



Giovedì, 21 settembre 2017

**PROGRAMMA SEMINARIO 2017**

# Come catturare i bisogni delle persone con HIV?

L'importanza della “pre-visita”



Giovanni Guaraldi  
Università di Modena



**UNIMORE**  
UNIVERSITÀ DEGLI STUDI DI  
MODENA E REGGIO EMILIA

## John, 62 YRS

Professor at University

Divorced, one child living abroad

BMI=22.7

Smoke pack year=0

Physical activity = none (mobility impairment)

### HIV history

Duration HIV Infection: 22 years (1995)

Nadir CD4=88/ $\mu$ L

CDC Stage: B

HIV1 RNA<40 c/mL (Not detectable since 2007)

Current CD4=416/ $\mu$ L (32%)

CD4/CD8=0.7

CD8 CD38 DR+=32/ $\mu$ L

### ARV history

Pre-ART: 2 years (AZT+ddc)

Early-ART: 8 years (D4T+PI IND or NFV)

Late-ART: 5 years (TDF or ABC+ ATV/r or DRV/r)

Mono-PI: 5 years: DRV/r

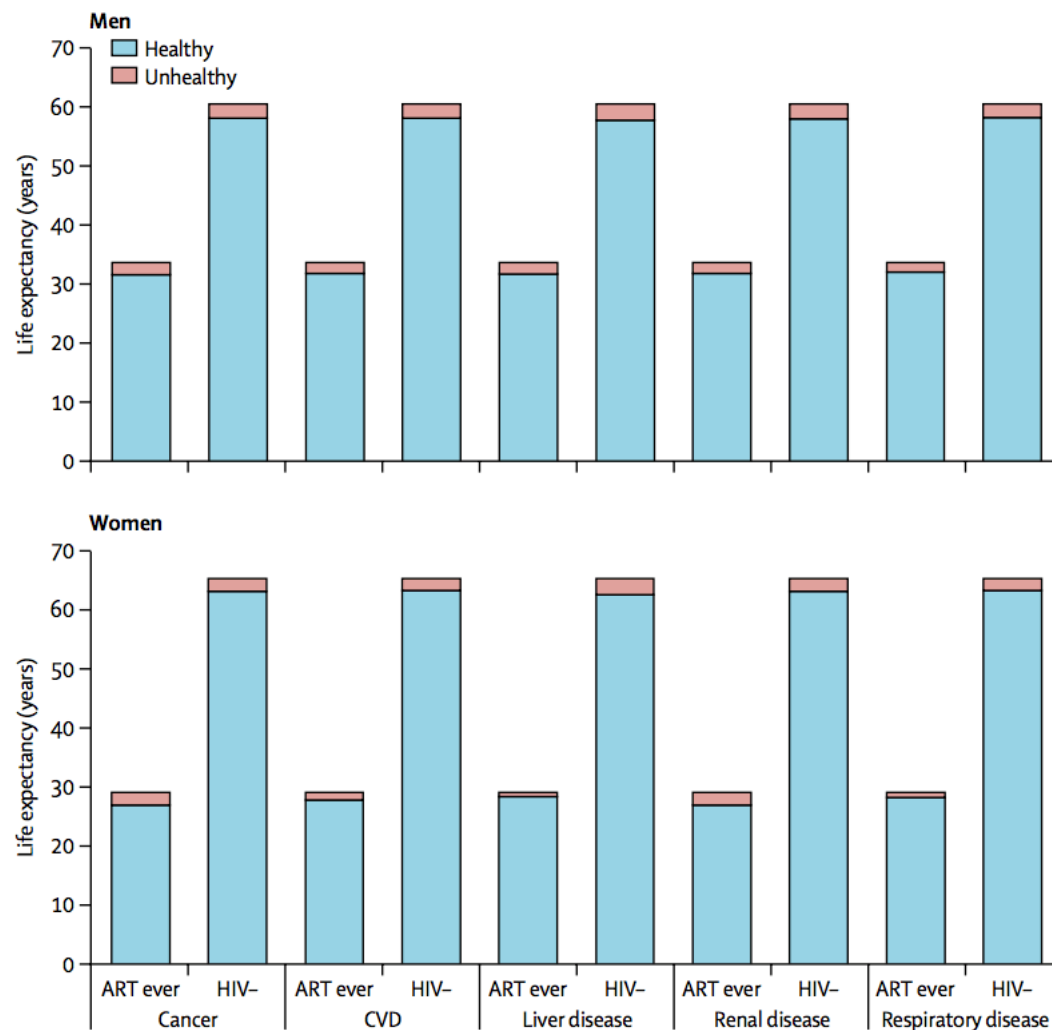
Current regimen: 1 year: TAF/FTC+ELV/c

Di che cosa dobbiamo parlare nella visita?

# Health-adjusted life expectancy in HIV-positive and HIV-negative men and women in British Columbia, Canada: a population-based observational cohort study



Robert S Hogg, Oghenowede Eyawo, Alexandra B Collins, Wendy Zhang, Shahab Jabbari, Mark W Hull, Viviane Dias Lima, Tareq Ahmed, Claire E Kendall, Keri N Althoff, Amy C Justice, Rolando Barrios, Jeannie Shoveller, Julio S G Montaner, for the Comparative Outcomes And Service Utilization Trends (COAST) study



At exactly age 20 years, HALE was about 31 years (SD 0·16) among men living with HIV and 27 years (0·16) among women living with HIV. In the HIV-negative population, HALE was around 58 years (SD 0·02) for men and 63 years (0·02) for women.

After adjustment for co-dependencies, we noted **little differences in the levels of morbidity compression** between PLHIV and their HIV-negative counterparts; however, men and women living with HIV had reduced life expectancies and measures of HALE.

# Total Patient Care

Total Patient Care is a comprehensive patient approach which considers the physical, emotional, social, economic, and spiritual needs of the person; his or her response to illness; and the effect of the illness on the ability to meet self-care needs. It means a transition away from a model of single referral center for care provision to a system of comprehensive coordinated care able to provide both primary and specialized support for PLWH.

1. Personalized medicine
2. Patient centered
3. It refers to HEALTH (Not disease)
4. Muldimensional assesment
5. Patient/comunity awareness
6. Reshaping healthcare system

## Co-morbidities

(HANA  
HIV Associated non-AIDS  
conditions)

&

## Multi-morbidities

recurrent facial  
palsy

2017 Sarcopenia  
ASMI=10.4 → 6.6  
Hand grip=23.9 Kg

2000 Dyslipidaemia  
High dose statine  
LDL=52 mg/dL

2001 Lipohypertrophy  
VAT=117 → 219cc

2001 Lipoatrophy  
Leg fat%=9 → 17%

2014 Miocardial Infaction  
and coronay  
rivascularizatrion  
(1 recurrence)

2009 T2 Diabetes Mellitus

2002 Bilateral  
osteonecrosis of femour  
heads and (2003) hip  
replacements

2017  
Hypergonadotropic  
hypogonadism  
T=2.8 ng/mL  
LH=26.9 ng/mL

Qual'è la malattia più importante di Giovanni?



Reflections in Internal Medicine

## The geriatric management of frailty as paradigm of “The end of the disease era”

Matteo Cesari <sup>a,b,\*</sup>, Emanuele Marzetti <sup>c</sup>, Ulrich Thiem <sup>d</sup>, Mario Ulises Pérez-Zepeda <sup>e</sup>, Gabor Abellan Van Kan <sup>a</sup>, Francesco Landi <sup>c</sup>, Mirko Petrovic <sup>f</sup>, Antonio Cherubini <sup>g</sup>, Roberto Bernabei <sup>c</sup>

The traditional paradigm of stand-alone disease medicine has become out-of-date in a clinical world dominated by older individuals characterized by multi-morbidity and mutually interacting syndromes.

The comprehensive geriatric assessment is meaningless if conducted in the absence of an integrated care model and without the geriatrician's expertise at managing the complexity of frail elders

Several medical specialties have started looking with interest at some geriatric concepts (and frailty is a paradigmatic example) in order to better face the increased complexity of their patients



Frailty has been proposed as a measure of biological (opposed to chronological) aging



83 years old;  
HTN, Hyperlipidemia, prior MI



83 years old;  
HTN, Hyperlipidemia, prior MI

This variable vulnerability among people of the same chronological age is known as **frailty**

# WYSIWYG!

What you see, is what you get



Geriatric patient  
(biologically aged)

*versus*



Older patient  
(chronologically old)

# Frailty

## Frailty Related phenotype

- ✓ Move slowly
- ✓ Weak handgrip
- X Reduced level of activity
- X Unintentionally lost of weight
- ✓ Feel exhausted

Phenotypic Frail

## 37-item Frailty Index

| Date     | FI<br>(frail>0.28) | Deficit<br>count |
|----------|--------------------|------------------|
| 09/02/17 | 0,2972973          | 16               |
| 25/01/16 | 0,3823529          | 18               |
| 29/05/15 | 0,3235294          | 16               |
| 21/01/15 | 0,2647059          | 14               |
| 12/11/13 | 0,2222222          | 13               |
| 26/09/12 | 0,1891892          | 12               |
| 26/09/11 | 0,2702703          | 15               |
| 14/09/10 | 0,25               | 14               |
| 24/06/10 | 0,1612903          | 10               |
| 09/09/09 | 0,2162162          | 13               |
| 29/06/09 | 0,3225806          | 14               |

## Sarcopenia / lean mass

|      | Total lean | Delta<br>Change |
|------|------------|-----------------|
| 2008 | 62690      |                 |
| 2009 | 54662      | -8020           |
| 2010 | 54903      | 241             |
| 2011 | 57655      | 2752            |
| 2012 | 53967      | -3688           |
| 2013 | 53409      | -558            |
| 2016 | 52088      | -1321           |
| 2017 | 51789      | -299            |

## Physical function



SPPB=4/15



Gait speed: 3 mt/sec



Chair stand test  
(5 times)  
>16 sec

Hand grip=23.9 Kg  
(dominant hand)  
10° percentile

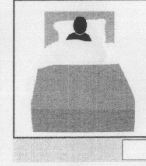


FOR EACH CATEGORY MARK ONLY ONE BOX

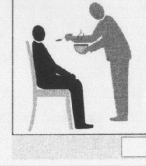
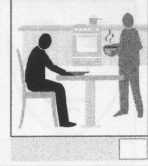
BEST

WORST

**1 MOBILITY**



**2 FUNCTION**

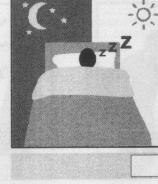
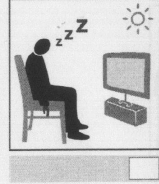


PAGE 1 of 4

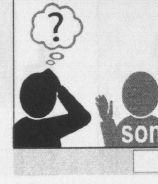
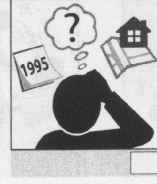
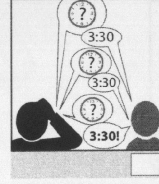
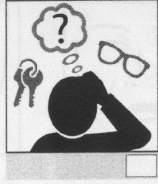
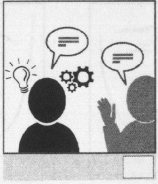
**3 SOCIAL CONNECTIONS**



**4 DAYTIME TIREDNESS**



**5 MEMORY AND THINKING**



Pictorial fit/  
frail scale



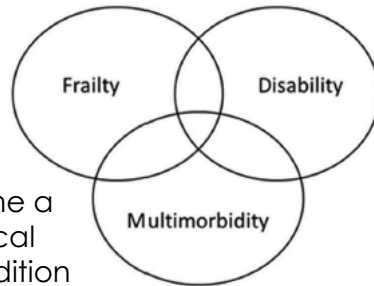
ELSEVIER

JAMDA

journal homepage: [www.jamda.com](http://www.jamda.com)



## Phenotype Model



Frame a clinical condition

Controversies in Long-term Care

## Frailty and Multimorbidity: Different Ways of Thinking About Geriatrics

Matteo Cesari MD, PhD<sup>a,b,\*</sup>, Mario Ulises Pérez-Zepeda MD, PhD<sup>c</sup>,  
Emanuele Marzetti MD, PhD<sup>d</sup>

Multimorbidity and frailty represent two different ways of looking at the complexity of older persons.

- ✓ Multimorbidity is dependent on diagnostic capacity and is based on a single (ie, nosological) domain of the individual's health status may be insufficient at measuring the biological, clinical, and social complexity of older persons.
- ✓ Frailty implies a more exhaustive and comprehensive assessment of the individual and his/her environment, facilitating the implementation of tailored interventions.



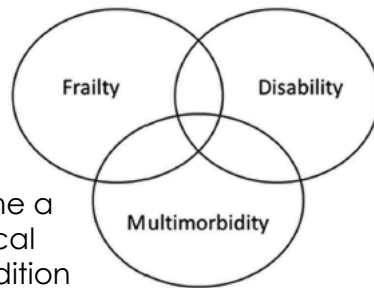
ELSEVIER

JAMDA

journal homepage: [www.jamda.com](http://www.jamda.com)

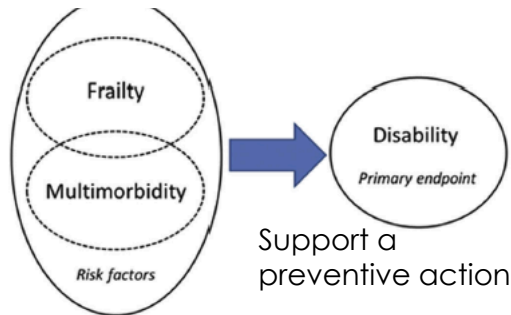


### Phenotype Model



Frame a clinical condition

### Pre-Disability Model



Support a preventive action

Controversies in Long-term Care

## Frailty and Multimorbidity: Different Ways of Thinking About Geriatrics

Matteo Cesari MD, PhD<sup>a,b,\*</sup>, Mario Ulises Pérez-Zepeda MD, PhD<sup>c</sup>,  
Emanuele Marzetti MD, PhD<sup>d</sup>

Multimorbidity and frailty represent two different ways of looking at the complexity of older persons.

- ✓ Multimorbidity is dependent on diagnostic capacity and is based on a single (ie, nosological) domain of the individual's health status may be insufficient at measuring the biological, clinical, and social complexity of older persons.
- ✓ Frailty implies a more exhaustive and comprehensive assessment of the individual and his/her environment, facilitating the implementation of tailored interventions.



ELSEVIER

JAMDA

journal homepage: [www.jamda.com](http://www.jamda.com)

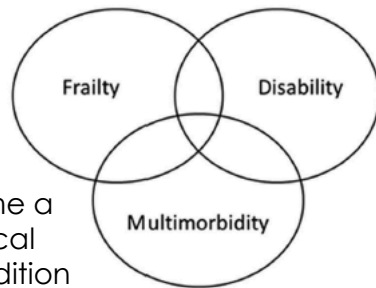


Controversies in Long-term Care

## Frailty and Multimorbidity: Different Ways of Thinking About Geriatrics

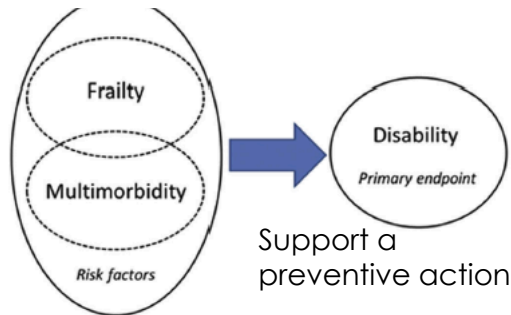
Matteo Cesari MD, PhD<sup>a,b,\*</sup>, Mario Ulises Pérez-Zepeda MD, PhD<sup>c</sup>, Emanuele Marzetti MD, PhD<sup>d</sup>

### Phenotype Model



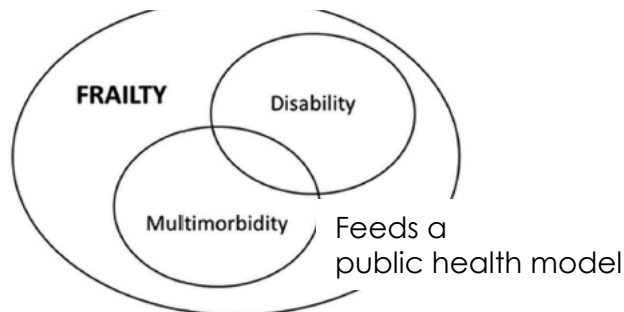
Frame a clinical condition

### Pre-Disability Model



Support a preventive action

### Model for adapted care

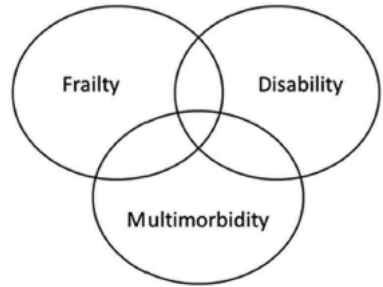


Multimorbidity and frailty represent two different ways of looking at the complexity of older persons.

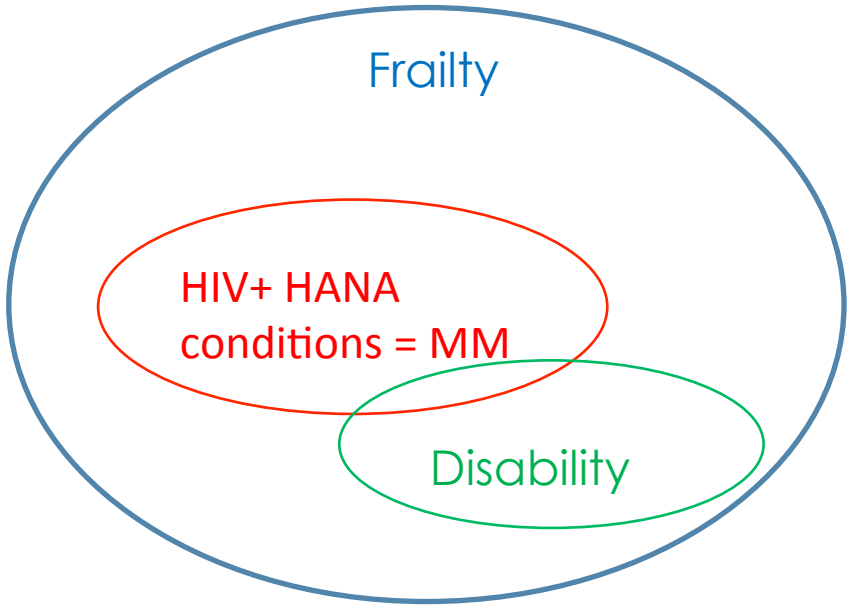
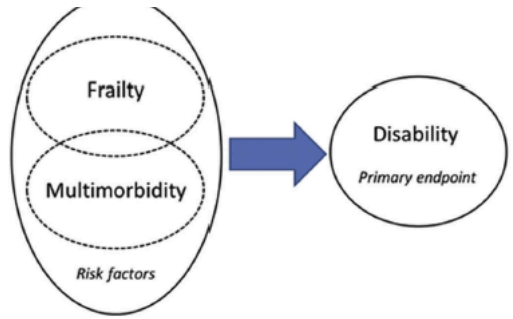
- ✓ Multimorbidity is dependent on diagnostic capacity and is based on a single (ie, nosological) domain of the individual's health status may be insufficient at measuring the biological, clinical, and social complexity of older persons.

- ✓ Frailty implies a more exhaustive and comprehensive assessment of the individual and his/her environment, facilitating the implementation of tailored interventions.

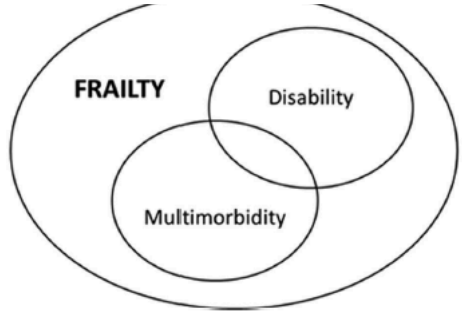
Phenotype Model



Pre-Disability Model



Model for adapted care



Frailty in HIV  
Frailty and HIV

HIV in Frailty



# Disability

## Katz Index of Independence in Activities of Daily Living

- ✓ Bathing
- ✓ Dressing
- X Toileting
- X Transferring
- ✓ Contenance
- ✓ Feeding

80%

## Instrumental Activities of Daily Living

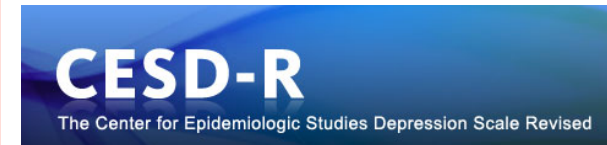
- ✓ Telephone
- ✓ Shopping
- ✓ Food preparation
- ✓ Laundry
- ✓ Mode of transportation
- ✓ Responsibility for medication
- ✓ Ability to handle finances

100%

## Patient related outcomes



EQ-5D-5L=65%



CESD=18 mild depression

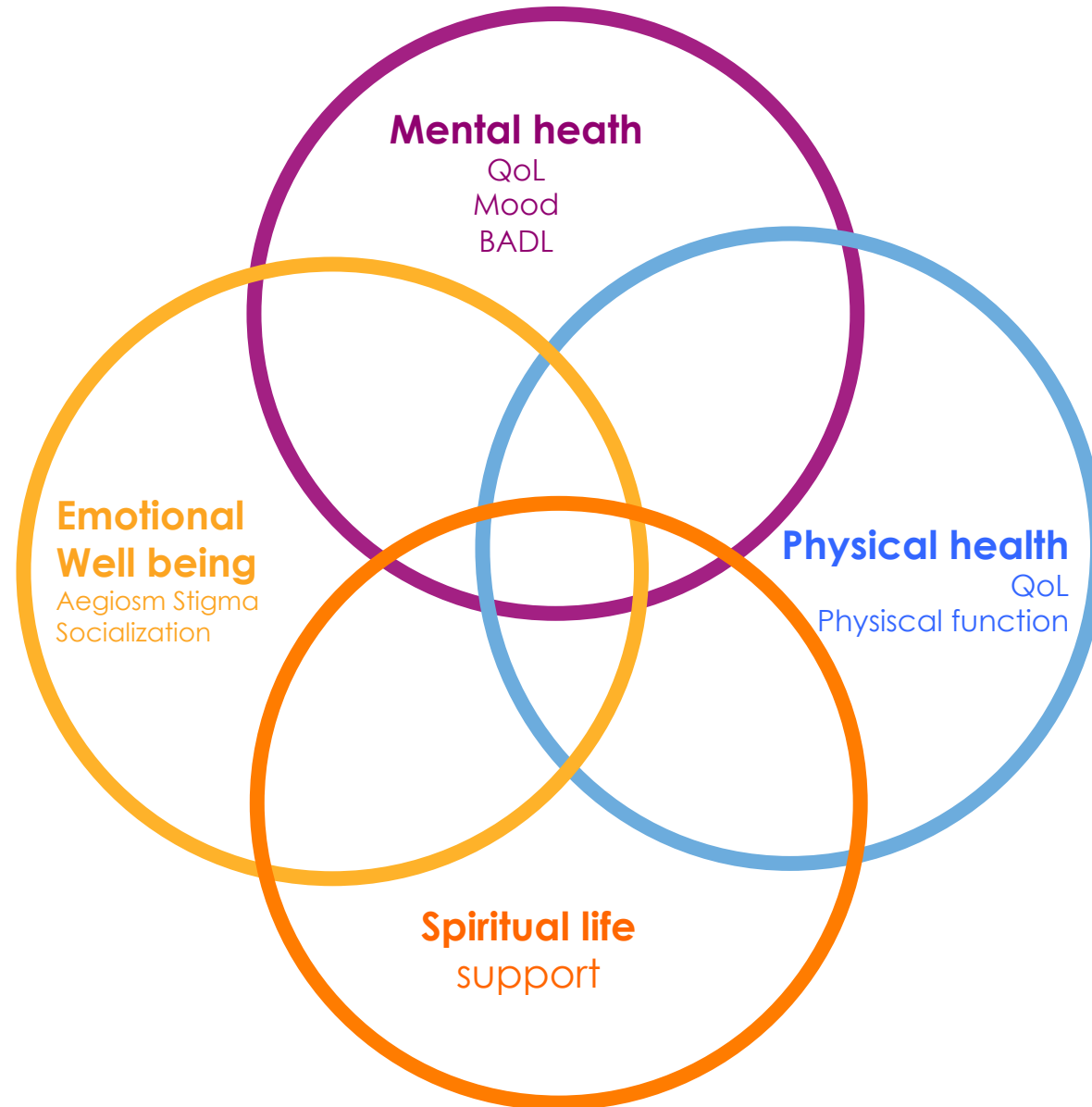
## Geriatric Syndromes

- ✓ Frailty
- ✓ Falls
- X Urinary incontinence
- X Delirium
- X Visual loss
- ✓ Hearing impairment

In your patient visit which clinical outcome you would primarily discuss with John?

1. HIV RNA un-detectability
2. CD4 > 500  $\mu$ /L
3. CD4/CD8 > 1
4. ARV durability
5. Multi-morbidity
6. Healthy Life expectancy

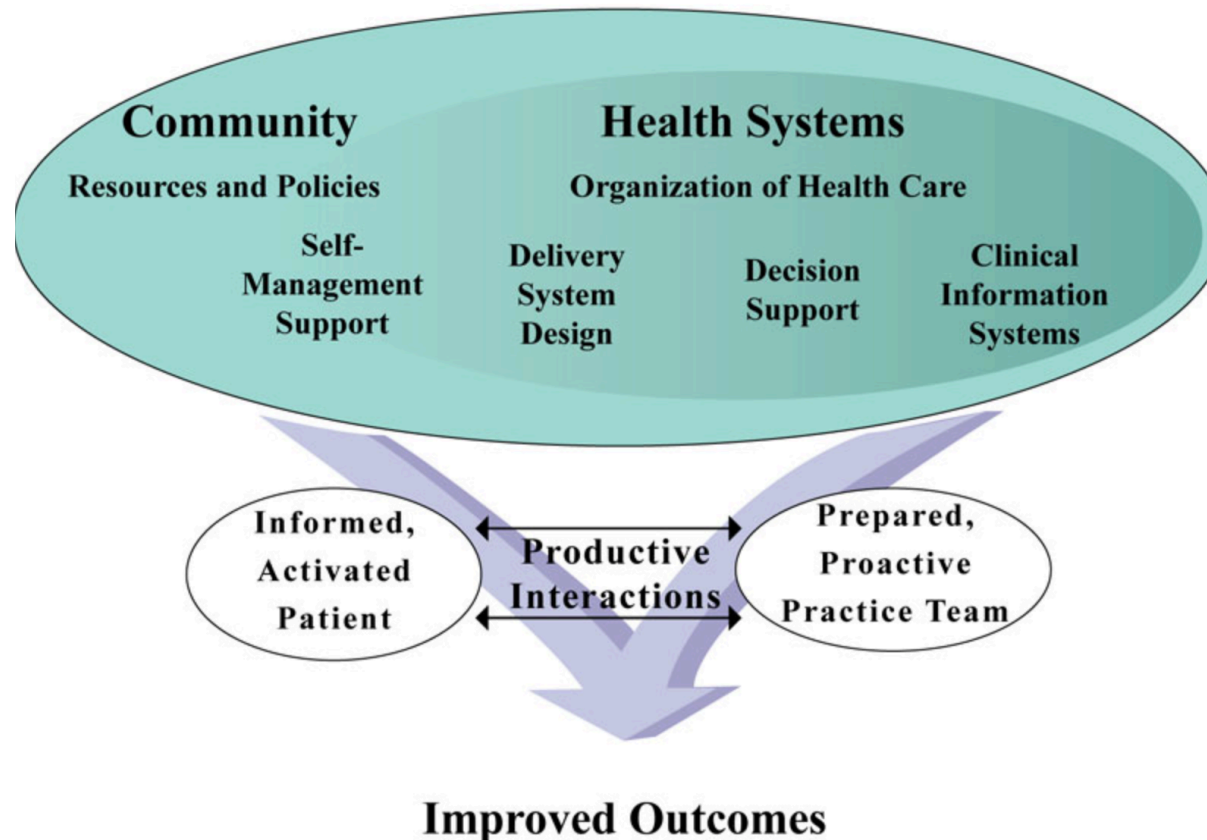
# .... From assessment of disease to evaluation of HEALTH



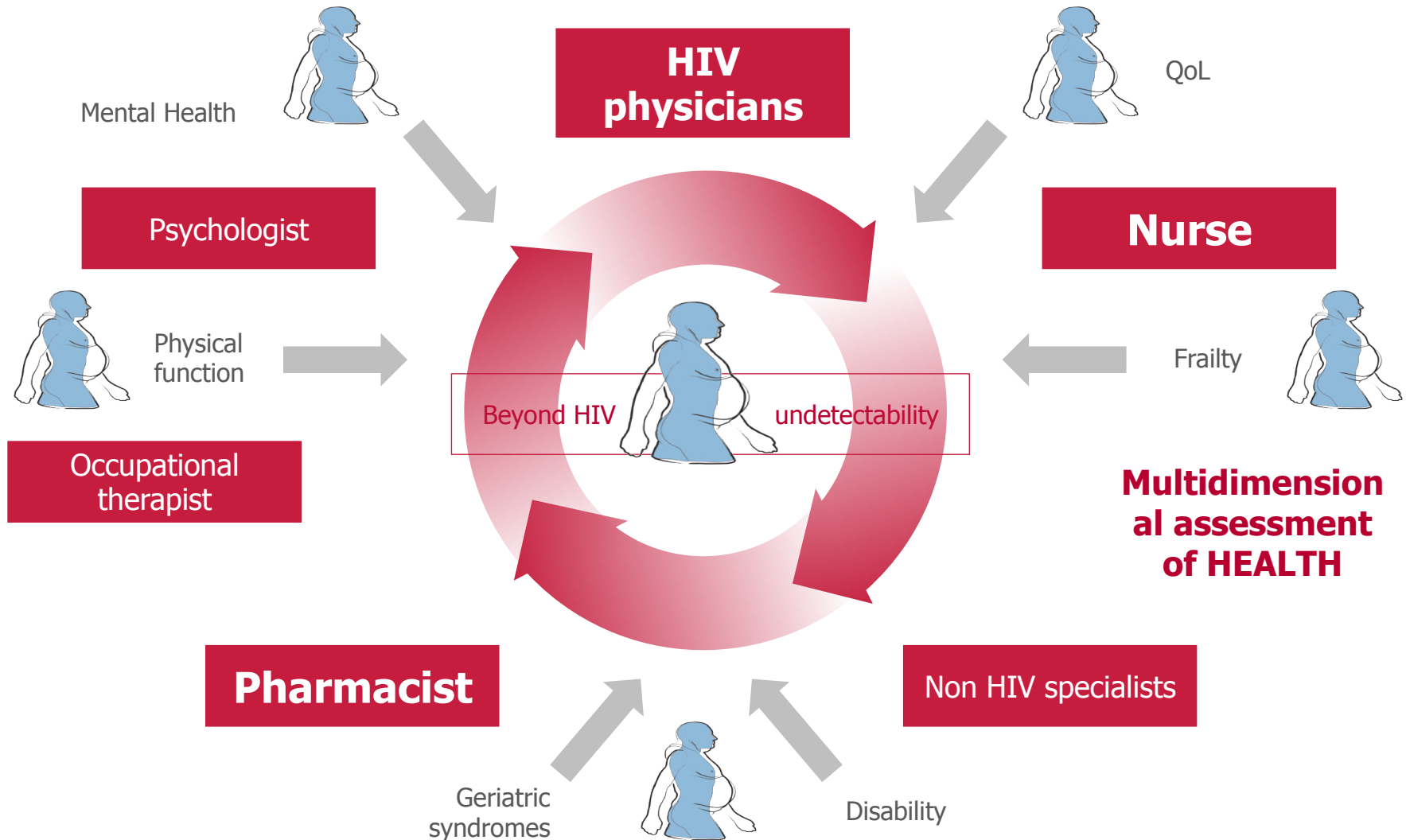
# How?

## Improving Primary Care for Patients With Chronic Illness

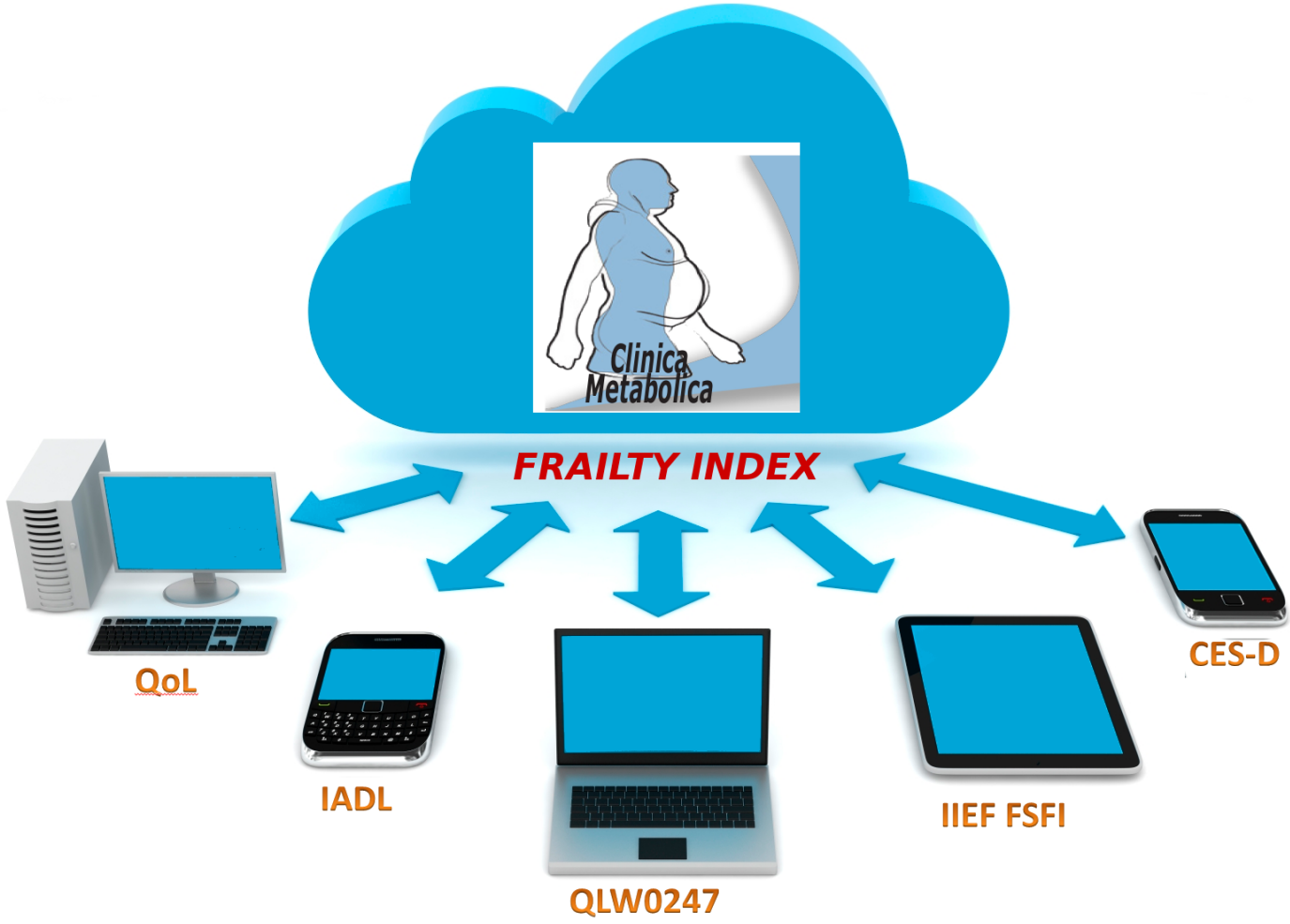
### The Chronic Care Model



# Delivery System Design: Assure the delivery of effective, efficient clinical care and self-management support



# CLINICAL MANAGEMENT: Health care organization & Delivery system design



# Il compito a casa (o a scuola)

Gentile utente,

questa è un'email automatica inviata dalla Clinica Metabolica di Modena a cui lei aderisce.

In previsione della sua prossima visita che le abbiamo già confermato, la Clinica le chiede gentilmente di compilare i questionari che trova come link in questa email e il suo diario alimentare che trova come allegato word. Si tratta degli stessi questionari che le abbiamo precedentemente chiesto di compilare in sala d'attesa e che ora, se possibile, preferiamo acquisire prima dell'accesso alla clinica al fine di poterle restituire un commento già durante la visita medica.

Nel tentativo di offrire un approccio clinico centrato sull'utente, riteniamo indispensabile integrare i dati sanitari con i dati di salute raccolti dal paziente relativi allo stile e alla qualità di vita, al grado di disabilità e fragilità, alla performance neuro-cognitiva e al tono dell'umore, alle sindromi geriatriche e disfunzioni sessuali e alla sua esperienza di cura.

E' importante che i questionari siano completati in ogni domanda.

I dati acquisiti saranno trattati nel rispetto della sua privacy e archiviati all'interno della sua cartella clinica elettronica.

Inoltre, in allegato a questa email troverà un documento word da compilare relativamente al suo diario alimentare.

Legga attentamente le istruzioni presenti nella prima pagina del documento, in cui le viene indicato di riempire il suo diario alimentare quotidiano su tre giorni consecutivi; comprensivi di almeno un giorno festivo.

Successivamente al completamento del suo diario, invii una copia del file compilato a questo indirizzo email almeno un giorno prima dalla data della sua visita, affinché la dietista possa analizzare i dati raccolti e fornirle un riscontro.

**Apra quindi i link che trova elencati di seguito e risponda alle domande dei questionari. Essendo che il campo "codice paziente" è già precompilato, alla prima pagina, preme il tasto "Continue" per proseguire**

[Qualità della Vita - EQ5D-5L](#)

[Disturbi neurocogniti e depressione](#)

[Disturbi respiratori - COPD](#)

[Disabilità - ADL + IADL](#)

[Sindrome geriatrica - IIQ - FALLS](#)

[Funzionalità sessuale](#)

[Alimentazione](#)

# La Pagella!

venerdì 10 febbraio 2017

## Antropometriche / Stili di Vita

|                 |         |                           |                      |            |
|-----------------|---------|---------------------------|----------------------|------------|
| <b>BMI</b>      | 22,7    | <b>Circonferenza Vita</b> | 96                   | 10/02/2017 |
| <b>kcal</b>     | 1901    | <b>Attività Fisica</b>    | Nessuna              |            |
| <b>proteine</b> | 72      | <b>Alcool</b>             | Nessuna              |            |
| <b>Fumo</b>     | Nessuna | 0 [pack year]             | <b>Lipodistrofia</b> | Mista      |

## Storia HIV

|            |   |                   |    |               |     |
|------------|---|-------------------|----|---------------|-----|
| <b>CDC</b> | B | <b>CD 4 nadir</b> | 88 | <b>Durata</b> | 118 |
|------------|---|-------------------|----|---------------|-----|

## Disturbo Neurocognitivo


|             |            |
|-------------|------------|
| <b>GSI</b>  |            |
| <b>CESD</b> | 16 - lieve |

## Comorbosità

**Multi** SI

**Elenco** Sarcopenia, Dislipidemia, Ipertensione, CVD, IRC, Osteopenia/osteoporosi (OO), Ipovitaminosi D, Cirrosi, COPD, Neoplasie, Ipotiroidismo, Quality of Live, Ageing, Disturbi Neurocognitivi, Fragilità, Disability, Lipodistrofia,

## Sindromi Geriatriche

|                          |              |  |                                   |
|--------------------------|--------------|--|-----------------------------------|
| <b>Frailty Index</b>     | 0,31 - FRAIL |  |                                   |
| <b>Frailty Phenotype</b> | 2 - PRE      |  |                                   |
| <b>ASMI</b>              | 6,6          | Severe sarcopene   |                                   |
| <b>Total Lean</b>        | 51.760 [g]   |  | <b>Anno precedente</b> 52.088 [g] |
| <b>Hand Grip DX</b>      | 23,9         | G1 < 10 %  |                                   |
| <b>Hand Grip SX</b>      | 22,6         | G1 < 10 %  |                                   |

## Disabilità

|                 |      |                      |     |
|-----------------|------|----------------------|-----|
| <b>ADL KATZ</b> | 83   | <b>Walking Test</b>  | 3   |
| <b>IADL</b>     | 100% | <b>Fatigue</b>       | ... |
| <b>SPBB</b>     | 4,0  | <b>Polipharmacia</b> | SI  |

## Patient Related Outcomes

|                       |       |
|-----------------------|-------|
| <b>EQ 5D5L</b>        | 0,685 |
| <b>Autovalut. QOL</b> |       |
| <b>Questionari</b>    |       |



---

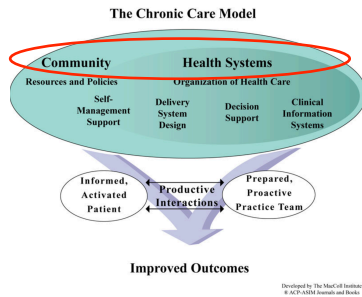
**CONSENSO INFORMATO PER LA CONSERVAZIONE DI MATERIALE BIOLOGICO  
E DEI DATI PERSONALI  
PRESSO UNITÀ OPERATIVA DI STRUTTURA SEMPLICE DI CLINICA METABOLICA  
AMBULATORIO HIV, A.O.U. POLICLINICO DI MODENA**

Il sottoscritto/a.....

(Nome e Cognome in stampatello)

È stato/a informato/a che:

- Il materiale biologico prelevato sarà conservato presso la “Struttura Semplice di Clinica Metabolica, Ambulatorio HIV, A.O.U. Policlinico di Modena”, responsabile Prof. Giovanni Guaraldi;
- I dati personali saranno conservati presso un Archivio Virtuale su server dell’Università di Modena e Reggio Emilia, ed accessibili solo mediante accessi protetti da *username* e *password*;



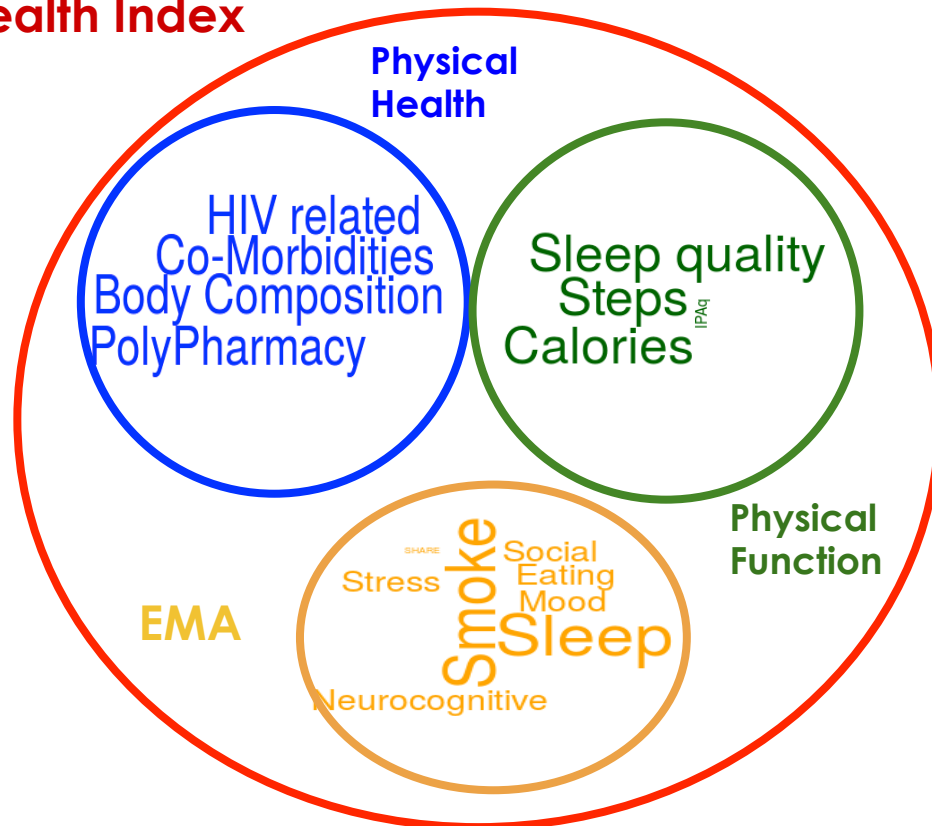
# Internet of Medical Things (IoMT)

In the healthcare domain several research projects developed Internet of Medical Things (IoMT) frameworks using



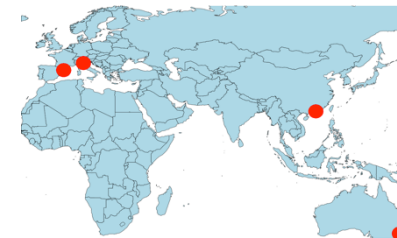
My Smart Age with HIV: Smartphone self-assessment of frailty and information - communication technology (ICT) to promote healthy ageing in HIV.

## Health Index



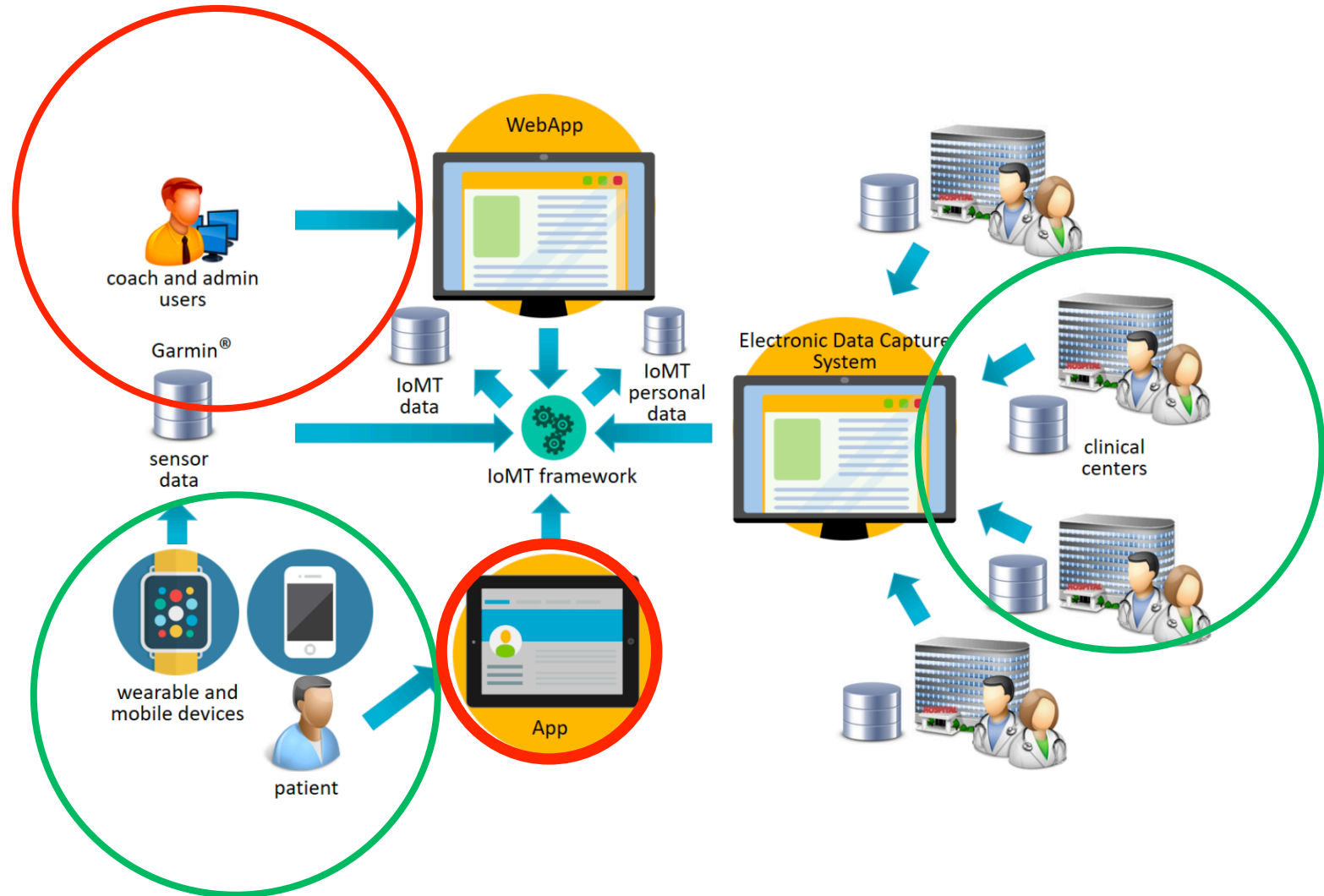
## PURPOSE AND OBJECTIVES OF THE STUDY

In this study we plan to empower elderly HIV patients via health promotion, assessing reduction in health deficit and improvement in quality of life using My Smart Age – application.





# MYSmartAWHiv: building up a HEALTH INDEX to improve Awareness in PLWHIV aged >50 years



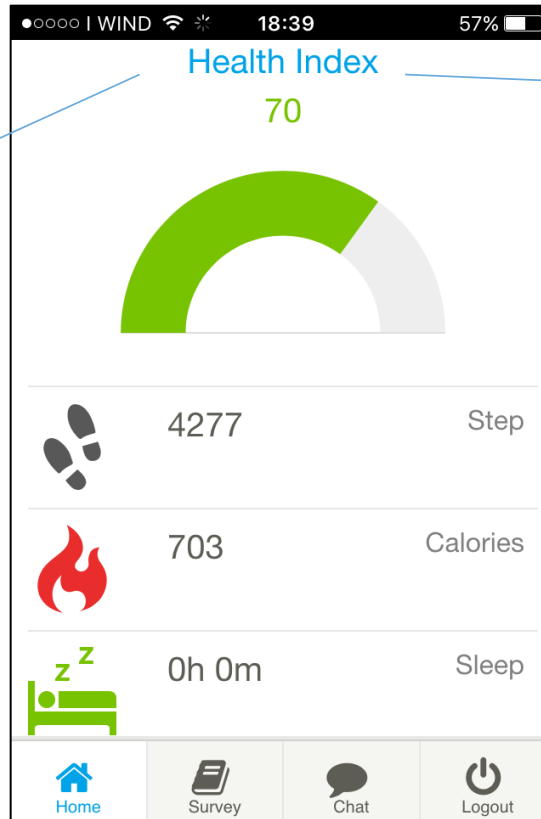


# MYSmartAWHiv: building up a HEALTH INDEX to improve Awareness in PLWHIV aged >50 years



Physiological data (daily)

- Steps
- Calories
- Sleep



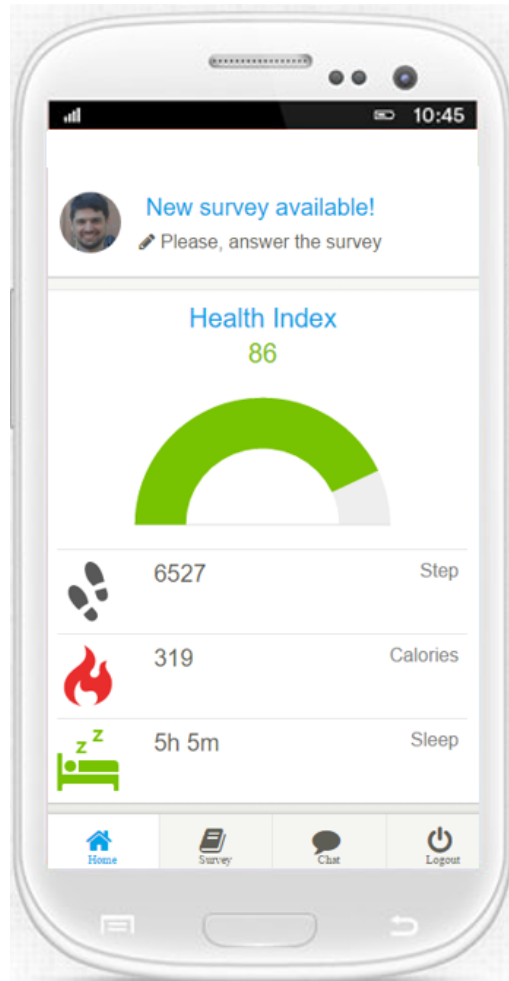
## Ecological Momentary Assessment (EMA)

EMA domains : physical activity, smoke, mood, stress level, social relationships, eating behaviours, and sleep quality

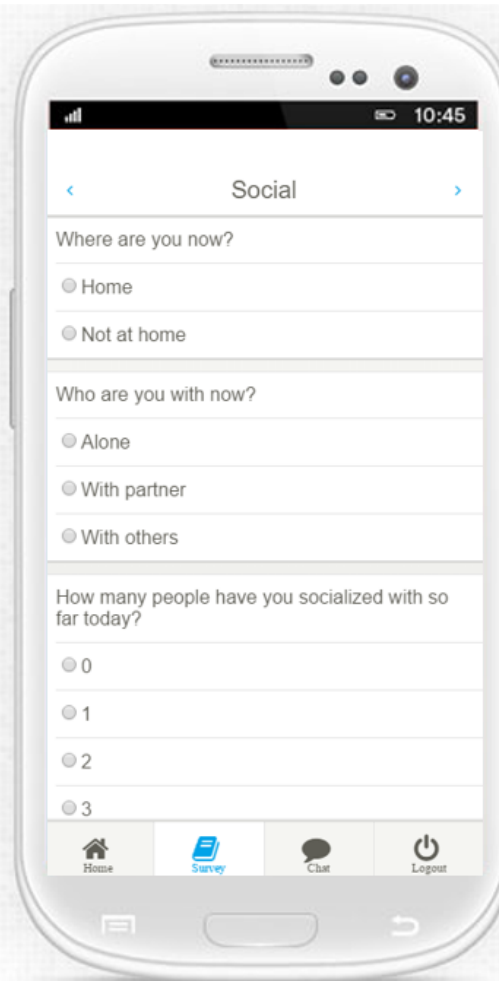
22 items/week



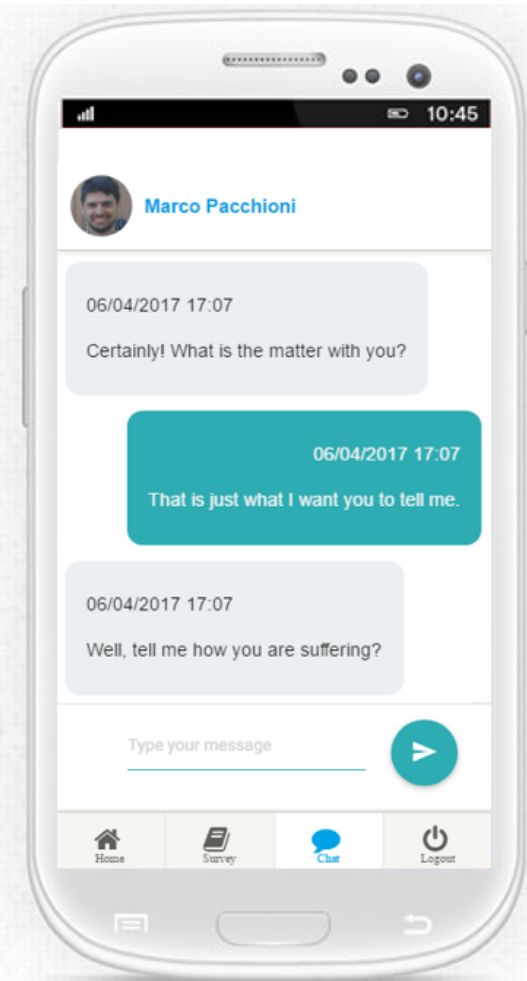
# MySAwH App



(a)



(b)



(c)

# Real John data

## Step



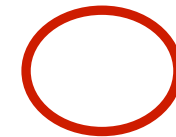
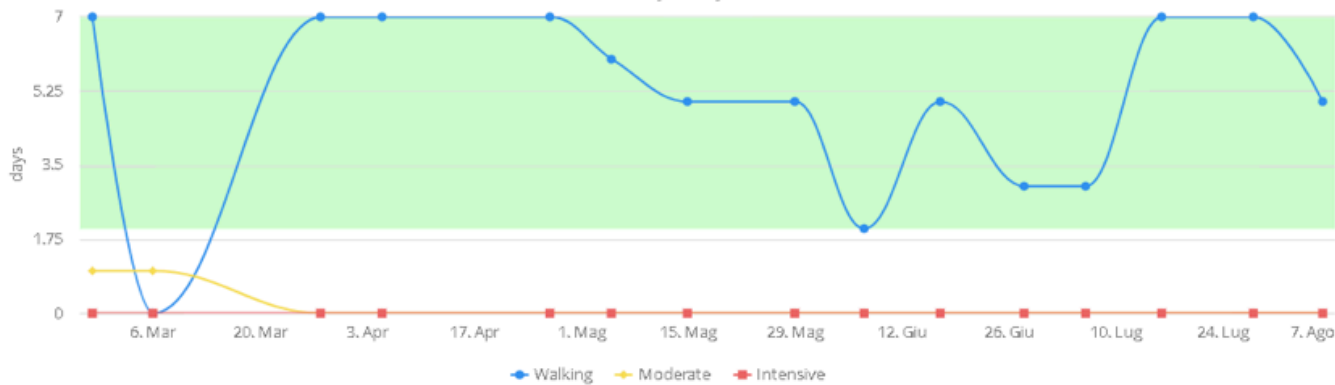
## Calories



VivoFit2  
Garmin

## Physical Activity

Weekly Activity



# Take home message

1. HIV is a chronic condition which implies a reshape the health system and in the community support
2. Total Patient Care is a a patient centered approach which implies a multidimensional assessment of patients needs
3. TPC contribute to the 90-90-90 target but goes beyond it
4. Patient and healthcare team are partner of the multidimensional assessment which define new health outcomes