



PRO.M.I.S.
Programma Mattone Internazionale Salute

“Innovative, integrated model for the prevention and management of frailty and care - The Sunfrail project”

CONFERENCE

“The commitment of European healthcare systems to prevent and manage the frailty challenge”

«Innovative, integrate model for the prevention and management of frailty and care. The Sunfrail Project»

05-06 July 2018

Ancona, Loggia dei Mercanti

Marcello Maggio

University-Hospital of Parma Emilia Romagna Region



The Project



EIP on AHA context

the network of the **Italian Reference Sites**

3rd EU Health Programme - WP 2014

To improve the **identification, prevention and management of frailty** and care of **multimorbidity** in **community dwelling persons (over 65)** of EU countries

Italian context

Ministry of Health, **Progetto Mattone Internazionale**



Partners



partner	organisation	acronym
RS LP1	Regione Emilia-Romagna – Agenzia Sanitaria e Sociale Regionale – I	RER-ASSR
	Aster - Società Consortile Per Azioni – I	ASTER
RS PP2	Regione Piemonte – I	RHAP
RS PP3	Regione Liguria – I	LIGURIA
	Galliera Hospital	Affiliated
RS PP4	Azienda Ospedaliera Universitaria Federico II, R. Campania – I	
RS PP5	Centre Hospitalier Universitaire De Toulouse – F	GERONTOPOLE
RS PP6	Centre Hospitalier Universitaire Montpellier – F	CHRU
RS PP7	Universytet Medyczny W Lodzi – PL	LODZ
RS PP8	Universidad De La Iglesia De Deusto – SP	DEUSTO
RS PP9	Regional Health & Social Care Board of Northern Ireland – UK	HSCB
PP10	European Regional and Local Health Authorities Asbl – BE	EUREGHA
RS PP11	CARSAT Languedoc Roussillon – F	CARSAT

Definition of Frailty



PHYSICAL VS. BIO-PSYCHOSOCIAL MODEL

PHYSICAL

Biological - age, sex

Diseases

Function- walking speed

Life styles - physical activity, nutrition...

Risk factors - smoke, alcohol...

BIO-PSYCHOSOCIAL

Well being (physical, psychological)

Independent living

Socialization

Resources - health care, social interaction, sport, leisure

Early identification (Risk factors)

Prevention of disability

REVERSIBILITY

Bridging the gap between Request and Services Offer

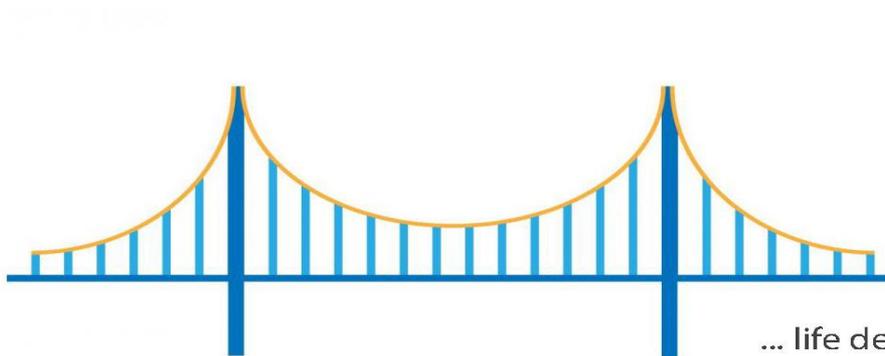


BRIDGING THE GAP

Need for independence ——— FRAILITY? ——— State of...



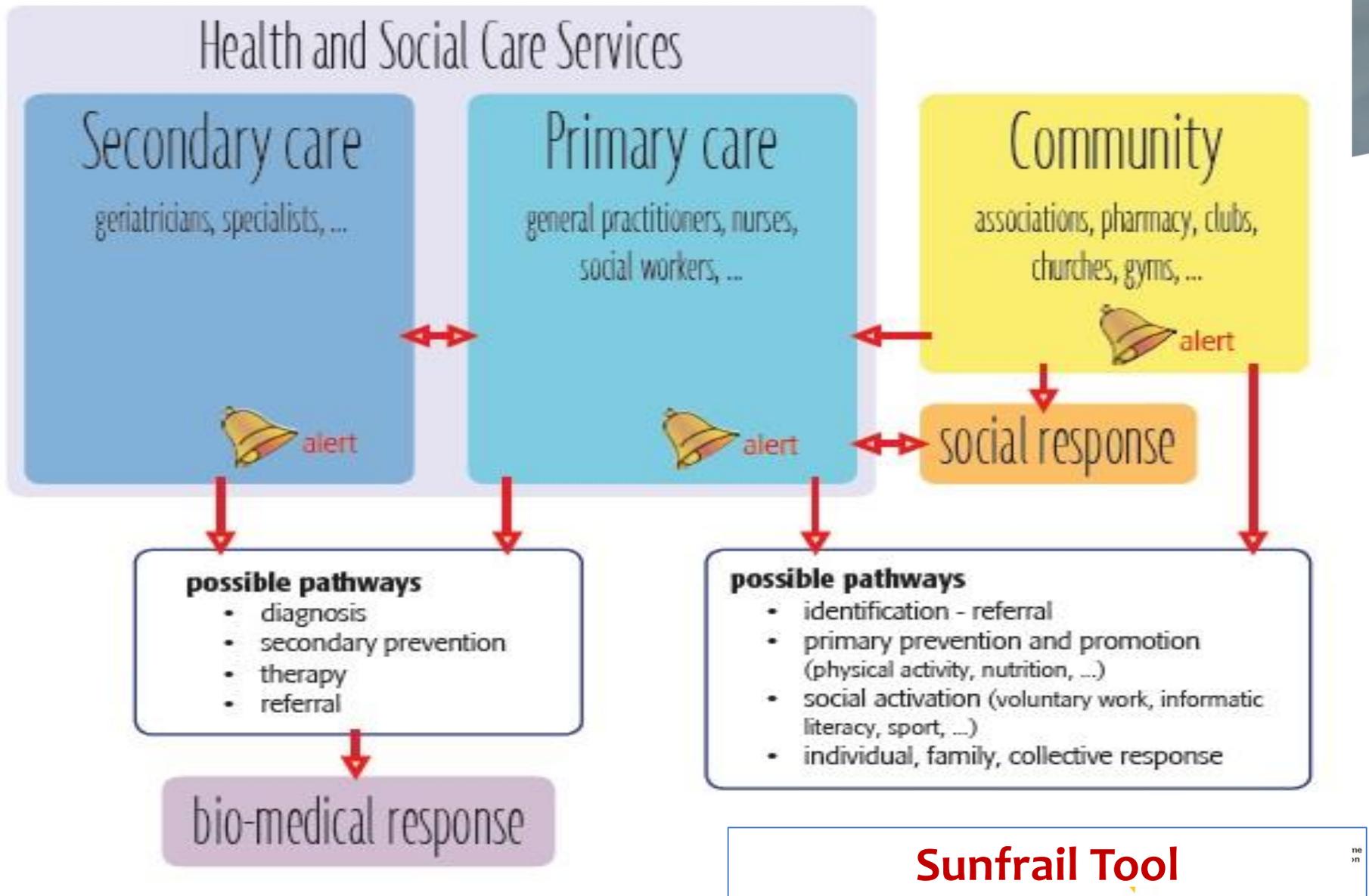
- * playing with grandsons
- * driving * dancing * walking



... life decline and extreme vulnerability characterized by weakness and decreased physiologic reserve contributing to increased risk for falls, institutionalization, disability, death.

- ✓ **Risk factors**
- ✓ **Prevention**
- ✓ **Cultural, organizational barriers to services**
- ✓ **Multidisciplinary approach**

Sunfrail Model on Frailty and Multimorbidity



SUNFRAIL TOOL

QUESTIONNAIRE NUMBER

ID

Date and place

PROFESSIONALS

Nurse GPs Other Professionals

Professional

Social Worker Community Actor Caregiver

BENEFICIARIES

Gender

Age

Level of education

M

65-74

Low (Without studies, Primary School)

F

75-85

Medium (Secondary school, or vocational degree)

High (University, Master or PhD degree)

Questions

1. Do you regularly take 5 or more medications per day?

Yes

No

2. Have you recently lost weight such that your clothing has become looser?

Yes

No

3. Your physical state made you walking less during the last year?

Yes

No

4. Have you been evaluated by your GP during the last year?

Yes

No

5. Have you fallen 1 or more times during the last year?

Yes

No

6. Have you experienced memory decline during the last year?

Yes

No

7. Do you feel lonely most of the time?

Yes

No

8. In case of need, can you count on someone close to you?

Yes

No

9. Have you had any financial difficulties in facing dental care and health care costs during the last year?

Yes

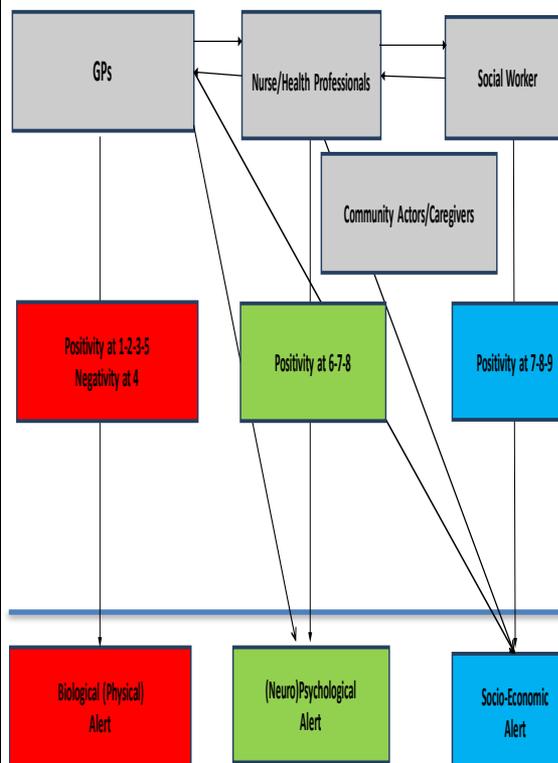
No

Sunfrail Tool



QUESTIONNAIRE NUMBER		ID
Date and place		
PROFESSIONALS		
<input type="checkbox"/> Nurse <input type="checkbox"/> GPs <input type="checkbox"/> Other Professionals <input type="checkbox"/> Social Worker <input type="checkbox"/> Community Actor <input type="checkbox"/> Caregiver		
BENEFICIARIES		
Gender	Age	Level of education
<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> 65-74 <input type="checkbox"/> 75-85	<input type="checkbox"/> Low (Without studies, Primary School) <input type="checkbox"/> Medium (Secondary school, or vocational degree) <input type="checkbox"/> High (University, Master or PhD degree)
Questions		
1. Do you regularly take 5 or more medications per day?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Have you recently lost weight such that your clothing has become looser?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. Your physical state made you walking less during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4. Have you been evaluated by your GP during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5. Have you fallen 1 or more times during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
6. Have you experienced memory decline during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
7. Do you feel lonely most of the time?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
8. In case of need, can you count on someone close to you?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
9. Have you had any financial difficulties in facing dental care and health care costs during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

flow chart



pathways

Request GP visit	<input type="checkbox"/>
Request Specialist-Geriatrician evaluation	<input type="checkbox"/>
Diagnostic Evaluation	<input type="checkbox"/>
Social Support	transportation for social activity/services, Nutritional Support, economic support, leisure and community and social activities
Proactive & Preventive Interventions	<input type="checkbox"/>
Physical Exercise	<input type="checkbox"/>
Psychological and/or Cognitive support	<input type="checkbox"/>
Other Pathways	<input type="checkbox"/>
Relevant but not available	<input type="checkbox"/>
Non-relevant	<input type="checkbox"/>



Sunfrail Tool Preliminary Results

Study Population	N=651	%
Reference Sites		
Deusto University, Spain	105	16,13
Galliera Hospital, Liguria	194	29,8
HSCB, Northern Ireland	127	19,51
Medical University of Lodz, Poland	114	17,51
University of Naples Federico II	111	17,05
Beneficiaries		
Gender		
F	372	57,14
M	279	42,86
Age Class		
65-74	222	34,1
75-85	429	65,9
Education Level		
High (University, Master or PhD degree)	123	18,89
Medium (Secondary school, or vocational degree)	315	48,39
Low (Without studies, Primary School)	213	32,72

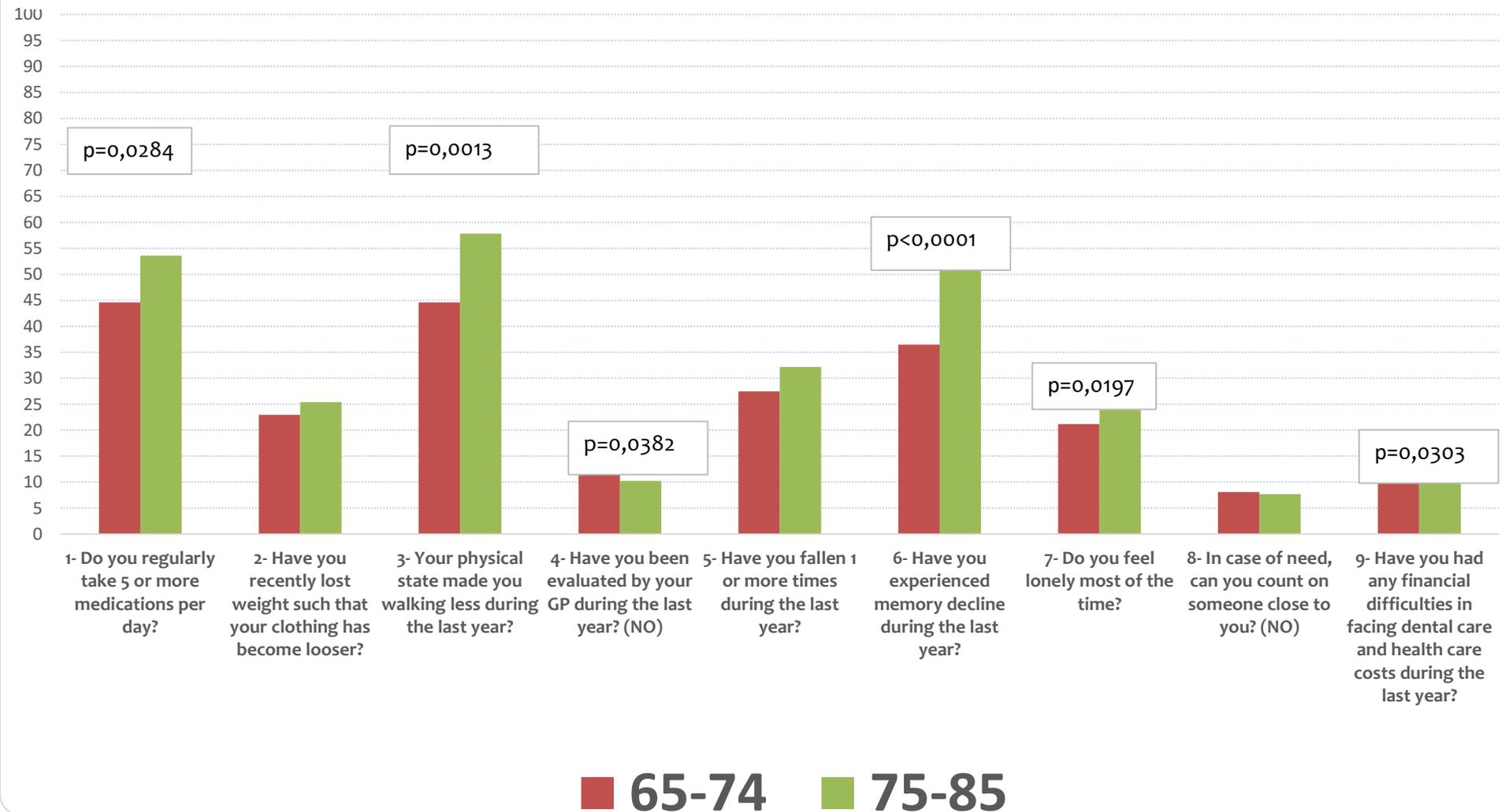
Alerts generated by Sunfrail Tool in different settings



Questions	Total n=651	Secondary Care (Outpatient) (n=161)	Primary Care n=363	Community n=127
	%	%	%	%
1- Do you regularly take 5 or more medications per day?	50,54	65,22	42,7	54,33
2- Have you recently lost weight such that your clothing has become looser?	24,58	36,02	21,76	18,11
3- Your physical state made you walking less during the last year?	53,3	64,6	46,83	57,48
4- Have you been evaluated by your GP during the last year? (NO)	12,29	10,56	11,85	15,75
5- Have you fallen 1 or more times during the last year?	30,57	42,86	29,48	18,11
6- Have you experienced memory decline during the last year?	49,62	60,87	55,37	18,9
7- Do you feel lonely most of the time?	26,57	31,06	26,72	20,47
8- In case of need, can you count on someone close to you? (NO)	7,83	8,7	9,37	2,36
9- Have you had any financial difficulties in facing dental care and health care costs during the last year?	14,75	22,98	14,88	3,94

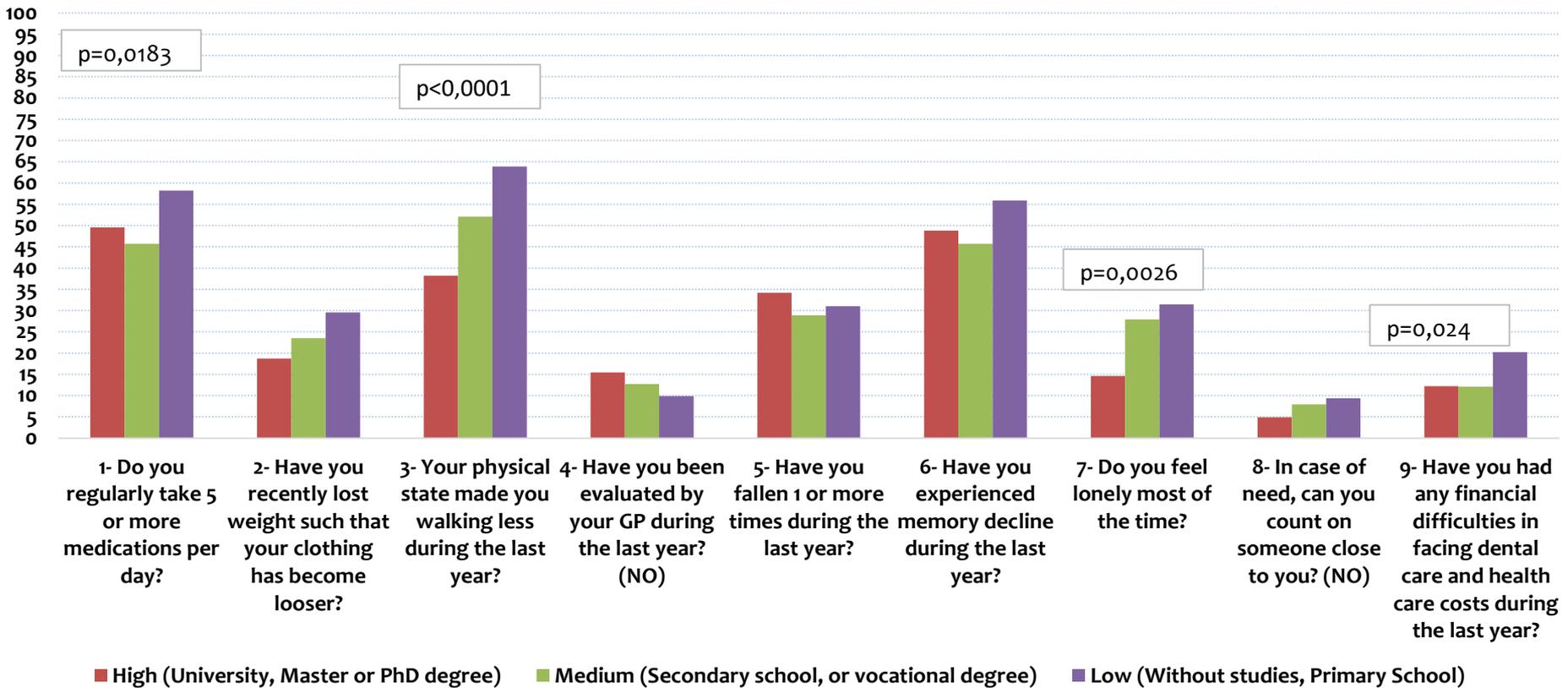


% of positive items by Age group





% of positive items by education level



Confirmation of Sunfrail Tool Alerts with Specialistic Tests

Questions			Naples n=101						Poland n=114						R. Liguria N=194					
			n	media	ds	diff*	ic95%	p-value	n	media	ds	diff*	ic95%	p-value	n	media	ds	diff*	ic95%	p-value
1- Do you regularly take 5 or more medications per day?	n. medication per day	no	33	2,818	1,467				17	3,529	1,772				109	2,954	1,734			
		yes	68	7,529	2,216	4,711	3,886-5,536	<0,0001	35	7,229	2,591	3,699	2,274-5,124	<0,0001	85	7,082	2,117	4,119	3,575-4,664	<0,0001
3- Your physical state made you walking less during last year?	4-m WS (0,8 m./sec.)	no	31	0,821	0,06				28	1,243	0,2047*				98	1,249	0,291			
		yes	70	0,365	0,127	0,456	0,408-0,503	<0,0001	24	1,069	0,281	0,174	0,041-0,307	0,033	94	0,995	0,305	0,254	0,169-0,338	<0,0001
6- Have you experienced memory decline during the last year?	MMSE (<24)	no	34	25,621	4,123				23	29,348	1,071				76	27,79	2,271			
		yes	63	20,656	3,597	4,965	2,531-7,399	0,002	29	28,655	1,518	0,693	-0,069-1,455	0,082	117	26,684	3,458	1,091	0,198-1,984	0,017

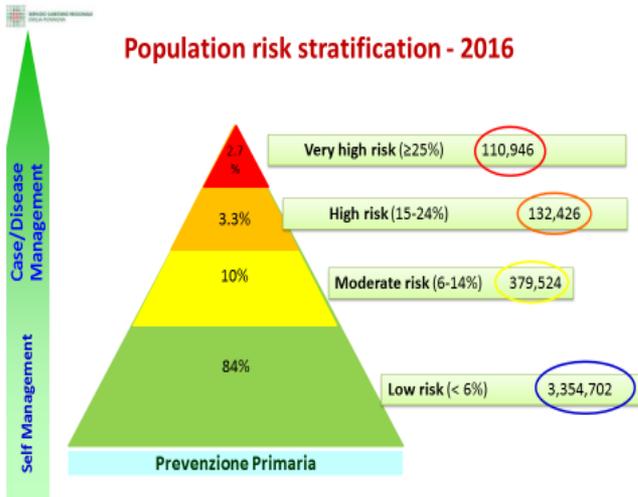
Good Practices Identified



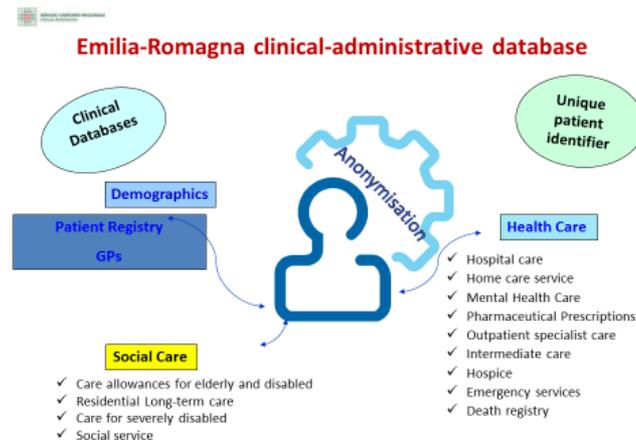
33 GPs Identified!



a regional predictive model to identify patients* at high risk of hospitalization and frailty



Population 18+ = 3,977,598



Categorie di Rischio di Ospedalizzazione e morte		
	Rischio Previsto	
Ad rischio molto alto	$\geq 25\%$	Rappresenta circa il 4% della popolazione adulta
Ad alto rischio	fra il 15 e il 24%	Rappresenta circa il 6% della popolazione
A rischio moderato	fra il 6% e il 14%	
A basso rischio	$\leq 5\%$	Rappresenta circa il 75% della popolazione - il rischio è inferiore al livello medio di ospedalizzazione

* Economic Evaluation of Risk Stratification & Impact on Outcome Indicators

The application of Community Health in Emilia-Romagna: the Risk Profile (Risk-ER)

Use of independent variable:

➤ Demographic Characteristics:

- age
- sex
- place (city, flat land, ill, mountain)

➤ Indicators of morbidity and disease severity

- **Clinical Severity** (circa 500 categories diagnostiche definite in base alla localizzazione, alla eziologia e al grado di diffusione della patologia, utilizza i codici ICD9CM)
- Body system or Etiology Group

➤ Indicators of quality in Care Profiles of Primary Care Nuclei:

- **Polipharmacological prescription**
- Potential drug/drug interaction
- Potential inappropriate drugs ad
- **Adherence to Regional guidelines (adherence to PDTA)**

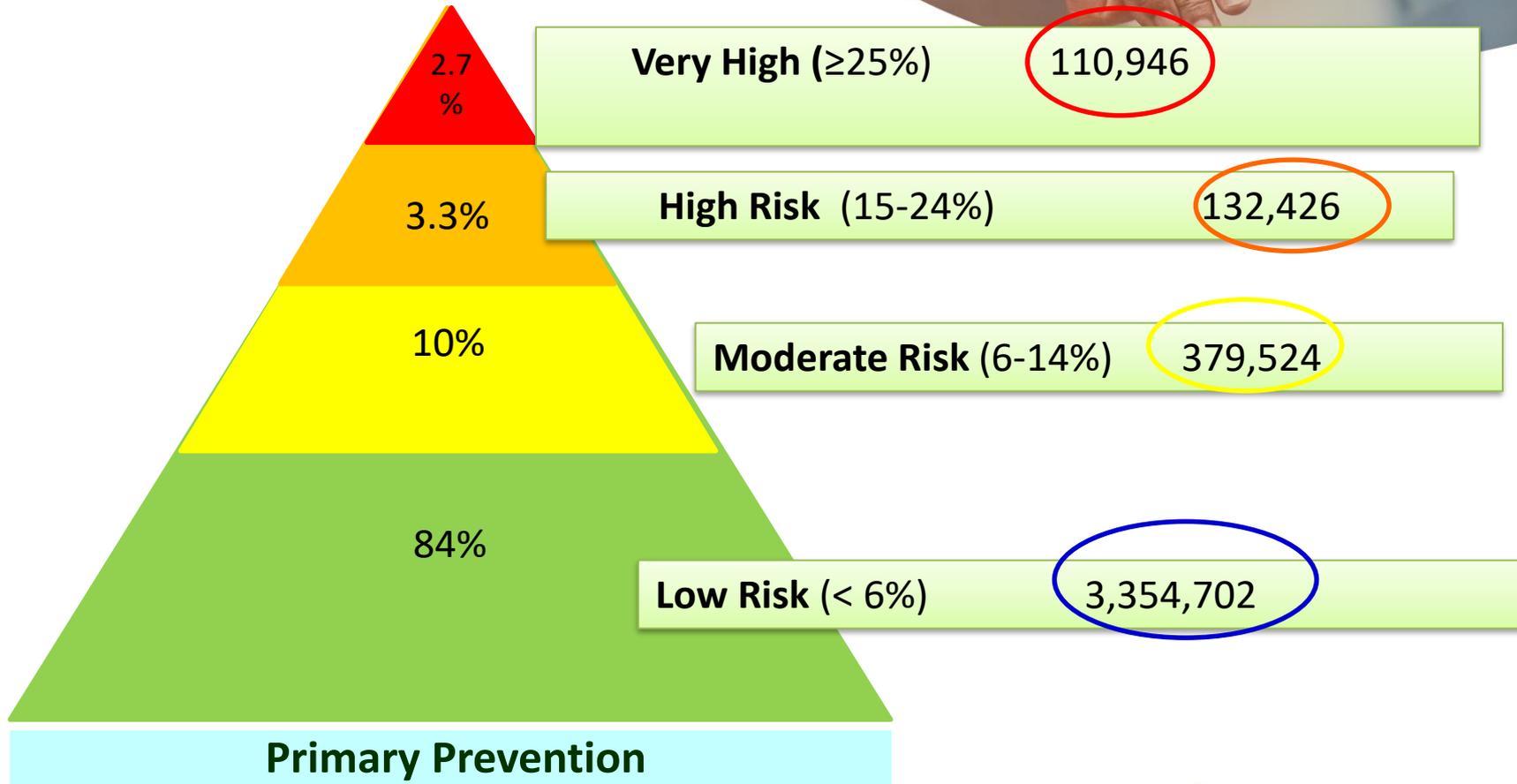
➤ Measures of services utilization as proxy of complexity: hospitalization, admission to emergency department, specialistic, ecc...



Risk Score – 2016:

High level of Accuracy: C statistic=0.85

Case/Disease Management
Self Management



Population ≥ 18 - N= 3,977,598



2 reports to support Casa della Salute team

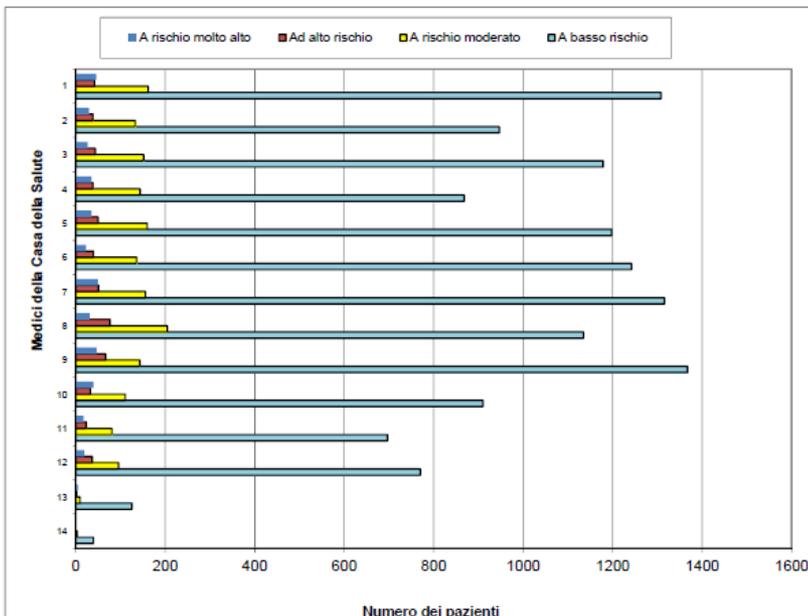
1 Summary from CdS

Casa della Salute: Crevalcore	Distretto: PIANURA OVEST
Sommario - Pazienti adulti (n=15337)	

I dati dei pazienti della Casa della Salute sono relativi ai servizi sanitari utilizzati nell'anno 2013. Tali dati sono stati quindi usati per predire nella popolazione adulta il rischio di ospedalizzazione o morte per le condizioni selezionate per il 2014.

A rischio molto alto	Il rischio previsto di ospedalizzazione è $\geq 25\%$	Rappresenta circa il 4% della popolazione
Ad alto rischio	Il rischio previsto di ospedalizzazione è fra il 15 e il 24%	Rappresenta circa il 6% della popolazione
A rischio moderato	Il rischio previsto di ospedalizzazione è fra il 6 e il 14%	Rappresenta circa il 15% della popolazione – l'intervallo di rischio è stato scelto in base al livello medio di rischio di ospedalizzazione o morte della popolazione adulta
A basso rischio	Il rischio previsto di ospedalizzazione è $\leq 5\%$	Rappresenta circa il 75% della popolazione - Il rischio è inferiore al livello medio di rischio di ospedalizzazione o morte della popolazione adulta

Numero dei pazienti per tutti i medici nella Casa della Salute in base alla categoria di rischio di ospedalizzazione



1 individual risk profile

Paziente: 1094553 Patient

Sesso: F Età: 44

Rischio di ospedalizzazione previsto per il 2013:

Molto alto

Il grafico mostra il cambiamento nel tempo del rischio di ospedalizzazione previsto per il paziente



Questo documento è un sommario delle informazioni di natura amministrativa per un paziente previsto a probabile 'rischio molto alto' di ospedalizzazione nel 2013 in base ai consumi sanitari del 2012.

Patologie croniche (in base al sistema o eziologia)

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Cardiovascolari | <input type="checkbox"/> Genitourinarie | <input type="checkbox"/> Oftalmologiche |
| <input type="checkbox"/> Dermatologiche | <input type="checkbox"/> Ginecologiche | <input type="checkbox"/> Otorinolaringoiatriche |
| <input type="checkbox"/> Ematologiche | <input type="checkbox"/> Immunologiche | <input checked="" type="checkbox"/> Psichiatriche |
| <input type="checkbox"/> Endocrine | <input type="checkbox"/> Infettive | <input type="checkbox"/> Respiratorie |
| <input checked="" type="checkbox"/> Epatiche | <input type="checkbox"/> Muscoloscheletriche | <input type="checkbox"/> Sistema Genitale Maschile |
| <input checked="" type="checkbox"/> Gastrointestinali | <input checked="" type="checkbox"/> Neurologiche | <input type="checkbox"/> Tumoriali |

Ospedalizzazione 2012 – N. di ricoveri occorsi al paziente: 1

N. 1 Degenza ordinaria presso Ospedali Riuniti-Pr

02/01/12 - 02/02/12 gg_deg: 31 Dimissione: Ordinaria a domicilio

Patologia principale del ricovero: 785.59 Altro Shock Senza Menzione Di Trauma

Comorbidità: 789.5 Ascite

571.2 Cirrosi Epatica Alcolica

570 Necrosi Acuta E Subacuta Del Fegato

307.1 Anoressia Nervosa

070.54 Epatite C Cronica Senza Menzione Di Coma Epatico

Procedura: 42.91 Legatura Di Varici Esofagee

Pronto Soccorso 2012 – N. : 3

Presso Ospedali Riuniti-Pr

13/02/12 - 13/02/12

Altri Sintomi O Disturbi

Main Results of the Model



Sunfrail Model



Moments of Success



European Parliament European Commission



CLUSTER MEETING ON NON-COMMUNICABLE DISEASES

held as part of WHINN - Week of Health and INNOvation

SUNFRAIL - Reference Sites Network for Prevention and Care of Frailty and Chronic Conditions in community dwelling persons in EU countries

Marcello Maggio

11 October 2017

limits and potential
of the Public Health Programme

SUCCESS STORIES OF THE HEALTH PROGRAMME

SUNFRAIL

Emilia-Romagna Region
Mirca Barbolini & Team



at the European Parliament, Brussels, 22nd November 2017



Reference Sites Network for Prevention and Care of Frailty and Chronic Conditions in community dwelling persons of EU Countries



The SUNFRAIL Project has received funding from the European Union's Health Programme 2014-2020

SUNFRAIL SEMINAR
EIP-AHA and Sunfrail: Preliminary Results and Good Practices
Albert Borschette Conference Centre - European Commission
Emilia Romagna Region
Mirca Barbolini - M.L. Moro & SUNFRAIL TEAM
Bruxelles, 5 th. April 2017

sunfrail Reference Sites Network for Prevention and Care of Frailty and Chronic Conditions in community dwelling persons of EU Countries

Co-funded by the Health Programme of the European Union

The SUNFRAIL Project has received funding from the European Union's Health Programme 2014-2020



Co-funded by the Health Programme of the European Union

Elements of success



Sunfrail Tool

Easy to be understood and used from professionals and beneficiaries
Improves the perception and access from beneficiaries
Promotes the intersectorial **collaboration and efficiency** (social-health)
Multidisciplinary approach to frailty (HR Tool)

Applicability and Replicability

Applied in other EU projects, by health services and GPs

Pilot Studies: Holland and RER

Request to be adopted : European and Italian Regions

Collaboration with **Joint Actions UE (Advantage - Chrodis)**

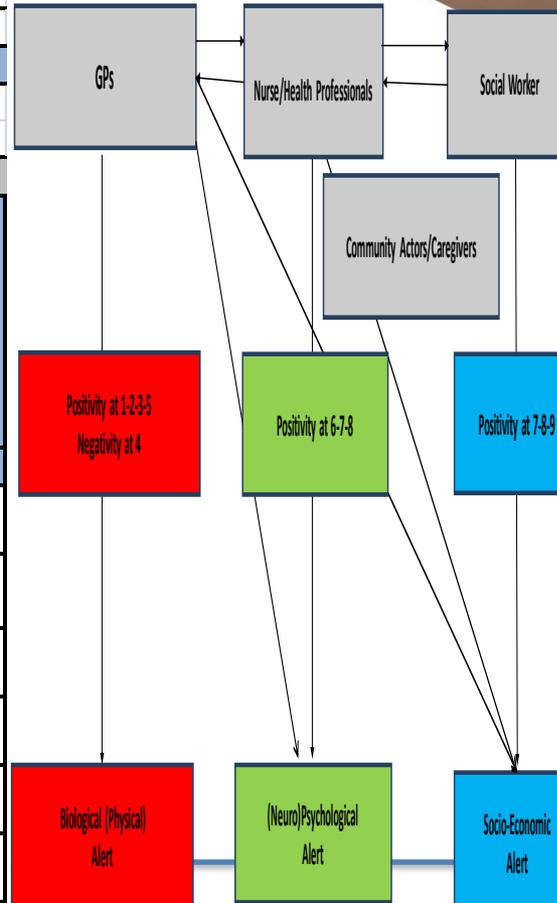


Significance of Sunfrail Approach

Check-List

QUESTIONNAIRE NUMBER		ID
Date and place		
PROFESSIONALS		
<input type="checkbox"/> Nurse <input type="checkbox"/> GPs <input type="checkbox"/> Other Professionals		
<input type="checkbox"/> Social Worker <input type="checkbox"/> Community Actor <input type="checkbox"/> Caregiver		
BENEFICIARIES		
Gender	Age	Level of education
<input type="checkbox"/> M	<input type="checkbox"/> 65-74	<input type="checkbox"/> Low (Without studies, Primary School)
<input type="checkbox"/> F	<input type="checkbox"/> 75-85	<input type="checkbox"/> Medium (Secondary school, or vocational degree)
<input type="checkbox"/> High (University, Master or PhD degree)		
Questions		
1. Do you regularly take 5 or more medications per day?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Have you recently lost weight such that your clothing has become looser?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. Your physical state made you walking less during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4. Have you been evaluated by your GP during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5. Have you fallen 1 or more times during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
6. Have you experienced memory decline during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
7. Do you feel lonely most of the time?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
8. In case of need, can you count on someone close to you?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
9. Have you had any financial difficulties in facing dental care and health care costs during the last year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Alert



Pathways Activation

Request GP visit	<input type="checkbox"/>
Request Specialist-Geriatrician evaluation	<input type="checkbox"/>
Diagnostic Evaluation	<input type="checkbox"/>
Social Support	
transportation for social activity/services, Nutritional Support, economic support, leisure and community and social activities	<input type="checkbox"/>
Proactive & Preventive Interventions	
Physical Exercise	<input type="checkbox"/>
Psychological and/or Cognitive support	<input type="checkbox"/>
Other Pathways	<input type="checkbox"/>
Relevant but not available	<input type="checkbox"/>
Non-relevant	<input type="checkbox"/>

**Confirm theAlert
By CGA**



Co-funded by the Health Programme of the European Union

Sunfrail experimental phase: in the arena of Case della Salute

SUNFRAIL CHECK LIST (compilata dal MMG)	OB 1: <i>Criterion validity</i> (K di Cohen)	OB 2: <i>Criterion Validity</i> (Capacità predittiva - VPP, VPN)	OB 2: <i>Construct validity</i> (Chi-quadro)
1. Assume regolarmente 5 o più farmaci?			
2. Ha perso peso, non intenzionalmente, durante lo scorso anno a tal punto che i vestiti sono diventati larghi?			
3. Il suo stato fisico l'ha portata a camminare meno durante lo scorso anno?			Test del cammino
4. È stato visitato dal suo medico di famiglia durante lo scorso anno?			
5. È caduto una o più volte durante lo scorso anno?			Test del cammino
6. Ha notato una perdita di memoria durante lo scorso anno?			MMSE
7. Si è sentito solo per la maggior parte del tempo?			Loneliness Scale
8. In caso di necessità, può contare su qualcuno a lei vicino?			Loneliness Scale
9. Ha avuto delle difficoltà economiche, per far fronte a cure dentali o spese sanitarie, durante lo scorso anno?			
<p><i>In base alla Sua conoscenza del paziente e alle risposte alle domande della checklist, pensa che il paziente si possa trovare in una condizione di fragilità, definita come perdita di risorse in diversi domini funzionali (fisico, cognitivo, sociale), che aumentano il rischio di esiti avversi?</i></p>	GP judgment	Final GEU judgement	

THANKS FOR YOUR ATTENTION

Marcello Maggio
Mirca Barbolini
Maria Luisa Moro
Imma Cacciapuoti
SUNFRAIL Team

www.sunfrail.com

Sunfrail@regione.emilia-romagna.it

A Randomized Controlled Pilot Trial of Interventions to Improve Functional Recovery After Hospitalization in Older Adults: Feasibility and Adherence

Rachel R. Deer,¹ Shawn M. Goodlett,¹ Steve R. Fisher,^{1,2} Jacques Baillargeon,³ Jared M. Dickinson,⁴ Mukaila Raji,^{1,5} and Elena Volpi^{1,5}



Figure 1. CON

Future Perspectives



Progressiva integrazione e valorizzazione di **percorsi esistenti** sulla Fragilità e Multimorbilità (sanitario, sociale, comunità)

Sviluppo di **strumenti digitali** per l'ampia diffusione dello strumento Sunfrail

Collegamento con strategie e strumenti per l'**identificazione** della **popolazione a rischio** (ospedalizzazione e disabilità)

Diffusione dell'**approccio Multidisciplinare** alla fragilità e multimorbilità

