Gli strumenti di Valutazione Multidimensionale
interRAI in Italia

interRAI Acute Care
per il governo del paziente fragile

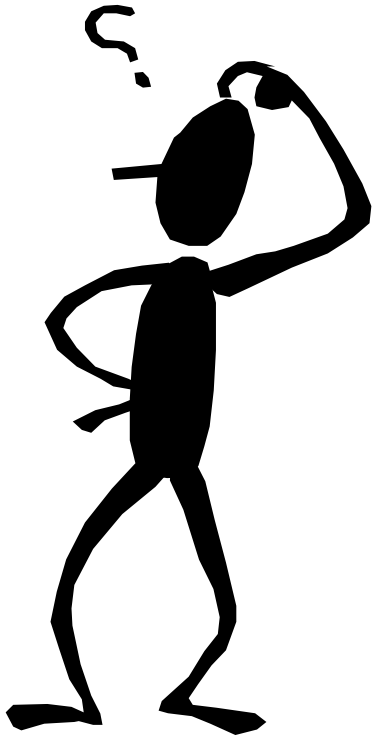
Graziano Onder
Università Cattolica del Sacro Cuore - Roma

Roma, 23 settembre 2015

ITALIA LONGEVA
RETE NAZIONALE DI RICERCA SULL'INVECCHIAMENTO E LA LONGEVITA' ATTIVA

La Valutazione Multidimensionale in ospedale per acuti?

- Necessità di accorciare la degenza
- Necessità di focalizzarsi su problemi acuti
- Tempi ridotti



Necessità di Valutazione Multidimensionale?

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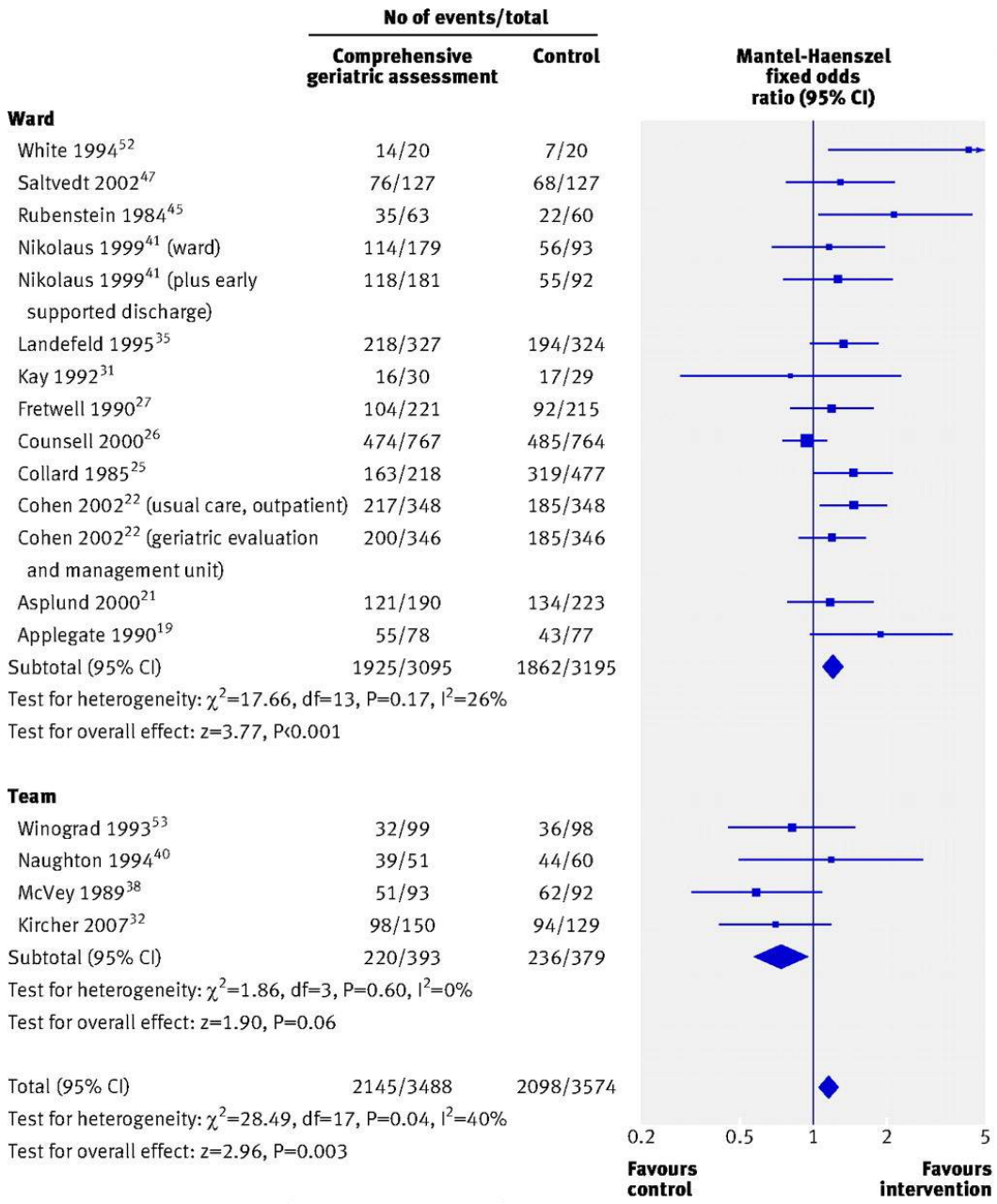

Comprehensive geriatric assessment for older adults admitted to hospital: meta-analysis of randomised controlled trials

BMJ 2011;343:d6553

Comprehensive geriatric assessment increases patients' likelihood of being alive and in their own homes after an emergency admission to hospital.

	Costs	
	Intervention	Control
Cohen 2002,[22] US:		
Geriatric unit-usual care outpatient *v* usual care inpatient-usual care outpatient	$36 592 (SD 1844)	$38 624 (SD 2037)
Geriatric unit-geriatric outpatient *v* usual care inpatient-geriatric outpatient	$35 935 (SD 1829)	$35 951 (SD 1827)
Collard 1985,[25] US:		
Choate	$4015.17 (SE 0.03)	$4545.13 (SE 0.03)
Symmes	$3591.42 (SE 0.03)	$4155.54 (SE 0.02)
Fretwell 1990,[27] US	$3148 (SD 7210)	$4163 (SD 18 406)
Applegate 1990,[19] US:		
Geriatric unit (rehab diagnosis) *v* usual care (rehab diagnosis)	$32 978 (SD 35 130)	$18 409 (SD 16 555)
Geriatric unit (medical/surgical diagnosis) *v* usual care (medical/surgical diagnosis)	$25 846 (SD 29 628)	$15 248 (SD 13 152)
Asplund 2000,[21] Sweden (Swedish kroner)	10 800 (IQR 9300-12 300)	12 800 (IQR 11 500-14 100)
Counsell 2000,[26] US	$5640	$5754
Hogan 1987,[30] Canada	$C98.36	$C77.68
Landefeld 1995,[35] US	$6608	$7240
Nikolaus 1999,[41] Germany (deutschmark):		
Geriatric unit-early supported discharge	3 365 000 ($1 922 400)	4 145 000 ($2 368 300)
Geriatric unit only	3 983 000 ($2 276 600)	
Rubenstein 1984,[45] US	$22 597	$27 826
Naughton 1994,[40] US	$4525 (SD 5087)	$6474 (SD 7000)
White 1994,[52] US	$23 906	$45 189

Many of the **hospital costs** seem to show a reduction in costs … Some trials reported greater costs in the treatment group for hospitals. If **nursing home** costs are taken into consideration, the potential benefit of comprehensive geriatric assessment might be greater.

BMJ 2011;343:d6553

Valutazione Multidimensionale – Problemi?

Mancanza di standardizzatione:

1. Organizzazione
2. Team members

Core Team Members & Processes of Care

	Trial	Organization							Core team members													
		Comprehensive assessment	MDT ≥1 weekly	Goal setting	Assessment tools	Protocols	Ward environment	OP follow-up	Attending geriatrician	Geriatric fellow	Trained nursing	Social work	Physiotherapy	Occupational therapy	Dietetics	Pharmacy	Speech and language	Audiology	Dentistry	Psychology	Pastoral care
Teams	Epstein[21]	•	•	○	•				•		•	•									
	Fretwell[22]	•	•	○	•				•		•	•	•			•					
	Gayton[23]	•	•	○					•		•	•	•	•							
	Hogan[24]	•	•	○					•		•		•								
	Hogan[25]	•	•	○				•	•		•	•	•	•	•						•
	Naughton[26]	•	•	•				•	•			•									
	Reuben[27]	•	•	○	•			•	•		•	•									
	Saltz[28]	•	•	○	•				•	•	•	•									
	Thomas[29]	•	•	○	•				•		•	•	•			•					
	Winograd[30]	•	•	○					•	•	•	•									
Wards	Applegate[12]	•	•	•				•	•		•	•	•	•	•	•	•	•			
	Asplund[13]	•	•	•					•		•		•	•	•						
	Cohen[14]	•	•	•	•			•	•		•	•									
	Collard[31]	•	•					•			•	•	•	•							
	Counsell[15]	•	•	•		•	•		•		•	•	•	•							
	Harris[16]	•										•	•	•							
	Landefeld[17]	•	•	•		•	•		•		•	•	•	•	•						
	Nikolaus[18]	•			•			•			•	•	•	•							
	Rubenstein[19]	•	•	•	•			•	•	•	•	•	•	•	•			•	•	•	
	Saltvedt[20]	•	•	•		•			•		•		•	•							

Ellis G British Medical Bulletin 2005; 71: 45–59

Valutazione Multidimensionale – Problemi?

Mancanza di standardizzazione:

1. Organizzazione
2. Team members
3. **Strumento di valutazione**

InterRAI AC

Strumento validato e adottato a livello internazionale

ITALIA LONGEVA
RETE NAZIONALE DI RICERCA SULL'INVECCHIAMENTO E LA LONGEVITA' ATTIVA

Contents lists available at ScienceDirect

Archives of Gerontology and Geriatrics

journal homepage: www.elsevier.com/locate/archger

Interrater reliability of the interRAI Acute Care (interRAI AC)

Nathalie I.H. Wellens [a], Aurélie Van Lancker [b], Johan Flamaing [b], Len Gray [c], Philip Moons [a], Geert Verbeke [d], Steven Boonen [b,e], Koen Milisen [a,b,*]

ABSTRACT

We examined the interrater reliability of the interRAI AC. An observational study was conducted on 3 geriatric wards. Two trained raters completed independently the interRAI AC between 24 and 48 h after admission. A sample of 100 patients (age 84.5 ± 5.6 years; 45% female) was analyzed. Interrater reliability was tested using observed agreement, kappa coefficients, and intraclass correlation coefficients. The overall kappa median value for nominal items was 0.82 (almost perfect). For items on ordinal level, both the overall weighted kappa median and the intraclass correlation coefficient median were 0.86 (almost perfect). According to conventional cut-offs for interpreting kappa statistics, reliability was almost perfect ($K \geq 0.81$) for 60% of all items, substantial ($0.60 < K \leq 0.80$) for 26%, moderate ($0.41 < K \leq 0.60$) for 10%, and poor ($K \leq 0.40$) for 4% of the items. The median observed agreement was 0.89. For 83% of the items, the observed agreement was greater than 0.80. This study showed substantial or almost perfect interrater reliability for 86% of the items. In addition to previous evidence, the current results suggest that the estimates of the interrater reliability of the interRAI AC are acceptable and provide preliminary evidence that the current version is appropriate for clinical application.

InterRAI AC

- Strumento validato e adottato a livello internazionale
- Continuità delle cure

The Hospital Journey

ED	Acute Care	Post - Acute Care	Post - Acute Community Care
CAM	CAM	FIM	Barthel
AMT	MMSE	MMSE	MMSE
	Waterlow	GDS	
	FRAT		
	MNA		

Result:
Inconsistent data format; high documentation burden; poor compliance; no data sharing

The Hospital Journey

InterRAI ED & interRAI AC **InterRAI PAC** **InterRAI HC**

Result:
Homogeneous data format; data sharing; continuity of care

RESEARCH ARTICLE Open Access

The interRAI Acute Care instrument incorporated in an eHealth system for standardized and web-based geriatric assessment: strengths, weaknesses, opportunities and threats in the acute hospital setting

Els Devriendt[1,2], Nathalie I H Wellens[1], Johan Flamaing[2,3], Anja Declercq[4], Philip Moons[1], Steven Boonen[2,3,5] and Koen Milisen[1,2*]

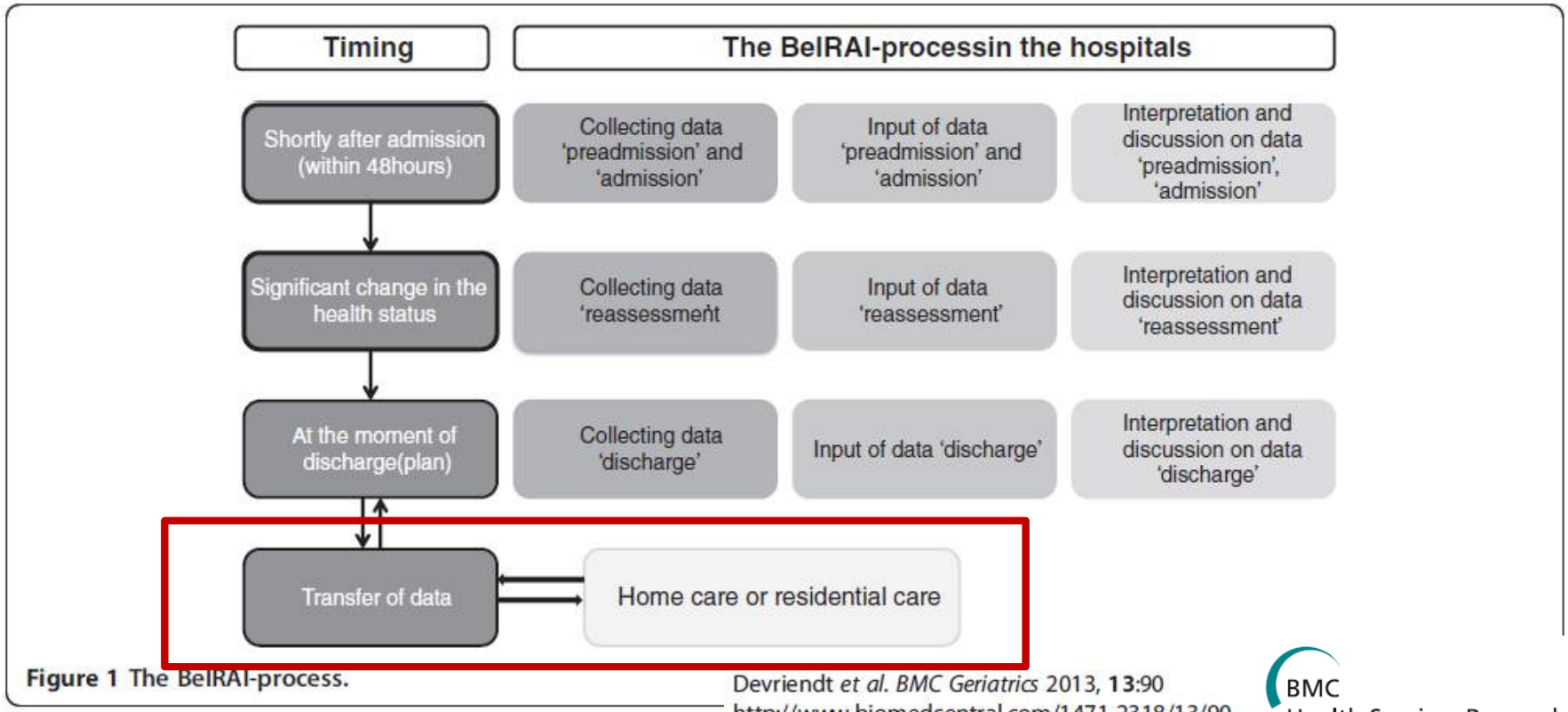

Figure 1 The BelRAI-process.

BMC Health Services Research

RESEARCH ARTICLE Open Access

The interRAI Acute Care instrument incorporated in an eHealth system for standardized and web-based geriatric assessment: strengths, weaknesses, opportunities and threats in the acute hospital setting

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The BelRAI-software allows **standardized transmural information transfer** and the **centralization** of medical, **allied health professionals and nursing data**. It is strictly secured and **follows strict privacy regulations**, allowing hospitals to **optimize (transmural) communication and interaction**

Devriendt *et al. BMC Geriatrics* 2013, **13**:90
http://www.biomedcentral.com/1471-2318/13/90

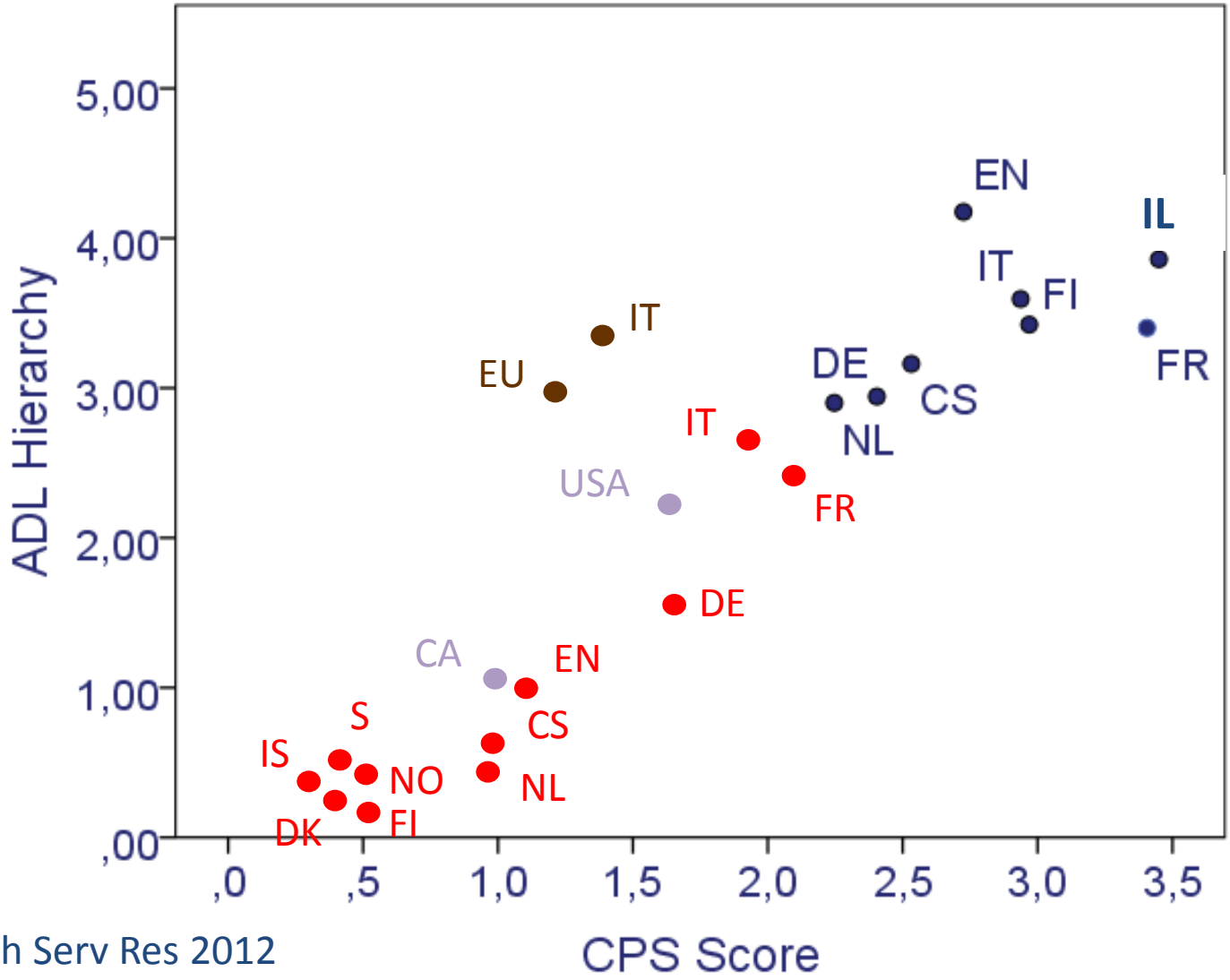
BMC Health Services Research

InterRAI AC

- Strumento validato e adottato a livello internazionale
- Continuità delle cure
- Confronto in diversi setting

Comparison of settings – InterRAI instruments

- SHELTER
  NH residents
- ADHOC
  HC patients
- Non EU
  HC patients
- AC patients



Onder G et al. BMC Health Serv Res 2012

InterRAI AC

- Strumento validato e adottato a livello internazionale
- Continuità delle cure
- Confronto in diversi setting
- Indicatori di qualità dell'assistenza

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Quality indicators for frail elderly hospitalised in acute care health settings

Fall during hospitalisation	**8%**
Pressure ulcer (new or worsening)	**8%**
Delirium during hospitalisation	**19%**
Functional decline (premorbid to discharge)	
Decline in ability to communicate	**2%**
Decline in cognitive function	**5%**
Decline in Activities of Daily Living (ADL)	**16%**
Decline in Instrumental ADL (IADL) function	**41%**
Decline in bladder or bowel continence	**10%**
Discharge to a higher level care	**22%**
Readmission within 28 days	**14%**

Brand *et al. BMC Health Services Research* 2011, **11**:281
http://www.biomedcentral.com/1472-6963/11/281

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Health Services Research

Quality indicators for frail elderly hospitalised in acute care health settings

Fall during hospitalisation	**8%**	**6%**
Pressure ulcer (new or worsening)	**8%**	**7%**
Delirium during hospitalisation	**19%**	**21%**
Functional decline (premorbid to discharge)		
Decline in ability to communicate	**2%**	**0%**
Decline in cognitive function	**5%**	**2%**
Decline in Activities of Daily Living (ADL)	**16%**	**21%**
Decline in Instrumental ADL (IADL) function	**41%**	**32%**
Decline in bladder or bowel continence	**10%**	**15%**
Discharge to a higher level care	**22%**	**15%**
Readmission within 28 days	**14%**	**20%**

Brand *et al. BMC Health Services Research* 2011, **11**:281
http://www.biomedcentral.com/1472-6963/11/281

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InterRAI AC

- Strumento validato e adottato a livello internazionale
- Continuità delle cure
- Confronto in diversi setting
- Indicatori di qualità dell'assistenza
- Supporto assistenziale

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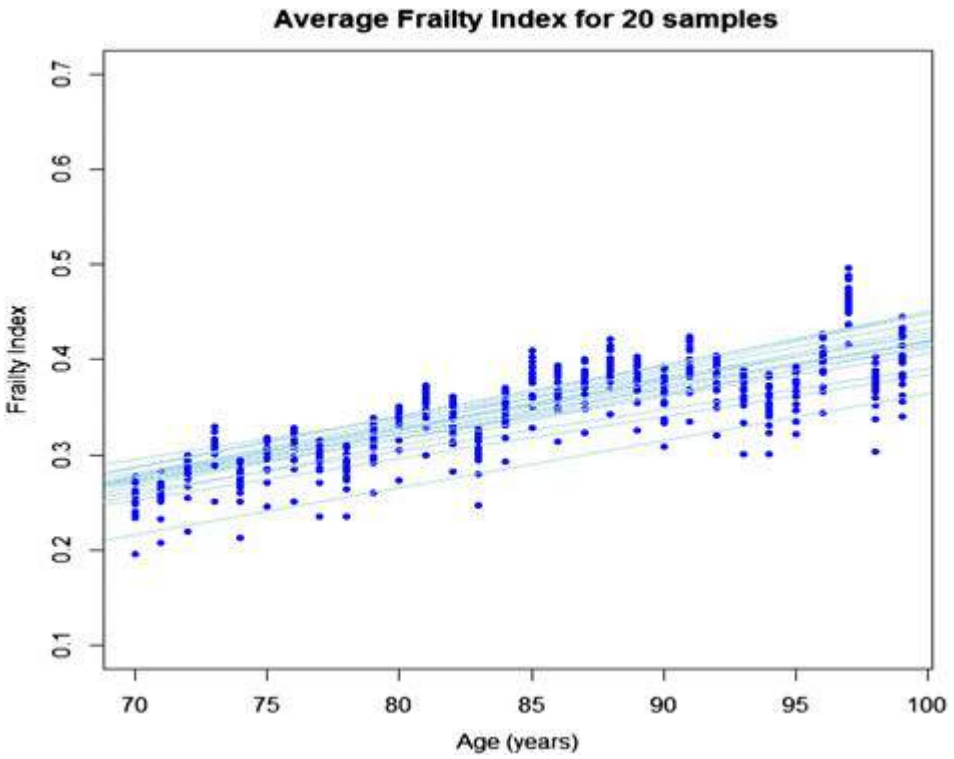
InterRAI AC - Assistenza

- **Identificare i pazienti fragili da riferire per valutazione**

Development of a frailty index from InterRAI AC

BMC Geriatrics 2015



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RESEARCH ARTICLE Open Access

Derivation of a frailty index from the interRAI acute care instrument

Ruth E Hubbard[1*], Nancye M Peel[1], Mayukh Samanta[2], Leonard C Gray[1], Brant E Fries[3], Arnold Mitnitski[4] and Kenneth Rockwood[4]

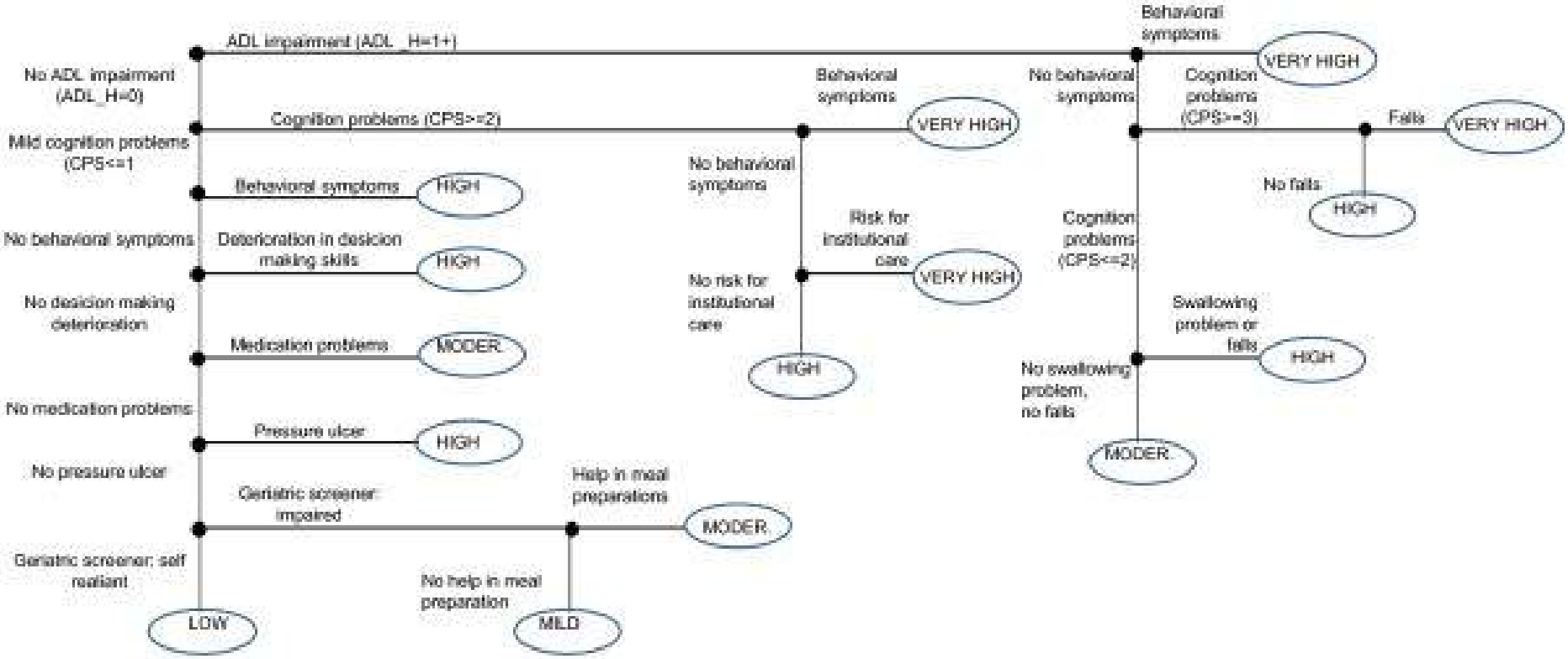
Quantification of **frailty status at hospital admission can be incorporated into an existing assessment system**, which serves other clinical and administrative purposes. This could **optimise clinical utility** and **minimise costs**. The variables used to derive the FI-AC are common to all interRAI instruments, and could be used to precisely measure frailty across the spectrum of health care.

Hubbard et al. BMC Geriatrics (2015) 15:27

InterRAI AC - Assistenza

- Identificare i pazienti fragili da riferire per valutazione
- **Pianificare la dimissione**

Method for Assigning Priority Levels for Acute Care (MAPLe-AC)



Noro *et al. BMC Medical Informatics and Decision Making* 2011, **11**:39
http://www.biomedcentral.com/1472-6947/11/39

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Medical Informatics & Decision Making

MAPLe-AC predicts outcomes of acute hospital care of older persons

Predictive accuracy measured by Area under ROC curves

	Discharge outcome		One year outcome	
	Home	Adverse outcome	Living at home	Adverse outcome
n	626/137	123/640	426/295	281/492
MAPLe-AC pre-morbid	0.71	0.74	0.67	0.71
MAPLe-AC admission	0.68	0.70	0.62	0.66
MAPLe-AC 7th day or discharge	0.71	0.77	0.64	0.68

Noro *et al. BMC Medical Informatics and Decision Making* 2011, **11**:39
http://www.biomedcentral.com/1472-6947/11/39

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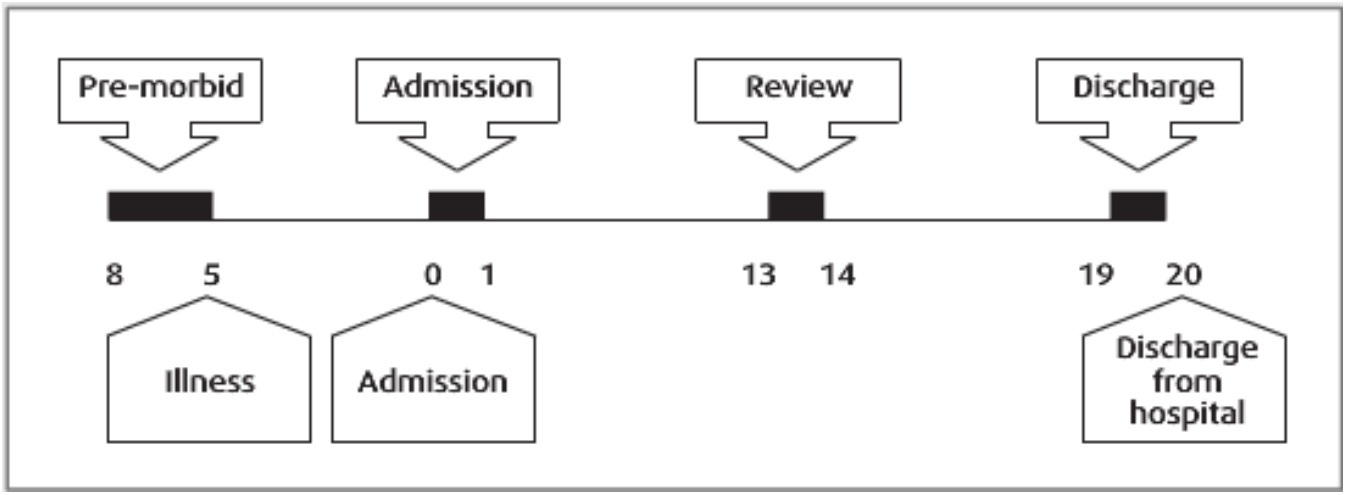
InterRAI AC - Assistenza

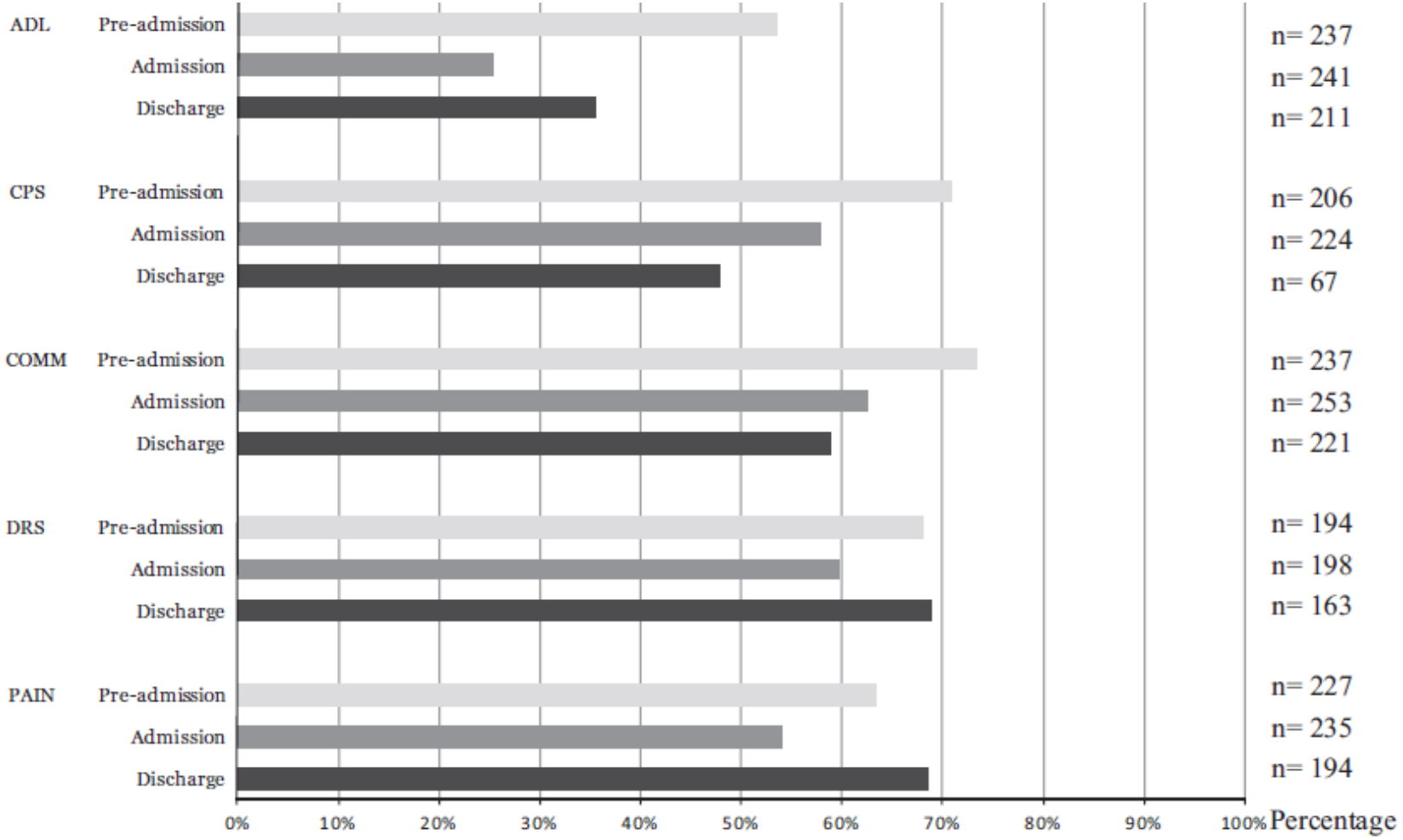
- Identificare i pazienti fragili da riferire per valutazione
- Pianificare la dimissione
- **Valutare i cambiamenti dello stato di salute**

InterRAI AC - Valutazione e periodi di osservazione



Clinical Changes in Older Adults During Hospitalization: Responsiveness of the interRAI Acute Care Instrument

Nathalie I. H. Wellens, PhD, MSc, SLP, Geert Verbeke, PhD,†‡ Johan Flamaing, MD, PhD,§¶ Philip Moons, PhD, RN,* Steven Boonen, MD, PhD,§¶ Jos Tournoy, MD, PhD,§¶ and Koen Milisen, PhD, RN*§¶*



J Am Geriatr Soc 61:799–804, 2013

Clinical Changes in Older Adults During Hospitalization: Responsiveness of the interRAI Acute Care Instrument

Nathalie I. H. Wellens, PhD, MSc, SLP, Geert Verbeke, PhD,†‡ Johan Flamaing, MD, PhD,§¶ Philip Moons, PhD, RN,* Steven Boonen, MD, PhD,§¶ Jos Tournoy, MD, PhD,§¶ and Koen Milisen, PhD, RN*§¶*

In older inpatients, **fluctuations in ADLs, cognition, communication, depressive symptoms, and pain can be captured using the interRAI AC output scales**, enabling clinicians to evaluate **longitudinal changes** from admission to discharge and to provide a comparison with patient status before the acute onset of the illness. These results support the use of these scales in geriatric and nongeriatric wards.

J Am Geriatr Soc 61:799–804, 2013

InterRAI AC - Assistenza

- Identificare i pazienti fragili da riferire per valutazione
- Pianificare la dimissione
- Valutare i cambiamenti dello stato di salute
- **Identificare importanti condizioni geriatriche (p.e. demenza, delirium, depressione e malnutritione)**

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InterRAI AC: condizioni geriatriche

J Nutr Health Aging. 2012 Aug;16(8):695-700. doi: 10.1007/s12603-012-0074-4

J Nutr Health Aging. 2013;17(5):435-9. doi: 10.1007/s12603-012-0439-8

J Clin Nurs. 2009 Nov;18(21):3037-49. doi: 10.1111/j.1365-2702.2009.02856.x. Epub 2009 Sep 3.

Prevalence of vision, hearing, and combined vision and hearing impairments in patients with hip fractures.

Grue EV[1], Kirkevold M, Ranhoff AH.

Author information

Abstract

AIMS AND OBJECTIVES: To examine the prevalence of hearing and vision impairments in 65+ year-old patients with hip fractures.

BACKGROUND: Many older people believe sensory problems are inevitable and thus avoid medical assessment and assistance. Furthermore, health professionals often overlook sensory problems, though it is known that sensory impairments can increase the risk of falling and sustaining hip fractures.

DESIGN: A prospective, observational study.

METHODS: We admitted 544 consecutive patients to an orthogeriatric ward from October 2004-July 2006; 332 were screened for study inclusion with the Resident Assessment Instrument for Acute Care (InterRAI-AC) and a questionnaire (KAS-Screen). We conducted patient interviews, objective assessments, explored hospital records and interviewed the family and staff. Impairments were defined as problems with seeing, reading regular print or hearing normal speech.

RESULTS: Sixteen per cent of the patients had no sensory impairments, 15.4% had vision impairments, 38.6% had hearing impairments and 30.1% had combined sensory impairments. Among the impaired, 80.6% were female, the mean age was 84.3 years (SD 6.8), 79.9% were living alone, 48.0% had cognitive impairments, 89.6% had impaired activities of daily living, 70.6% had impaired instrument activities in daily living, 51.0% had bladder incontinence and 26..8% were underweight. Comorbidity and polypharmacy were common. Delirium was detected in 17.9% on day three after surgery. Results showed the prevalence of combined sensory impairments was: 32.8% none; 52.2% moderate/severe; and 15.1% severe.

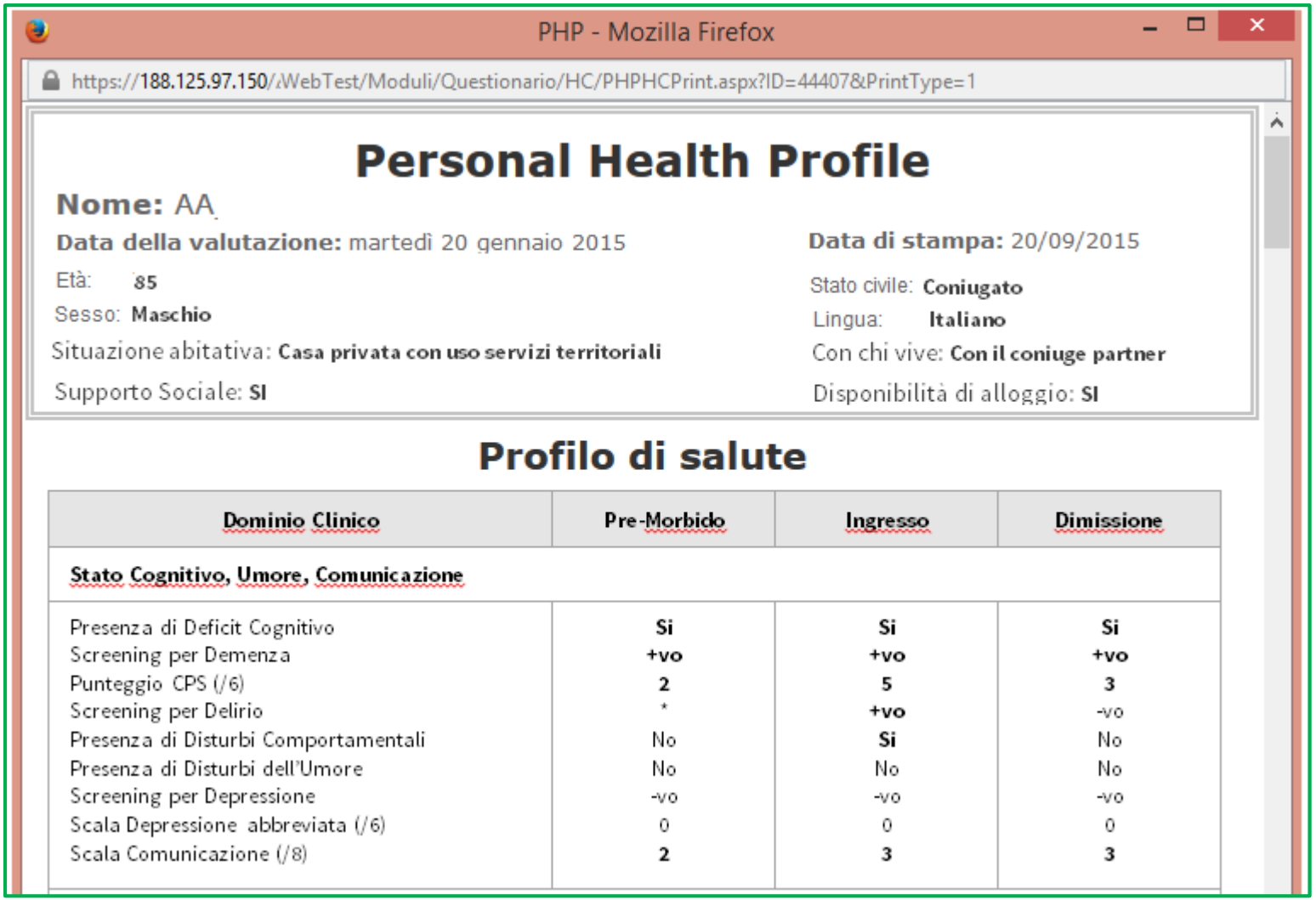
CONCLUSION: Patients with hip fractures frequently have hearing, vision and combined impairments.

RELEVANCE TO CLINICAL PRACTICE: We recommend routine screening for sensory impairments in patients with hip fractures. Most sensory problems can be treated or relieved with environmental adjustments. Patients should be encouraged to seek treatment and training for adapting to sensory deficiencies. This approach may reduce the number of falls and improve the ability to sustain independent living.

Clinical Action Points (CAP)

- ADL
- Comportamento
- Stato cognitivo
- Comunicazione
- Delirium
- Depressione e Ansia
- Cadute
- Istituzionalizzazione
- Farmaci
- Dolore
- Ulcere da pressione
- Riammissione
- Malnutrizione

Personal Health Profile



Personal Health Profile

Nome: AA

Data della valutazione: martedì 20 gennaio 2015

Data di stampa: 20/09/2015

Età: **85**

Stato civile: **Coniugato**

Sesso: **Maschio**

Lingua: **Italiano**

Situazione abitativa: **Casa privata con uso servizi territoriali**

Con chi vive: **Con il coniuge partner**

Supporto Sociale: **SI**

Disponibilità di alloggio: **SI**

Profilo di salute

Dominio Clinico	Pre-Morbido	Ingresso	Dimissione
Stato Cognitivo, Umore, Comunicazione			
Presenza di Deficit Cognitivo	**Si**	**Si**	**Si**
Screening per Demenza	**+vo**	**+vo**	**+vo**
Punteggio CPS (/6)	**2**	**5**	**3**
Screening per Delirio	*	**+vo**	-vo
Presenza di Disturbi Comportamentali	No	**Si**	No
Presenza di Disturbi dell'Umore	No	No	No
Screening per Depressione	-vo	-vo	-vo
Scala Depressione abbreviata (/6)	0	0	0
Scala Comunicazione (/8)	**2**	**3**	**3**

Personal Health Profile

Profilo di salute

Dominio Clinico	Pre-Morbido	Ingresso	Dimissione
Performance Fisica			
Presenza di problemi nelle ADL	**Si**	**Si**	Si
punteggio ADL Hierarchy Scale (/6)	0	**3**	**2**
punteggio ADL abbreviata (/16)	0	**9**	**3**
punteggio IADL di Performance (/42)	**40**	*	*
punteggio IADL di Capacità (/42)	*	*	**41**
rischio declino ADL	*	**+vo**	**+vo**
Mobilità e Cadute			
Problemi di mobilità	No	**Si**	**Si**
Ausili per la deambulazione	No	No	No
Problemi di Equilibrio	*	**Si**	No
Cadute Recenti	No	n/a	No
Rischio Cadute	*	No	*

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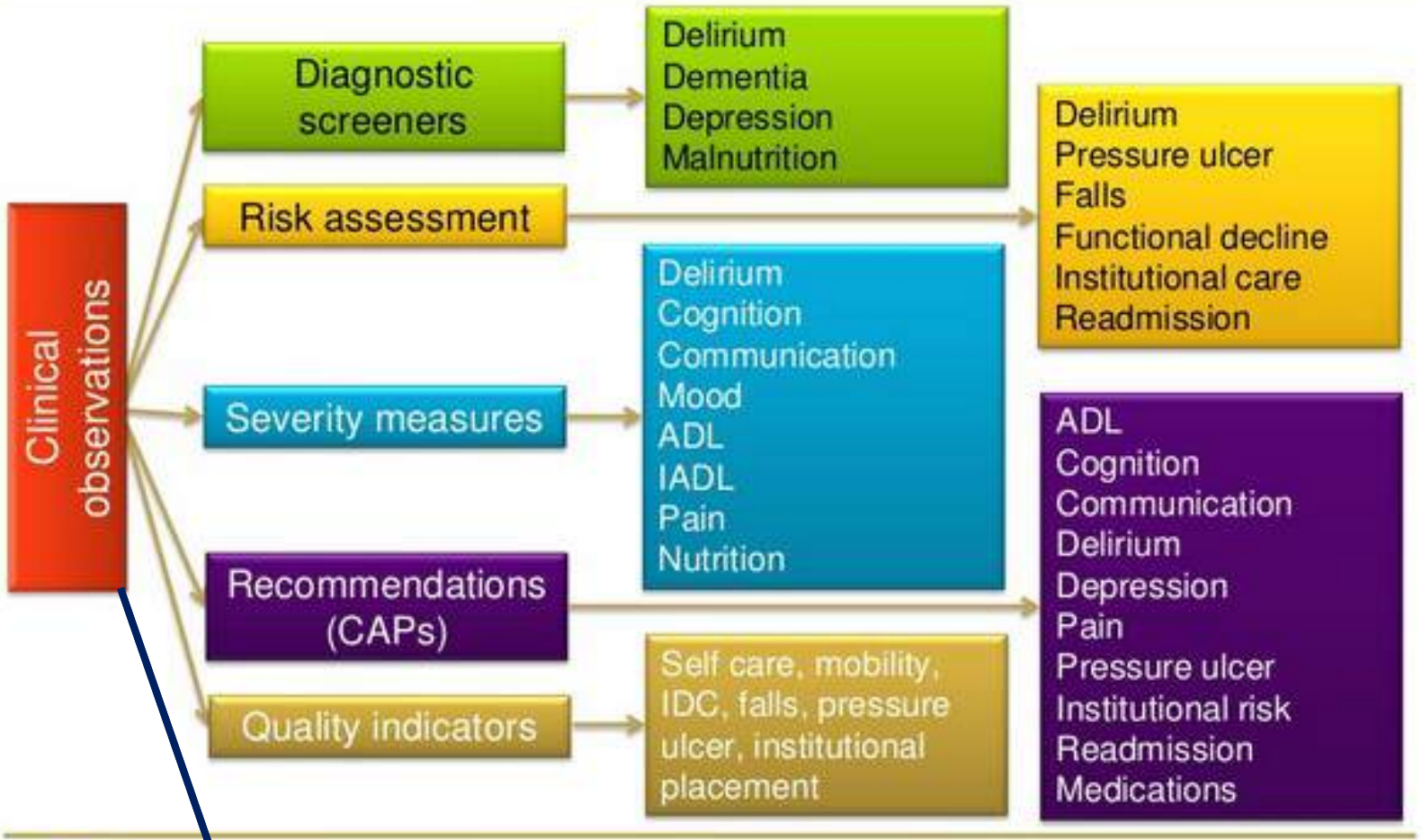
The interRAI AC



Creazione di database

VIEWPOINT

Fusing Randomized Trials With Big Data
The Key to Self-learning Health Care Systems?

Derek C. Angus, MD, MPH
Department of Critical Care Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania; and Associate Editor, *JAMA*.

Randomized clinical trials (RCTs) have revolutionized medicine by providing evidence on the efficacy and safety of drugs, devices, and procedures. Today, more than 40 000 RCTs are reported annually, their quality continues to increase, and oversight mechanisms ensure adequate protection of participants. However, RCTs have at least 4 related problems: (1) they are too expensive and difficult; (2) their findings are too broad (average treatment effect not representative of benefit for any given individual) and too narrow (trial population and setting not representative of general practice); (3) randomizing patients can make patients and physicians uncomfortable, especially when comparing different types of existing care; and (4) there are often long delays before RCT results diffuse into practice.

The new alternative is "big data." Because medical access to massive amounts of data, the Achilles' heel is lack of causal inference. No matter how detailed the measurement and how sophisticated the adjustment for all known variables, big data cannot eliminate unmeasured factors coincident with a particular treatment assignment that could explain an apparent change in outcome.[2]

Thus, each approach has complementary strengths: RCTs offer causal inference, and big data offers the potential for low-cost, high-volume, nuanced answers with immediate feedback. Rather than debate which is better, the greatest promise may come from fusing them.

Fixing Problem 1—Cost and Difficulty

Conducting RCTs as freestanding enterprises requires considerable infrastructure, much of which is duplica-

Conclusioni

InterRAI AC è uno strumento standardizzato e validato che

- Fornisce un utile strumento per ottimizzare l'assistenza in reparto per acuti
- Consente un controllo di qualità
- Se adottato insieme agli altri strumenti InterRAI facilità una continuità delle cure
- Consente un confronto dei pazienti in differenti setting e strutture
- Consente la creazione di banche dati

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