



**Simposio SIGG-AGE**  
**Geriatria e Territorio: un percorso di collaborazione**

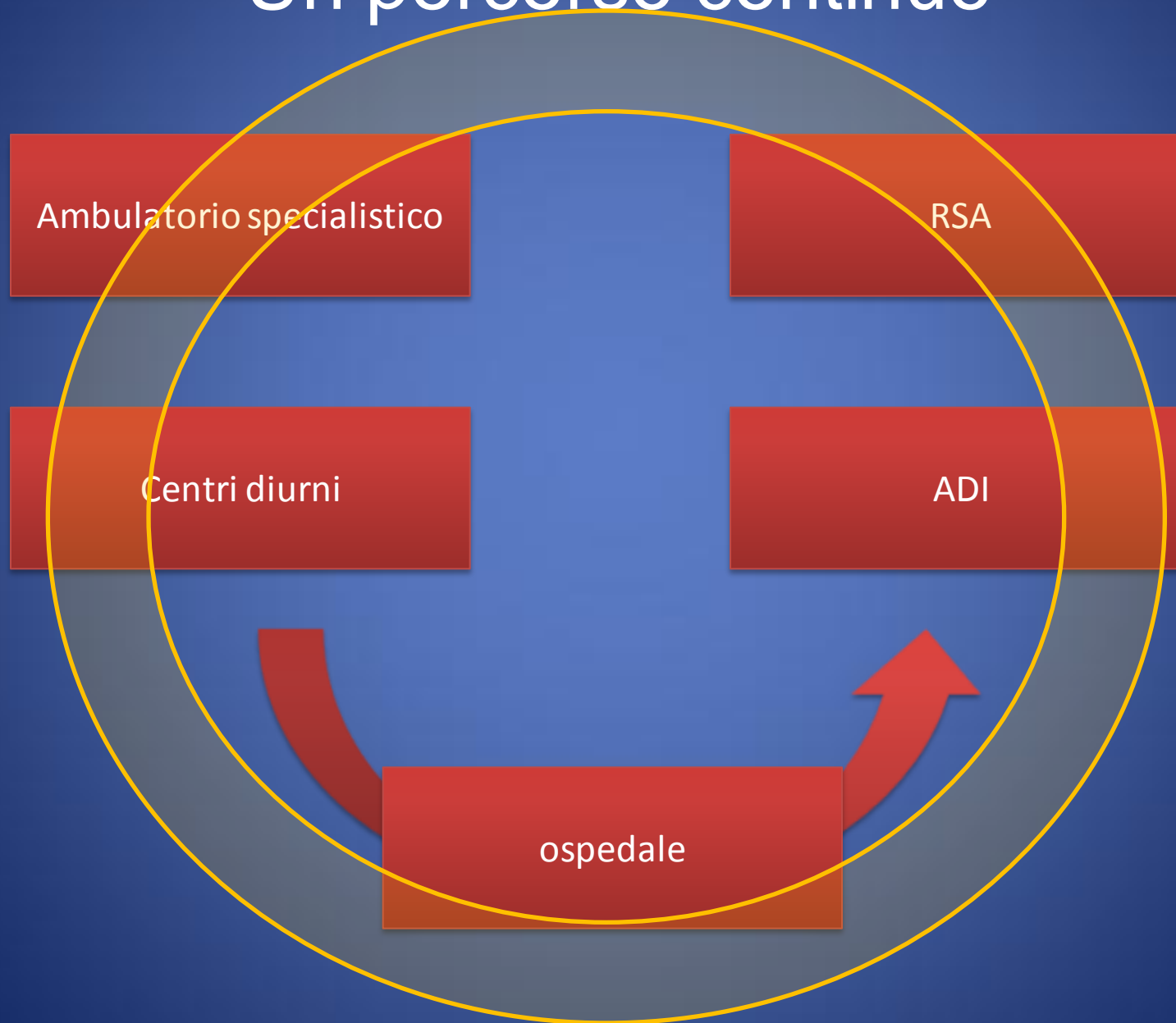
**L'Ospedale**

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**SCDU Geriatria**  
**AOU San Luigi Gonzaga di Orbassano, Torino**



*La nuova configurazione demografica, caratterizzata da un invecchiamento della popolazione con il conseguente aumento del numero di Anziani affetti da patologie invalidanti e di quelli ad alto rischio di non autosufficienza, deve caratterizzare un'azione assistenziale ampia che, obbedendo a linee guida fondate su EBM, non può non tenere conto della necessaria interazione tra tutte le forze interessate e coinvolte nell'individuazione di percorsi agili e validati in un “**continuum assistenziale**”.*

# Un percorso continuo



# Il Geriatra in ospedale

Elemento utile o doppione?

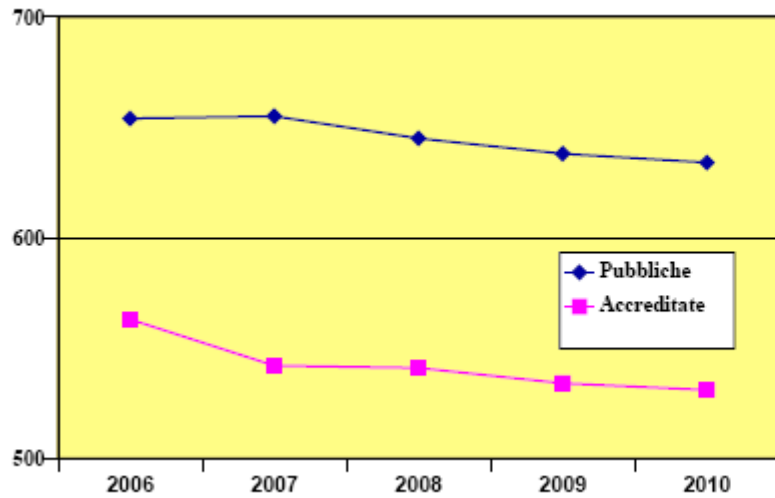
Qual è il ruolo dell'ospedale nella cura dell'anziano?

POSTI LETTO EFFETTIVAMENTE UTILIZZATI PER DISCIPLINA

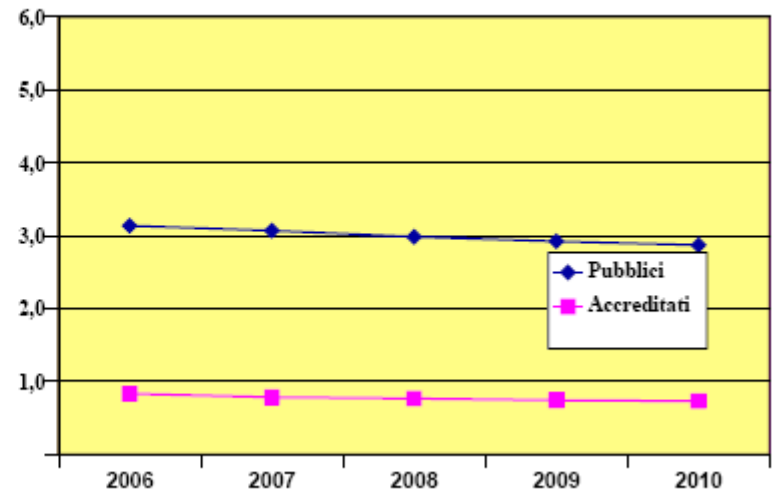
ANNO 2010

| Disciplina                                  | Posti Letto Pubblici |              |             | Posti Letto Accreditati |              |             | Totale            |              |             |
|---|----------------------|--------------|-------------|-------------------------|--------------|-------------|-------------------|--------------|-------------|
|   | Degenza Ordinaria    | Day Hospital | Day Surgery | Degenza Ordinaria       | Day Hospital | Day Surgery | Degenza Ordinaria | Day Hospital | Day Surgery |
| 01 - ALLERGOLOGIA                           | 24                   | 80           |             |                         |              |             | 24                | 80           |             |
| 02 - DAY HOSPITAL                           |                      | 651          | 9           |                         | 372          |             |                   | 1.023        | 9           |
| 05 - ANGIOLOGIA                             | 57                   | 58           |             | 41                      | 1            |             | 98                | 59           |             |
| 06 - CARDEOCHIRURGIA PEDIATRICA             | 134                  | 4            | 3           |                         |              |             | 134               | 4            | 3           |
| 07 - CARDEOCHIRURGIA                        | 1.409                | 24           | 2           | 583                     |              | 2           | 1.992             | 24           | 4           |
| 08 - CARDIOLOGIA                            | 6.536                | 607          | 27          | 1.362                   | 52           | 1           | 7.898             | 659          | 28          |
| 09 - CHIRURGIA GENERALE                     | 19.196               | 1.193        | 1.344       | 4.777                   | 231          | 370         | 23.973            | 1.424        | 1.714       |
| 10 - CHIRURGIA MAXILLO FACCIALE             | 519                  | 48           | 56          | 92                      | 1            | 21          | 611               | 49           | 77          |
| 11 - CHIRURGIA PEDIATRICA                   | 723                  | 75           | 84          | 8                       |              | 3           | 731               | 75           | 87          |
| 12 - CHIRURGIA PLASTICA                     | 825                  | 93           | 128         | 73                      | 6            | 6           | 898               | 99           | 134         |
| 13 - CHIRURGIA TORACICA                     | 866                  | 30           | 26          | 56                      |              |             | 922               | 30           | 26          |
| 14 - CHIRURGIA VASCOLARE                    | 1.842                | 102          | 151         | 283                     | 6            | 20          | 2.125             | 108          | 171         |
| 15 - MEDICINA SPORTIVA                      | 10                   | 10           | 1           |                         |              |             | 10                | 10           | 1           |
| 18 - EMATOLOGIA                             | 1.497                | 799          |             |                         |              |             | 1.497             | 799          |             |
| 19 - MALATTIE ENDOCRINE, RICAMBIO E NUTRIZ. | 658                  | 439          | 1           | 67                      |              |             | 725               | 439          | 1           |
| 20 - IMMUNOLOGIA                            | 29                   | 26           |             |                         |              |             | 29                | 26           |             |
| 21 - GERIATRIA                              | 4.054                | 247          | 1           | 591                     | 15           |             | 4.645             | 262          | 1           |
| 24 - MALATTIE INFETTIVE E TROPICALI         | 3.051                | 629          | 2           | 1                       |              |             | 3.652             | 629          | 2           |
| 25 - MEDICINA DEL LAVORO                    | 81                   | 42           |             |                         |              |             | 81                | 42           |             |
| 26 - MEDICINA GENERALE                      | 29.314               | 2.511        | 14          | 4.857                   | 302          | 2           | 34.171            | 2.813        | 16          |
| 28 - UNITA' SPINALE                         | 542                  | 32           |             | 35                      |              |             | 577               | 32           |             |
| 29 - NEFROLOGIA                             | 1.985                | 336          | 2           | 105                     | 5            |             | 2.090             | 341          | 2           |
| 30 - NEUROCHIRURGIA                         | 2.708                | 59           | 46          | 186                     |              | 1           | 2.894             | 59           | 47          |
| 32 - NEUROLOGIA                             | 5.033                | 489          |             | 1.442                   | 31           | 1           | 6.475             | 520          | 1           |
| 33 - NEUROPSICHIATRIA INFANTILE             | 320                  | 199          |             | 10                      |              |             | 330               | 199          |             |
| 34 - OCULISTICA                             | 1.441                | 640          | 827         | 749                     | 86           | 231         | 2.190             | 726          | 1.058       |
| 35 - ODONTOIATRIA E STOMATOLOGIA            | 102                  | 79           | 81          | 1                       | 1            |             | 103               | 80           | 81          |
| 36 - ORTOPEDIA E TRAUMATOLOGIA              | 13.720               | 741          | 805         | 3.713                   | 173          | 217         | 17.433            | 914          | 1.022       |
| 37 - OSTETRICIA E GINECOLOGIA               | 12.706               | 1.021        | 859         | 2.012                   | 109          | 134         | 14.718            | 1.130        | 993         |

STRUTTURE DI RICOVERO



POSTI LETTO DEGENZA ORDINARIA x 1.000 abitanti

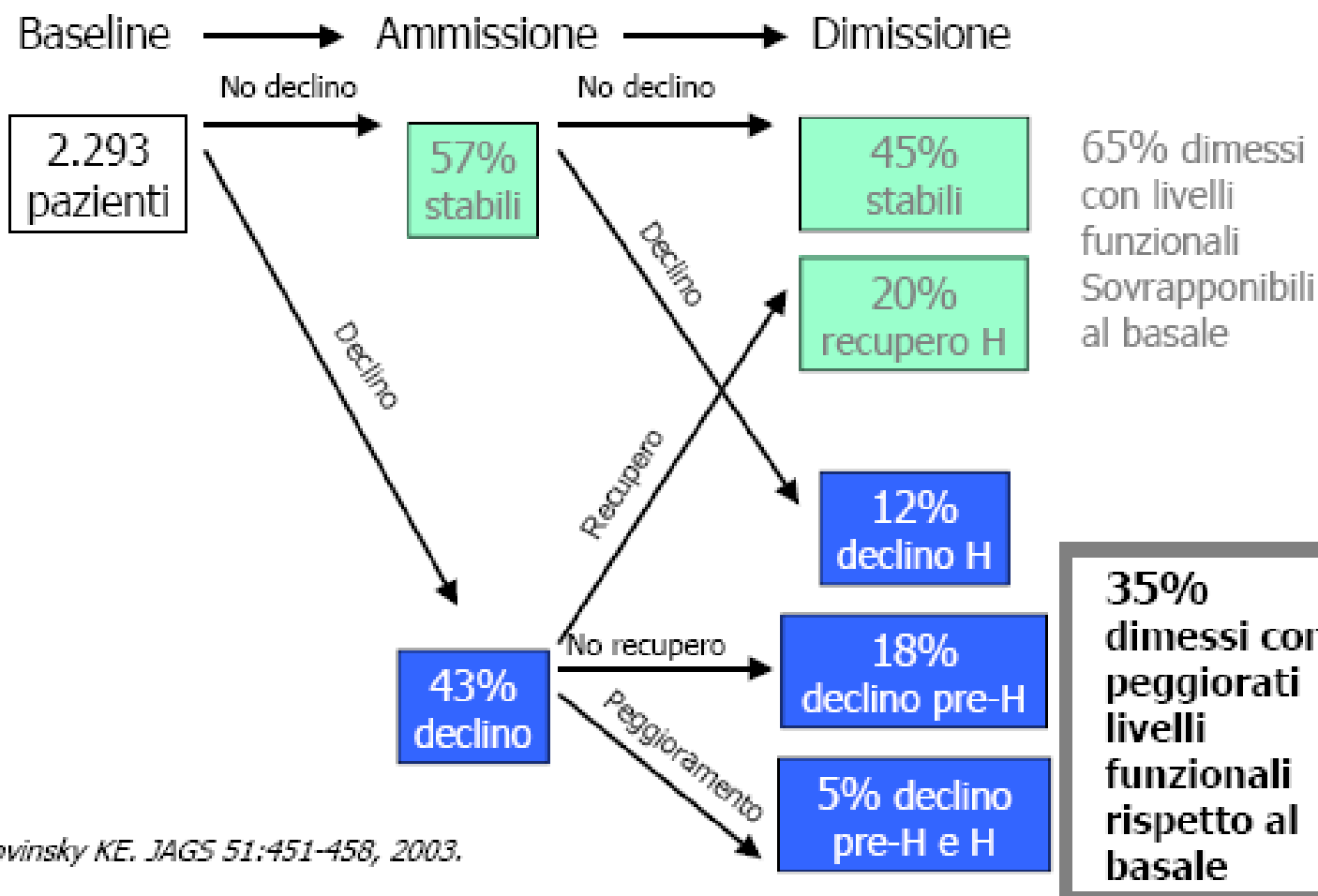


8,1% di ricoveri ospedalieri non giustificati da ragioni diagnostico-terapeutiche acute

Sona A. et al. 2009

Ospedale  
Utile o fonte di rischio?

## Functional transitions in older adults hospitalized with medical illnesses



*Kovinsky KE. JAGS 51:451-458, 2003.*



# Risk factors of functional decline during hospitalization in the oldest old

Table 2 - Major predictors of functional decline.

|                         |           | Functional decline |              | <i>p</i> |
|-------------------------|-----------|--------------------|--------------|----------|
|                         |           | No<br>n (%)        | Yes<br>n (%) |          |
| Age                     | 80-90     | 153 (92.17)        | 44 (84.61)   | 0.34     |
|                         | >90       | 13 (7.83)          | 8 (15.39)    |          |
| Gender                  | F         | 89 (53.61)         | 32 (61.53)   | 0.53     |
|                         | M         | 77 (46.39)         | 20 (38.57)   |          |
| Living alone            | Yes       | 73 (43.98)         | 18 (34.61)   | 0.21     |
|                         | No        | 93 (56.02)         | 34 (65.39)   |          |
| Length of stay          | 1-8 days  | 42 (25.3)          | 9 (17.31)    | 0.001    |
|                         | 9-15      | 103 (62.05)        | 17 (32.69)   |          |
|                         | >15       | 21 (12.65)         | 26 (50)      |          |
| Albumin                 | <3.4 g/dL | 24 (14.46)         | 18 (34.61)   | 0.03     |
|                         | >3.4 g/dL | 142 (85.54)        | 34 (65.39)   |          |
| Cardiovascular disease  |           | 33 (19.88)         | 12 (23.07)   | 0.84     |
|                         |           | 133 (80.12)        | 40 (76.93)   |          |
| Cerebrovascular disease |           | 24 (14.46)         | 8 (15.38)    | 0.93     |
|                         |           | 142 (85.54)        | 44 (84.62)   |          |
| Pulmonary disease       |           | 21 (12.65)         | 9 (17.30)    | 0.66     |
|                         |           | 145 (87.35)        | 43 (82.70)   |          |
| Metabolic disease       |           | 23 (13.85)         | 12 (23.07)   | 0.31     |
|                         |           | 143 (86.15)        | 40 (86.93)   |          |
| Neoplasia               |           | 6 (3.61)           | 9 (17.30)    | 0.03     |
|                         |           | 160 (96.39)        | 43 (82.70)   |          |
| Dementia                |           | 6 (3.61)           | 1 (1.92)     | 0.97     |
|                         |           | 160 (96.39)        | 51 (98.08)   |          |
| Osteoarticular disease  |           | 13 (7.83)          | 6 (11.53)    | 0.71     |
|                         |           | 153 (92.17)        | 46 (88.47)   |          |
| Number of pathologies   | <3        | 67 (40.36)         | 21 (40.38)   | 0.12     |
|                         | >3        | 99 (59.64)         | 31 (59.62)   |          |

Il 23,9% dei pazienti ha perso almeno una funzione ADL durante la degenza

|                            | $\beta$ | SE ( $\beta$ ) | OR     | P-value |
|----------------------------|---------|----------------|--------|---------|
| Access code                | 0.174   | 0.066          | 1.189  | 0.009   |
| Visited by GP              | 0.566   | 0.151          | 1.7625 | <0.001  |
| Number of prescribed drugs | 0.052   | 0.024          | 0.949  | 0.032   |
| Age                        | 0.032   | 0.009          | 0.967  | <0.001  |
| ADL                        | 0.198   | 0.052          | 0.819  | <0.001  |
| APACHE II                  | 0.092   | 0.225          | 0.911  | <0.001  |
| COPD                       | 0.707   | 0.267          | 0.493  | 0.008   |
| Heart failure              | 1.042   | 0.489          | 0.353  | 0.033   |

APACHE, acute physiology and chronic health evaluation; COPD, chronic obstructive pulmonary disease

Condizioni indipendentemente associate al ricovero ospedaliero

|                            | $\beta$ | SE ( $\beta$ ) | OR    | P-value |
|----------------------------|---------|----------------|-------|---------|
| Level of education         | -0.153  | 0.074          | 0.857 | 0.037   |
| Arrhythmia                 | 0.499   | 0.151          | 1.647 | 0.001   |
| Pulmonary neoplasm         | 0.909   | 0.445          | 2.482 | 0.041   |
| ADL                        | -0.435  | 0.083          | 0.647 | <0.001  |
| Number of prescribed drugs | 0.136   | 0.023          | 1.145 | <0.001  |
| CI                         | 0.122   | 0.033          | 1.130 | <0.001  |

Condizioni indipendentemente associate a un uso frequente del PS

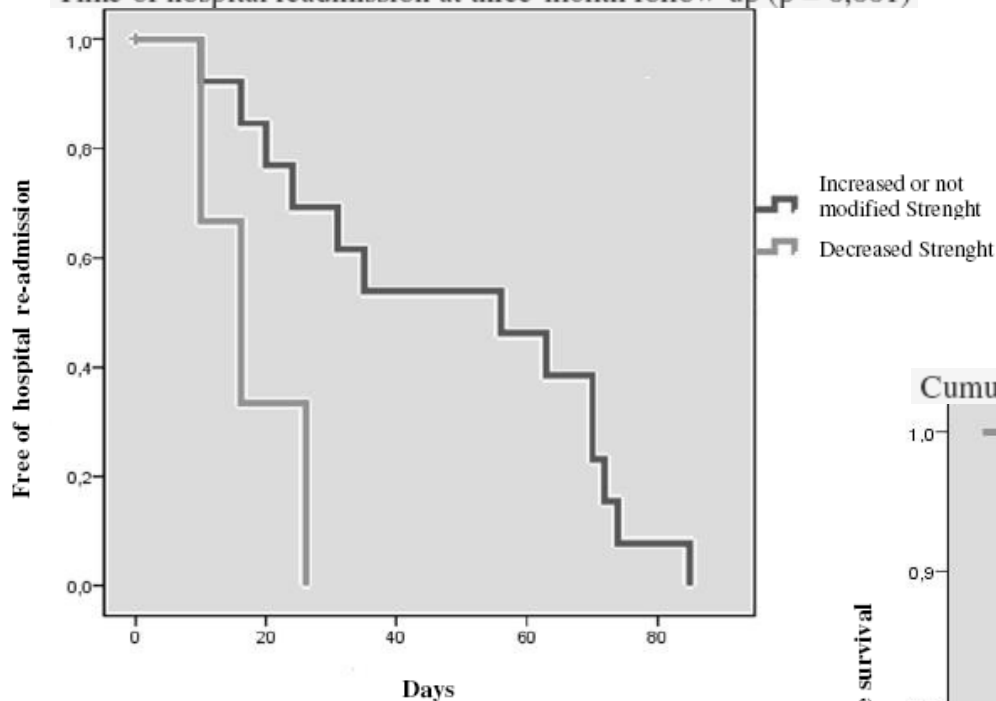
|                            | $\beta$ | SE ( $\beta$ ) | OR    | P-value |
|----------------------------|---------|----------------|-------|---------|
| Arrhythmia                 | 0.425   | 0.167          | 1.530 | 0.011   |
| Bowel diseases             | 0.955   | 0.458          | 2.600 | 0.037   |
| ADL                        | -0.380  | 0.093          | 0.683 | <0.001  |
| Number of prescribed drugs | 0.125   | 0.026          | 1.133 | <0.001  |
| CI                         | 0.133   | 0.043          | 1.143 | 0.002   |

Condizioni indipendentemente associate a frequenti ospedalizzazioni

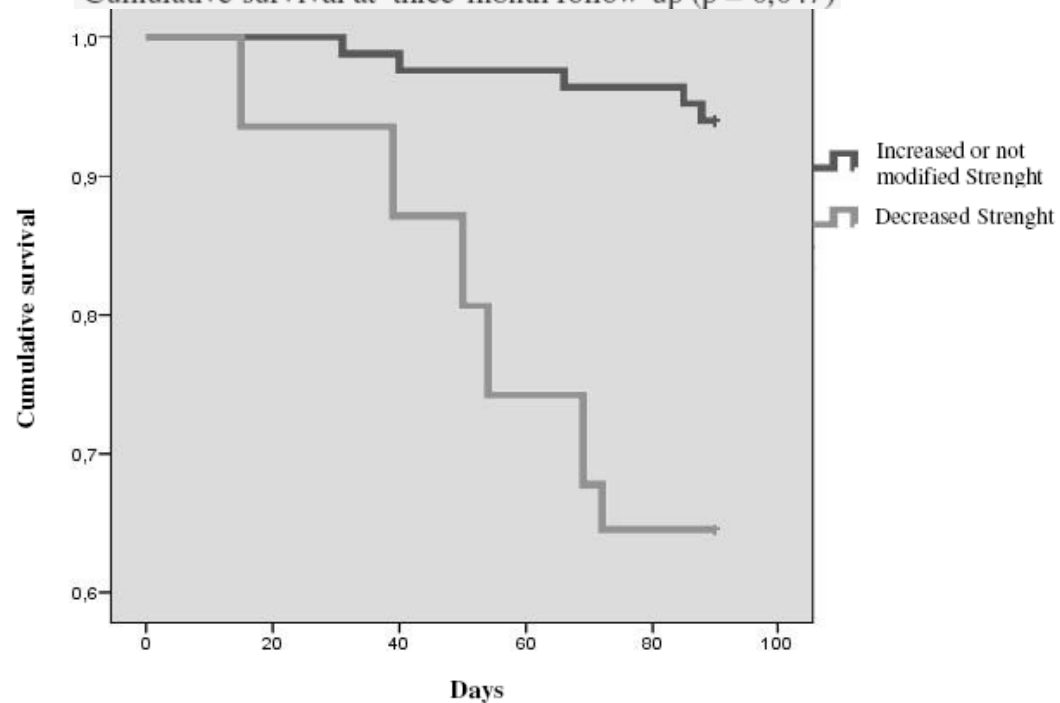
# Predictive effects of muscle strength after hospitalization in old patients.

Isaia G, Greppi F, Pastorino A, Bersano EM, Rrodhe S, Aimonino Ricauda N, Bo M, Molinar Roet K, Zancocchi M.

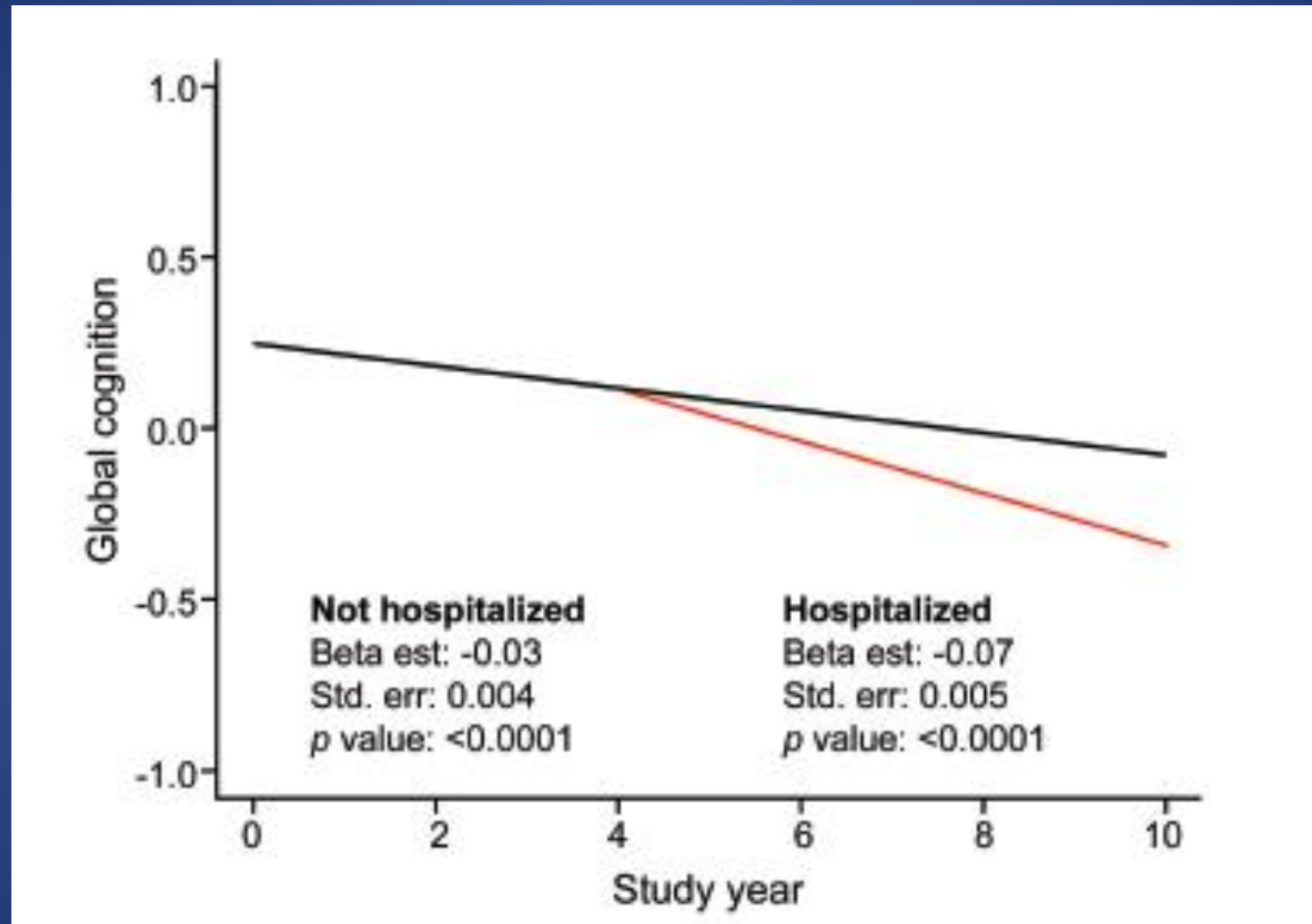
Time of hospital readmission at three-month follow-up ( $p = 0,001$ )



Cumulative survival at three-month follow-up ( $p = 0,047$ )



# Ospedale e declino cognitivo



# Eventi avversi

Older hospital inpatients are at particular risk of falling with incidence rates being almost three times that of the community (American Geriatrics Society, 2001).<sup>1</sup>

| Risk factor                                  | Association with experiencing a patient-related adverse event |           |         |
|--|---|-----------|---------|
|  | Relative risk   | 95% CI    | p-Value |
| <b>Demographic</b>                           |   |           |         |
| Sex (female)                                 | 0.45  | 0.24–0.83 | 0.01    |
| Age <sup>a</sup>                             | 1.00  | 0.97–1.05 | 0.70    |
| Living in supported accommodation            | 1.09  | 0.58–2.06 | 0.77    |
| <b>Clinical characteristics on admission</b> |   |           |         |
| Charlson score <sup>a</sup>                  | 1.03  | 0.90–1.19 | 0.61    |
| APACHE II score <sup>a</sup>                 | 1.01  | 0.93–1.1  | 0.61    |
| Glasgow Score <sup>a</sup>                   | 1.05  | 0.85–1.30 | 0.64    |
| Alcohol units per week                       | 1.13  | 0.59–2.18 | 0.71    |
| Waterlow score <sup>a</sup>                  | 1.00  | 0.95–1.04 | 0.98    |
| Incontinence                                 | 0.96  | 0.71–1.3  | 0.79    |
| <b>Dementia and cognition</b>                |   |           |         |
| Delirium <sup>b</sup>                        | 2.15  | 1.10–4.21 | 0.02    |
| [0,1-4]MMSE <sup>b</sup>                     |   |           |         |
| >24  | 1   |           |         |
| 18–23  | 3.61  | 1.72–7.61 | 0.01    |
| <17  | 0.92  | 0.35–2.36 | 0.86    |
| DSMIV dementia <sup>b</sup>                  | 2.18  | 1.10–4.32 | 0.03    |
| [0,1-4]FAST category <sup>b</sup>            |   |           |         |
| 1  | 1   |           |         |
| 2–6  | 2.73  | 1.24–6.00 | 0.01    |
| 7  | 0   | ~         | ~       |

FAST, functional assessment staging; MMSE, mini-mental state examination.

“Ambulatory impaired”

Pazienti che si muovono bene, ma non in ospedale  
Pazienti apparentemente “funzionanti” ma in realtà limitati cognitivamente e/o funzionalmente

The British Geriatrics society has recommended that all older people admitted to the acute hospital should be routinely screened for dementia and delirium (British Geriatrics Society, 2006). The adoption of this strategy may be an important step in identifying patients at risk of experiencing an adverse event.

## RESEARCH

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## Care in specialist medical and mental health unit compared with standard care for older people with cognitive impairment admitted to general hospital: randomised controlled trial (NIHR TEAM trial)

 OPEN ACCESS

Sarah E Goldberg *research associate*<sup>1</sup>, Lucy E Bradshaw *statistician*<sup>1</sup>, Fiona C Keamey *consultant geriatrician*<sup>2</sup>, Catherine Russell *research nurse*<sup>2</sup>, Kathy H Whittamore *clinical researcher*<sup>1</sup>, Pippa E R Foster *research associate*<sup>1</sup>, Jil Mamza *clinical researcher*<sup>1</sup>, John R F Gladman *professor of geriatric medicine*<sup>1</sup>, Rob G Jones *associate professor of old age psychiatry*<sup>3</sup>, Sarah A Lewis *professor of statistics*<sup>4</sup>, Davina Porock *associate dean for research and scholarship*<sup>5</sup>, Rowan H Harwood *consultant geriatrician*<sup>2</sup>, on behalf of the Medical Crises in Older People Study Group.

Bo M, Martini B, Ruatta C, Massaia M, Aimonino N, Varetto A, Astengo M, Torta R  
**Geriatric ward hospitalization reduced incidence delirium among older medical inpatients.**

Am J Geriatr Psychiatry. 2009 Sep;17(9):760-8.

Il ricovero in ambiente geriatrico è risultato associato a una ridotta incidenza di delirium ( $p < 0.001$ )

APPROCCIO GERIATRICO



# Delirium in elderly home-treated patients: a prospective study with 6-month follow-up

Gianluca Isaia • Marco A. Astengo •  
Vittoria Tibaldi • Mauro Zanicchi •  
Benedetta Bardelli • Rossella Obialero •  
Alessandra Tizzani • Mario Bo •  
Corrado Moiraghi • Mario Molaschi •  
Nicoletta Aimonino Ricauda

AGE (2009) 31:109–117

DOI 10.1007/s11357-009-9086-3

**Table 2** Relative risk of developing delirium according to setting of care, previous history of delirium and gender (logistic regression analysis).  $\beta$  Regression coefficient, *CI* confidence interval, *SE* standard error, *RR* relative risk

|  | $\beta$ | S.E. | RR (CI)         | <i>P</i> -value |
|--|---------|------|-----------------|-----------------|
| GHW vs GHHS  | 1.35    | 0.65 | 3.84 (1.8–3.7)  | 0.04            |
| Previous history of delirium: positive vs negative | 1.53    | 1.04 | 4.64 (0.6–35.7) | 0.14            |
| Gender: male vs female                             | 1.02    | 0.61 | 2.77 (0.8–9.1)  | 2.77            |

*“Once delirium is present, management of delirium has not been found to improve long-term mortality or need for institutional care”*

Witlox et al. JAMA 2010

# Potenziamento dei servizi ospedalieri sul territorio

## Ospedalizzazione a Domicilio (OaD)

Aimonino Ricauda N, Tibaldi V, Leff B, Scarafiotti C, Marinello R, Zancocchi M, Molaschi M

**Substitutive "hospital at home" versus inpatient care for elderly patients with exacerbations of chronic obstructive pulmonary disease: a prospective randomized, controlled trial.**

*J Am Geriatr Soc. 2008; 56: 493-500.*

Tibaldi V, Aimonino N, Ponzetto M, Stasi MF, Amati D, Raspo S, Roglia D, Molaschi M, Fabris F

**A randomized controlled trial of a home hospital intervention for frail elderly demented patients: behavioral disturbances and caregiver's stress.**

*Arch Gerontol Geriatr Suppl. 2004; 9: 431-436.*

Isaia G, Tibaldi V, Astengo M, Ladetto M, Marinello R, Bo M, Michelis G, Ruatta F, Aimonino N

**Home management of hematological patients requiring hospital admission.**

*Arch Gerontol Geriatr. 2010 Feb 4.*

Tibaldi V, Isaia G, Scarafiotti C, Gariglio F, Zancocchi M, Bo M, Bergerone S, Ricauda NA

**Hospital at home for elderly patients with acute decompensation of chronic heart failure: a prospective randomized controlled trial.**

*Arch Intern Med. 2009; 169: 1569-1575.*

Shepperd S, Doll H, Angus RM, Clarke MJ, Iliffe S, Kalra L, Aimonino N, Tibaldi V, Wilson AD

Avoiding hospital admission through provision of hospital care at home: a systematic review and meta-analysis of individual patient data.

*CMAJ. 2009 Jan 20;180(2):175-82.*

# Take home message

L'ospedale è spesso inevitabile e necessario, ma la degenza deve essere limitata il più possibile

Incrementare il dialogo con le strutture territoriali e offrire ai pazienti alternative rapide

La prevenzione del rischio deve avere la stessa rilevanza dell'approccio diagnostico-terapeutico

Proporre soluzioni alternative (Ospedalizzazione a Domicilio, Telemedicina, ecc...)