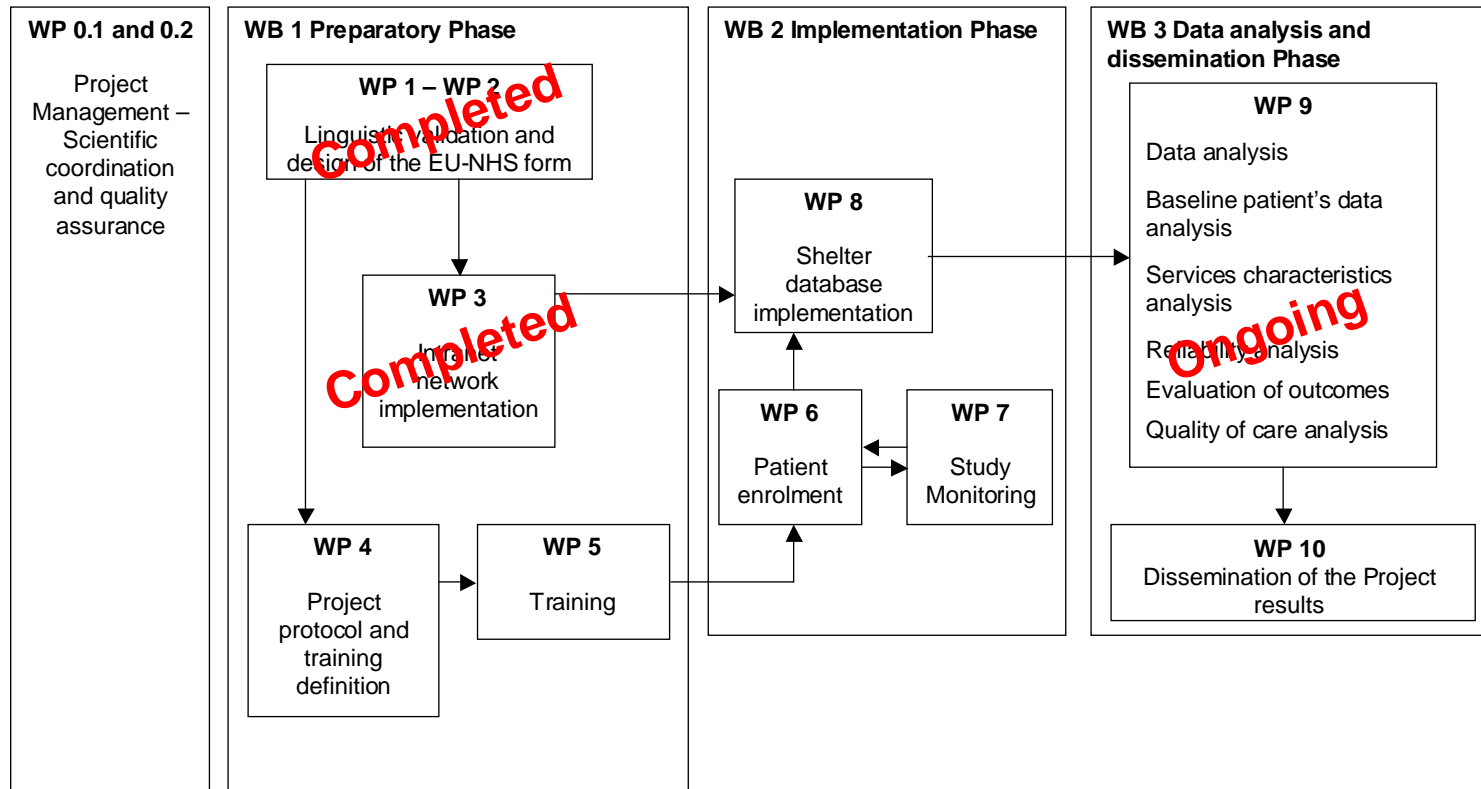
# SHELTER - Pert diagram



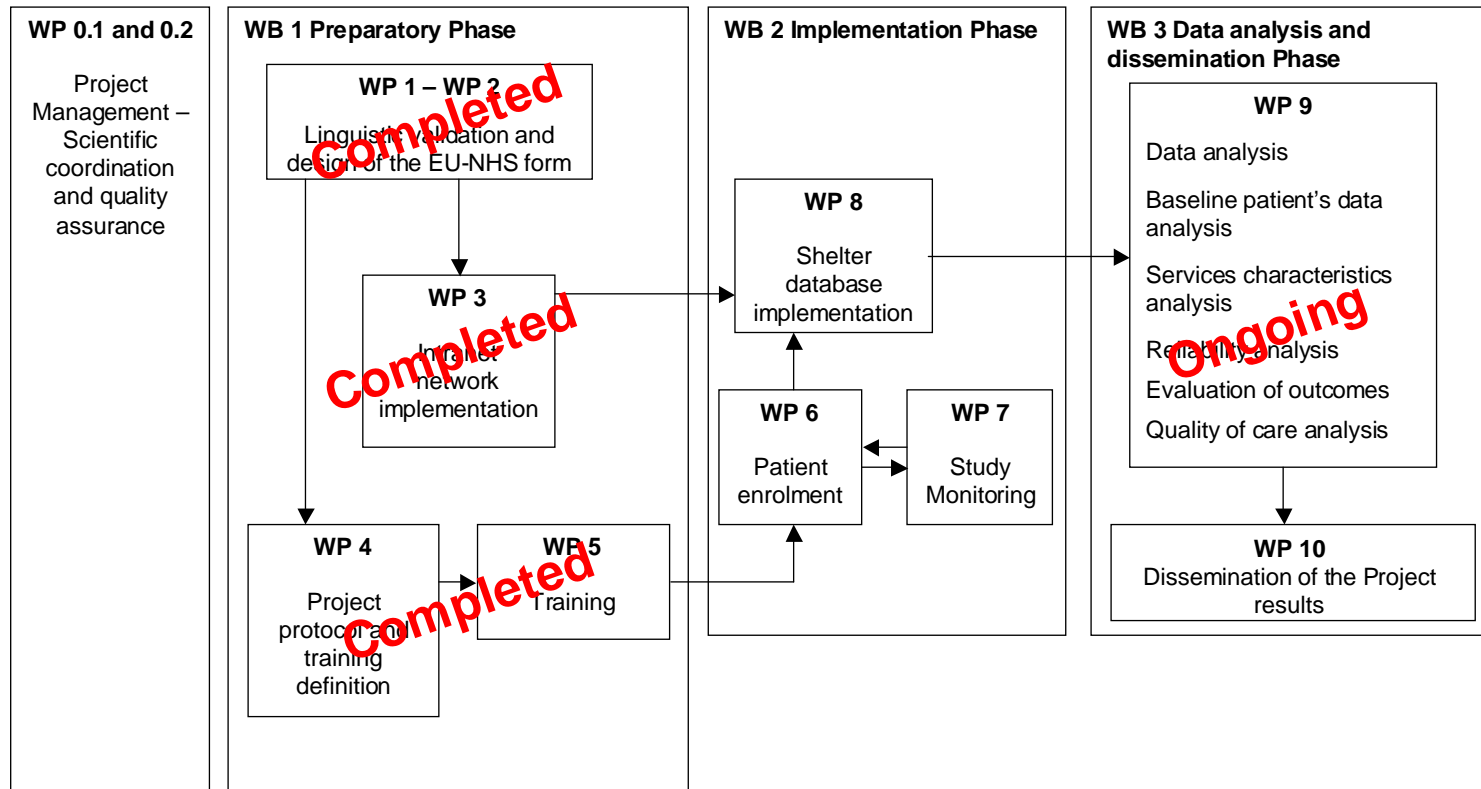
# SHELTER - Pert diagram



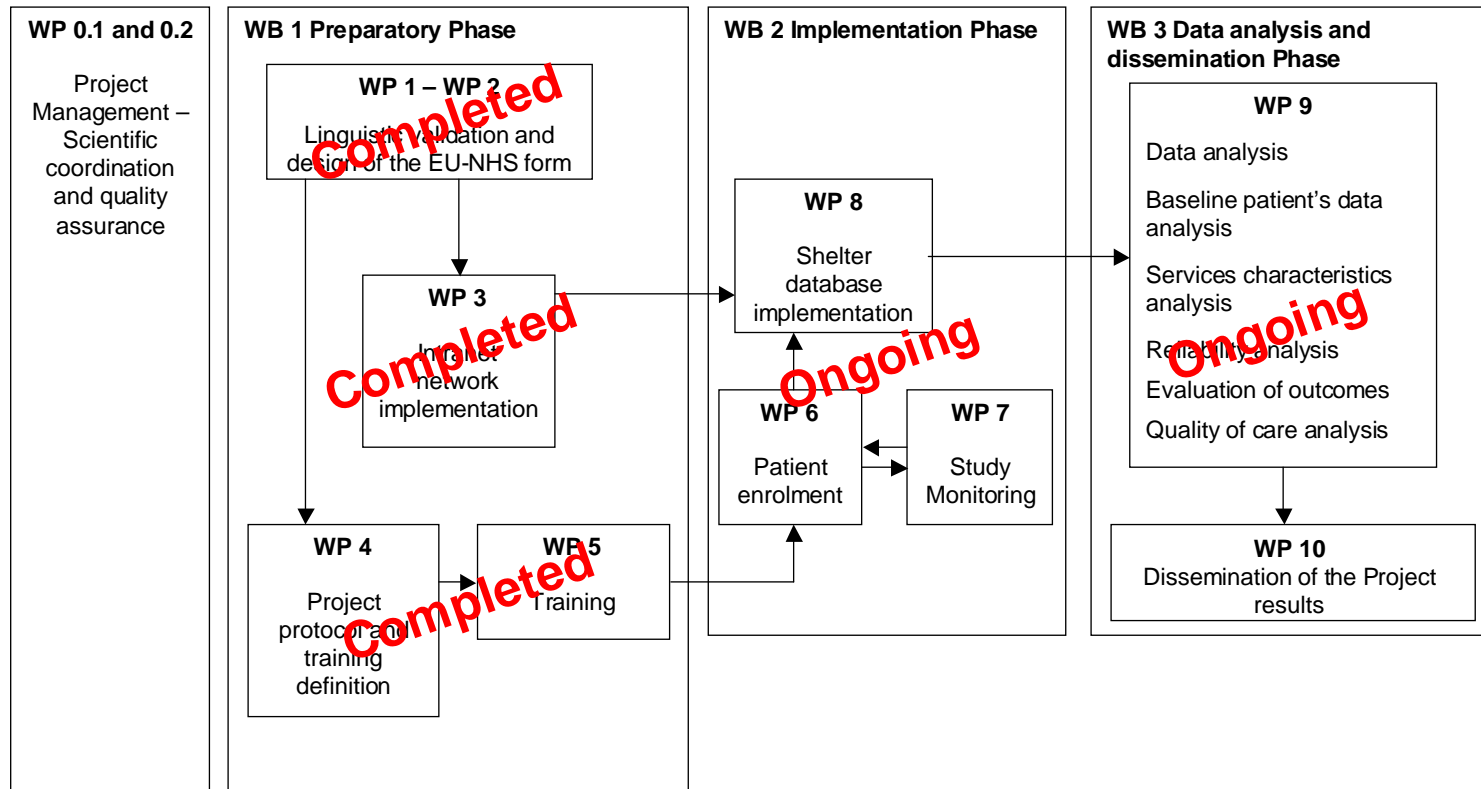
# SHELTER - Pert diagram



# SHELTER - Pert diagram



# SHELTER - Pert diagram



# SHELTER - Validation

To make the InterRAI LTCF instrument applicable to a large European population, the SHELTER will assess:

1. linguistic validity of the instrument in different translations
2. face validity of items included in the translated versions of the instrument
3. test-retest and inter-rater reliability of each item

# Reliability analysis

	Excellent	Kappa $\geq$ .75
	Adequate	Kappa .40-.74
	Poor	Kappa < 0.40

Assessment Area	N of items	Average weighted kappa	
		Test retest (n=380)	Interrater (n=404)
Cognition	10	0.88	0.72
Communication/Hearing	6	0.88	0.75
Mood/behavior			
- Indicators of depression anxiety and sad mood	14	0.75	0.67
- Behavior symptoms	6	0.82	0.68
Psychosocial well-being	19	0.82	0.69
Physical functioning	19	0.85	0.73
Continence	4	0.87	0.87

# Reliability analysis

	Excellent	Kappa $\geq .75$
	Adequate	Kappa .40-.74
	Poor	Kappa $< 0.40$

Assessment Area	N of items	Average weighted kappa	
		Test retest (n=380)	Interrater (n=404)
Disease diagnoses	21	0.91	0.78
Health conditions			
- Falls	2	0.82	0.64
- Problems/conditions	22	0.78	0.65
- Pain	5	0.81	0.68
- Instability of conditions	3	0.86	0.65
- Self-reported health	1	0.82	0.67
Oral/Nutritional Status	14	0.81	0.77
Skin conditions	7	0.79	0.73



# Reliability analysis

	Excellent	Kappa $\geq .75$
	Adequate	Kappa .40-.74
	Poor	Kappa $< 0.40$

Assessment Area	N of items	Average weighted kappa	
		Test retest (n=380)	Interrater (n=404)
Medication	1	0.92	0.85
Treatments and procedures			
- Prevention	8	0.87	0.70
- Treatments	14	0.88	0.83
- Restrictive devices	3	0.86	0.72
Discharge potential and overall status	4	0.91	0.78
Activity Pursuit	18	0.80	0.59

# SHELTER - Database

The SHELTER study proposes to implement and apply on a large scale the MDS LTCF, leading to the creation of a database that will allow the opportunity to:

1. measure residents outcomes and identify predictors of outcomes
2. develop eligibility criteria and resource utilization groupings
3. monitor services delivery and analyse quality measures

# SHELTER – Baseline characteristics

	Total sample n=4156
Age, years	83±9
Female gender	73%
ADL disability	
0-1 - Independent	18.5%
2-4 - Assistance required	49.7%
5-6 - Dependent	31.8%
Depression Rating Scale	2.1±2.7
Pain	21.1%

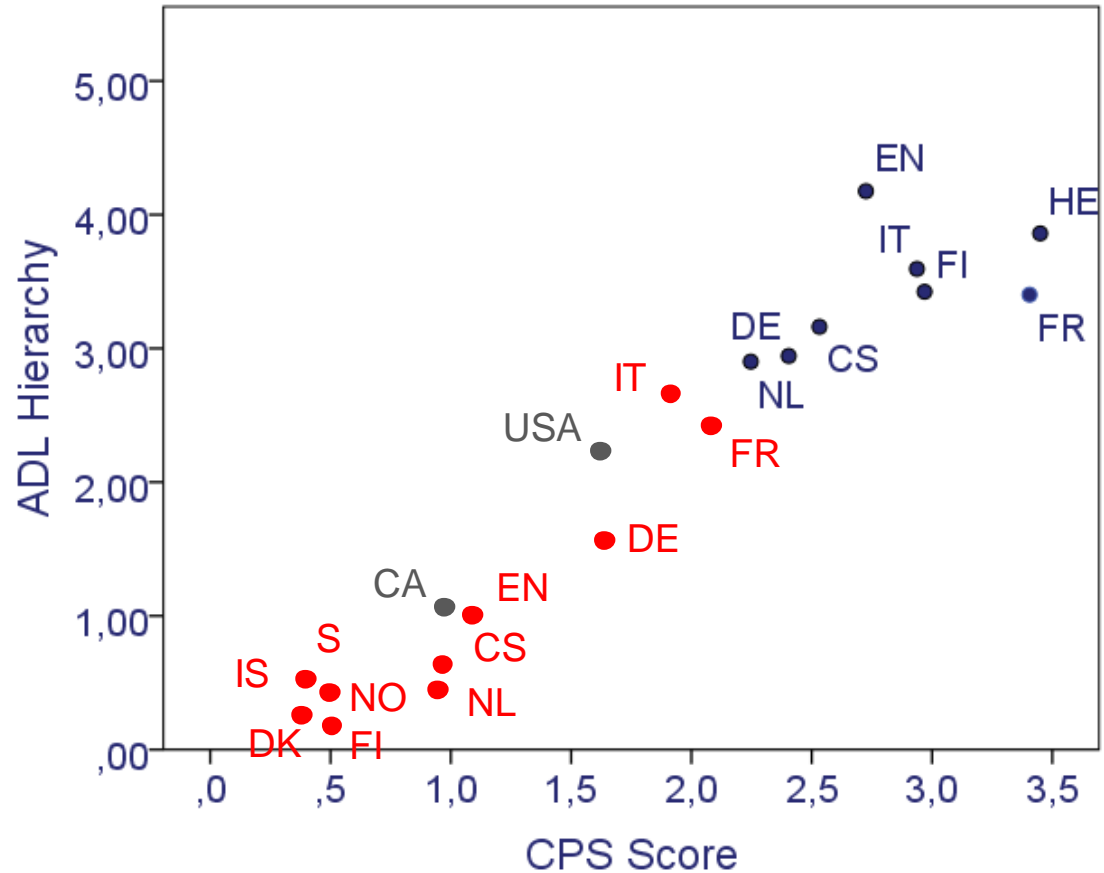
# SHELTER – Baseline characteristics

	Total sample n=4156
CPS score	
0-1 - Intact	30.5%
2-4 - Mild/Moderate impairment	39.1%
5-6 - Severe impairment	30.4%
Behavioral symptoms	27.5%
Falls	19.7%
Pressure ulcers	10.9%
N of drugs	6.7±3.3

# Residents characteristics by country

● SHELTER  
NH residents

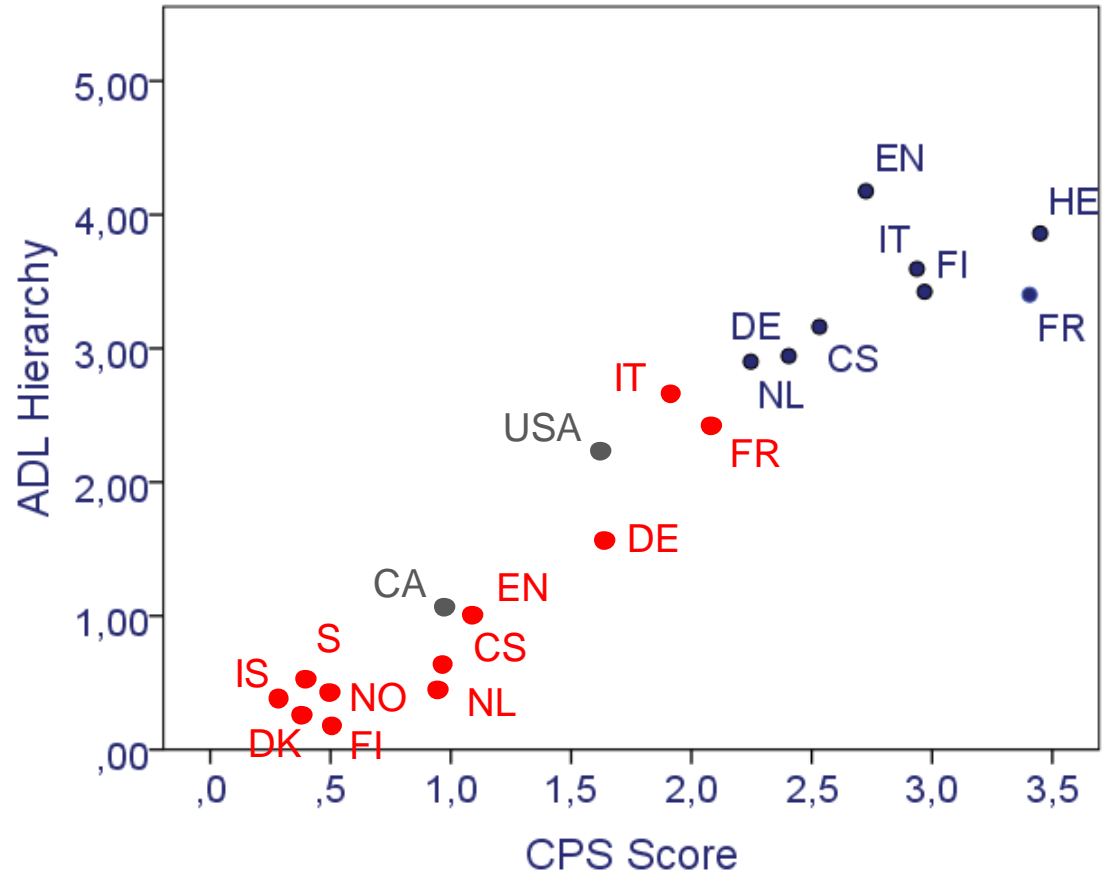
● ADHOC  
HC patients



# Residents characteristics by country

● SHELTER  
NH residents

● ADHOC  
HC patients

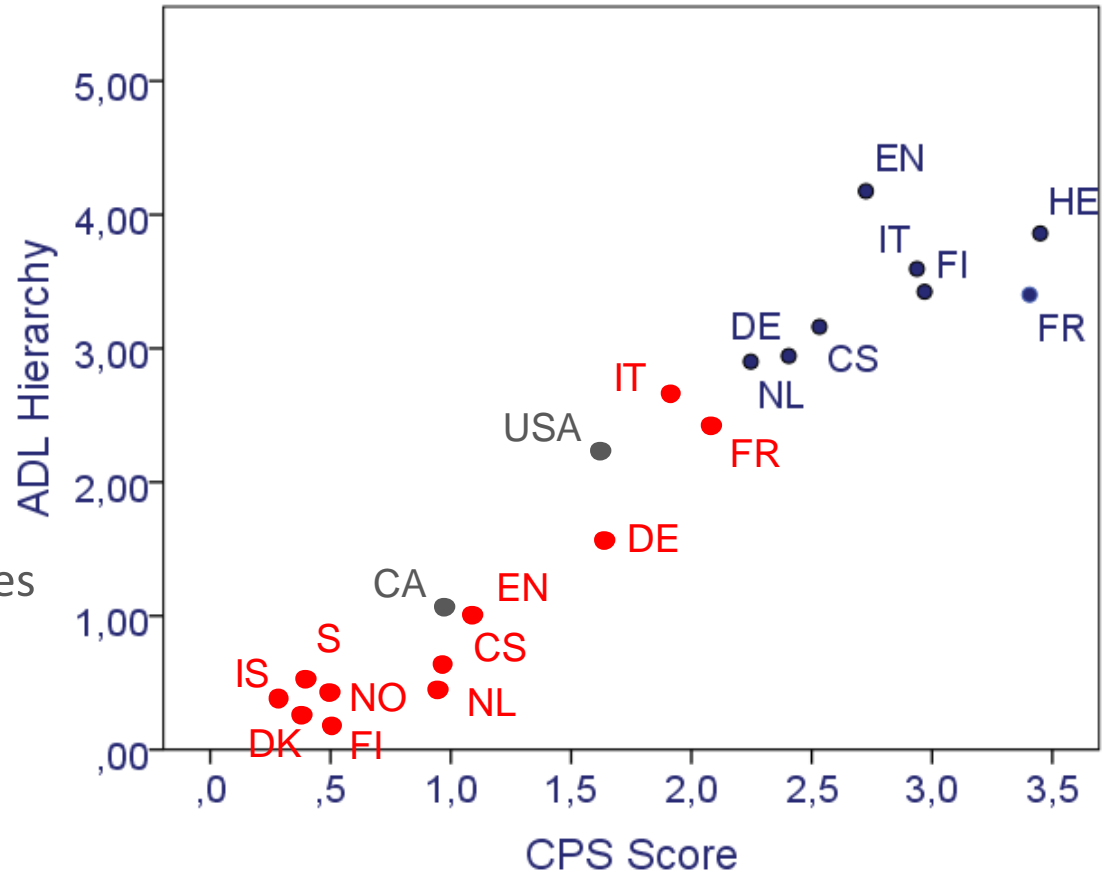


# Residents characteristics by country

● SHELTER  
NH residents

● ADHOC  
HC patients

● Non EU countries  
HC patients



# SHELTER – Pain and Behavioral symptoms – cross sectional analysis

	<b>Any Behav symptoms</b>	<b>Wandering</b>	<b>Verbal abuse</b>
	<b>OR (95%CI)</b>		
<b>No pain</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Pain</b>	<b>1.2 (1.0-1.4)</b>	<b>0.9 (0.7-1.2)</b>	<b>1.1 (0.9-1.4)</b>
	<b>Resists care</b>	<b>Socially inappropriate</b>	<b>Physical abuse</b>
	<b>OR (95%CI)</b>		
<b>No pain</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Pain</b>	<b>1.4 (1.1-1.9)</b>	<b>1.4 (1.1-1.8)</b>	<b>1.1 (0.8-1.6)</b>





## Italy - Team



### Italy - UCSC

Roberto Bernabei

Matteo Tosato

Rosa Liperoti

Giovanni Gambassi

Manuela Antocicco

Graziano Onder

Luca Mariotti

Francesco Landi

Paola Danese

### Italy – Facilities

#### Umbria

RP Sodalizio S. Martino

RP Creusa Brizzi Vittoni

RP Brancaleoni

RP Veralli Cortesi

Casa Serena Rinaldi

#### Puglia

RSA Oasi Nazareth

#### Abruzzo

RSA Fontecchio

RSA Celano

#### Lombardia

RSA Don Cuni

RSA De Ridolfi