



# EuGMS LONDON 2022

18<sup>TH</sup> INTERNATIONAL CONGRESS > SEPTEMBER 28-30



**Professor Hein van Hout**  
Depts General Practice & Medicine for Older Persons

# CONFLICT OF INTEREST DISCLOSURE

Fellow of the interRAI collaborative network

Grants from EU and ZonMw (Dutch Governmental funding)



# Individualized CARE for OLDer Persons with Complex Chronic Conditions at home and in nursing homes

2021-2025

Prof. Dr. Hein van Hout

Depts. General Practice & Medicine for Older Persons

EUGMS  
29 September 2022

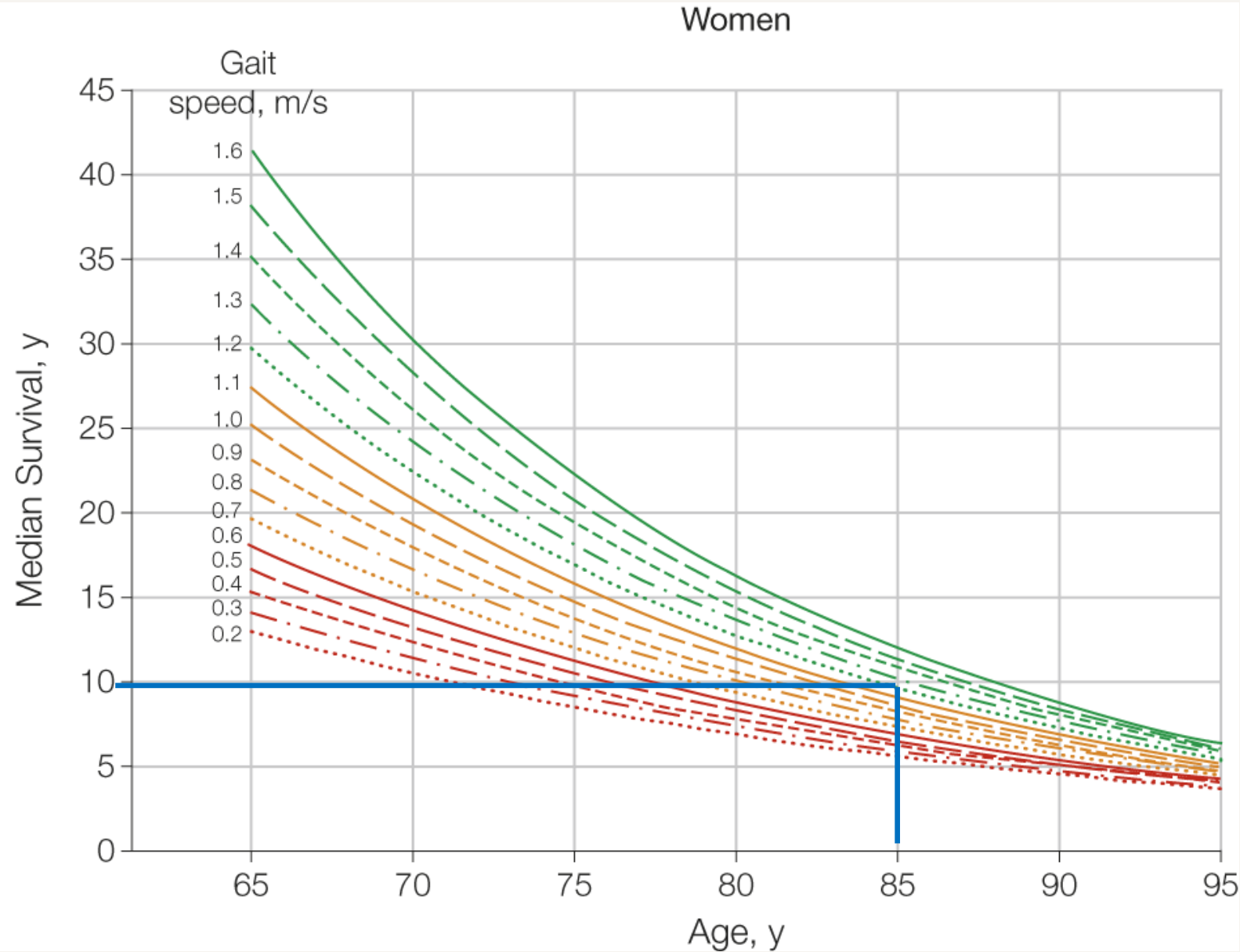


## Background

- With aging the number of persons with Complex Chronic Conditions (CCC) is rapidly expanding.
- Making prognoses on health outcomes is extremely difficult.
- Estimating impact of specific treatments is even harder.
- Little evidence from rare RCTs. Strongly underrepresentation of persons with CCC
- Could real life data with high quality help us?



# Life expectancy based on gait speed



Helpful at group level but less accurate for specific individuals with CCC...

*Studenski JAMA 2011*

## OBJECTIVE

To improve prognoses and estimation of treatment impact  
for older persons with complex chronic conditions

by developing, validating, and piloting  
the next generation prediction algorithms



# Improve prognostics on 6 outcomes :



(i) Life expectation



(ii) Unplanned hospital admission



(iii) Change in self care functioning- ADL



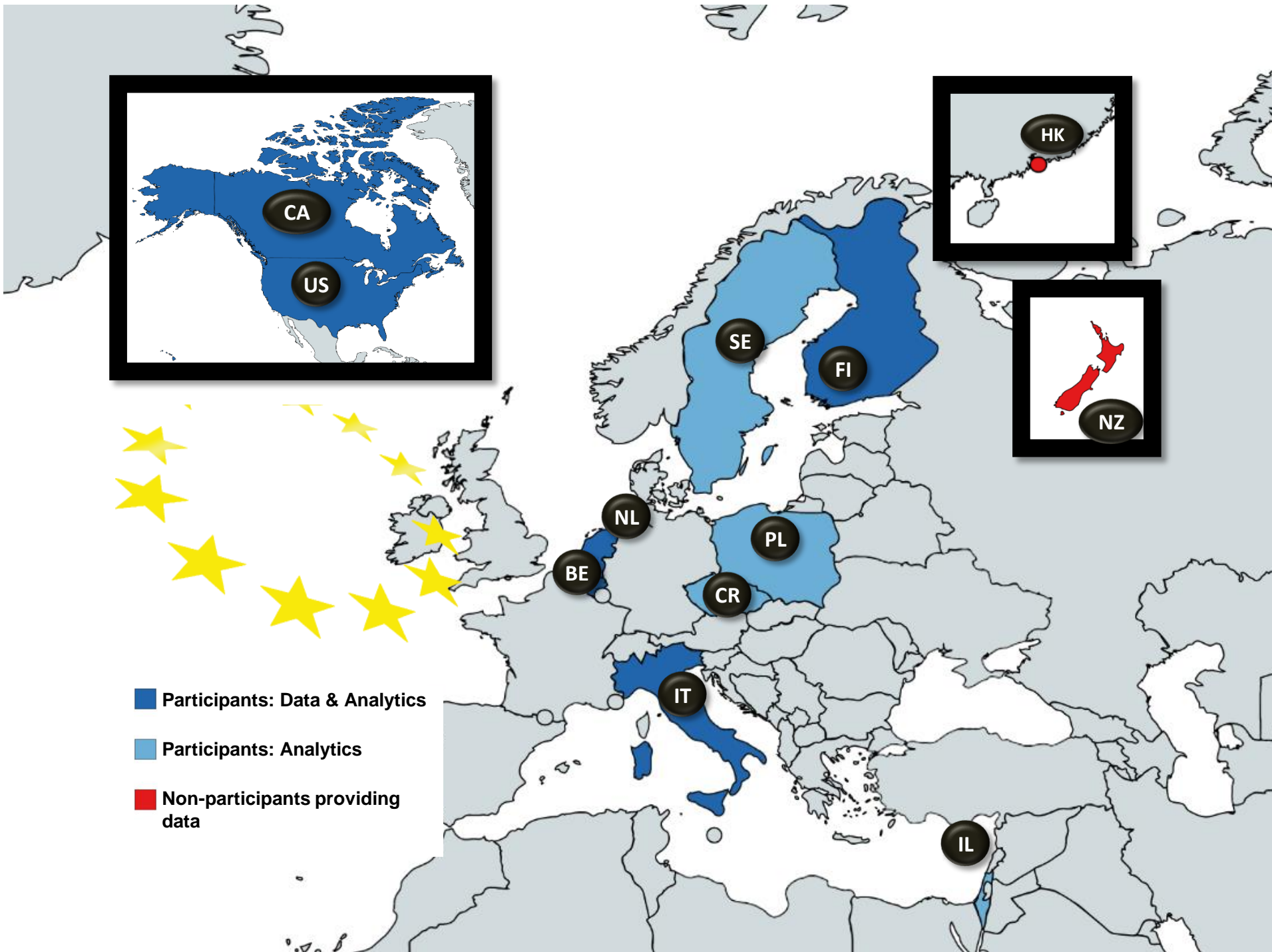
(iv) Change in cognitive functioning – CPS



(v) Health instability – CHESS



(vi) Change in health related quality of life- HUI-III







# Speaking **One Language** for High Quality Care Worldwide



**30+**

Years of experience



**35+**

Countries with interRAI



**1,400+**

Scientific publications



**135+**

interRAI Fellows

# Minimal Data Set

with embedded decision support

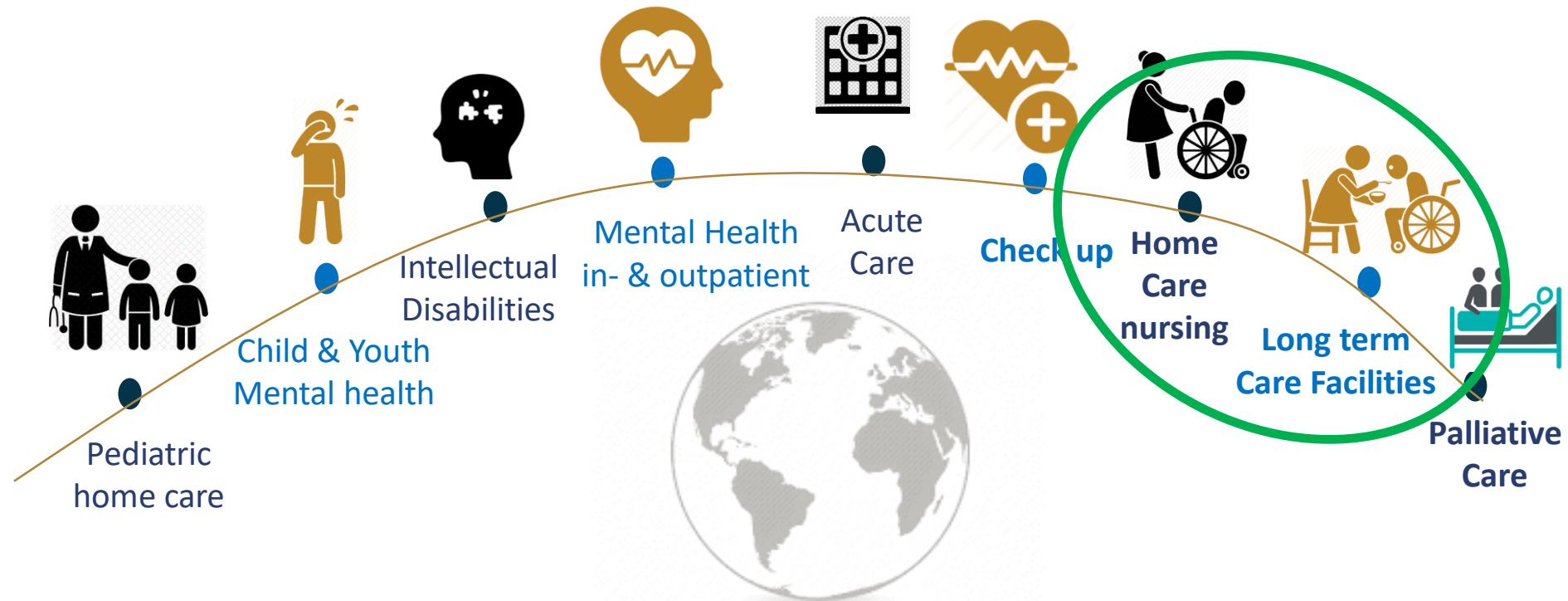


## interRAI assessment

- Cognition
- Communication
- Mood and behavior
- Psychosocial well-being
- Functional status
- Body conditions
- Medications
- Treatments
- Nutritional status
- Treatments



# Minimal Data Sets with embedded decision support an International standard



With **Core items and Core scales** persons can be followed through care settings



# WORKPACKAGES



## WP1 Coordination & Management

### WP2

**Dataset harmonization**  
linking InterRAI and administrative data



**52 million care records longitudinally**



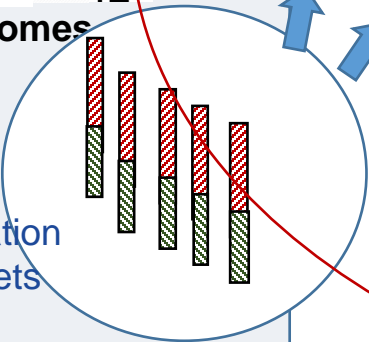
**8 countries**



**6 Health Outcomes**

Training datasets

Validation datasets



### WP3

Homogeneous patient groups with underlying **disease patterns**



### WP4

Predictive models for **health outcomes**



**Regression & Supervised machine learning**

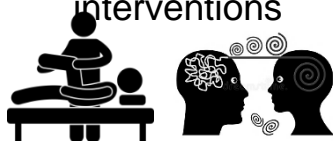
### WP5

Impact of **pharmacological treatments** on health outcomes



### WP6

Impact of **non-pharmacological interventions**



### WP9

Impact of **COVID** on outcomes



### WP7

Platform for **individualized decision support**



Co-creation and pilots with **professionals and patients**

## WP8 Dissemination & Exploitation







## EXAMPLE PROGNOSTIC DASHBOARD

Your prognosis		if you start 'Physical therapy'
Life expectancy	24-28 months	+ 1 month
Acute hospitalisation in 6 months	Low risk <5%	↔ Unchanged
ADL worsening in 6 months	Medium risk 35%	↔ Unchanged
Cognitive worsening in 6 months	Low risk <5%	↔ Unchanged
Health instability in 6 months	High risk 60%	30% ↓ CHANGED: medium risk
HR Quality of Life deterioration	Medium risk ! 35%	<5% ↓ CHANGED: Low risk





Schwaborn

"NURSE, RUSH THIS PATIENT TO THE MATERNITY WARD! SHE'S ABOUT TO DELIVER A BABY!"





# Challenges



## Can we generalise prognostications ?

External validations across countries, care contexts, subgroups

## Can we estimate treatment response accurately? Can we sufficiently deal with bias by indication?

Can we identify treatment eligibility to mimic treated and non treated groups?

## Did Covid impact the prognostications?

Addressed in WP9 thx to additional Canadian Funding

*Angevaare JAMDA 2022, McArthur JAMDA 2021, 2022*

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<b>John HIRDES</b>	University of Waterloo - Health services research	CAN	WP9 lead

# Finally



Friday 8.30 Room 7- Oral on **Multimorbidity patterns in 4 countries** by Cecilia Damiano



- Follow the project !
- Sign up for the newsletter at the website : [icare4old.eu](http://icare4old.eu)
- Research gate
- Social media (twitter, linkedin)