Gruppo di ricerca geriatrica

Venerdì 23 dicembre 2011

Riabilitazione geriatrica nei reparti post acuzie

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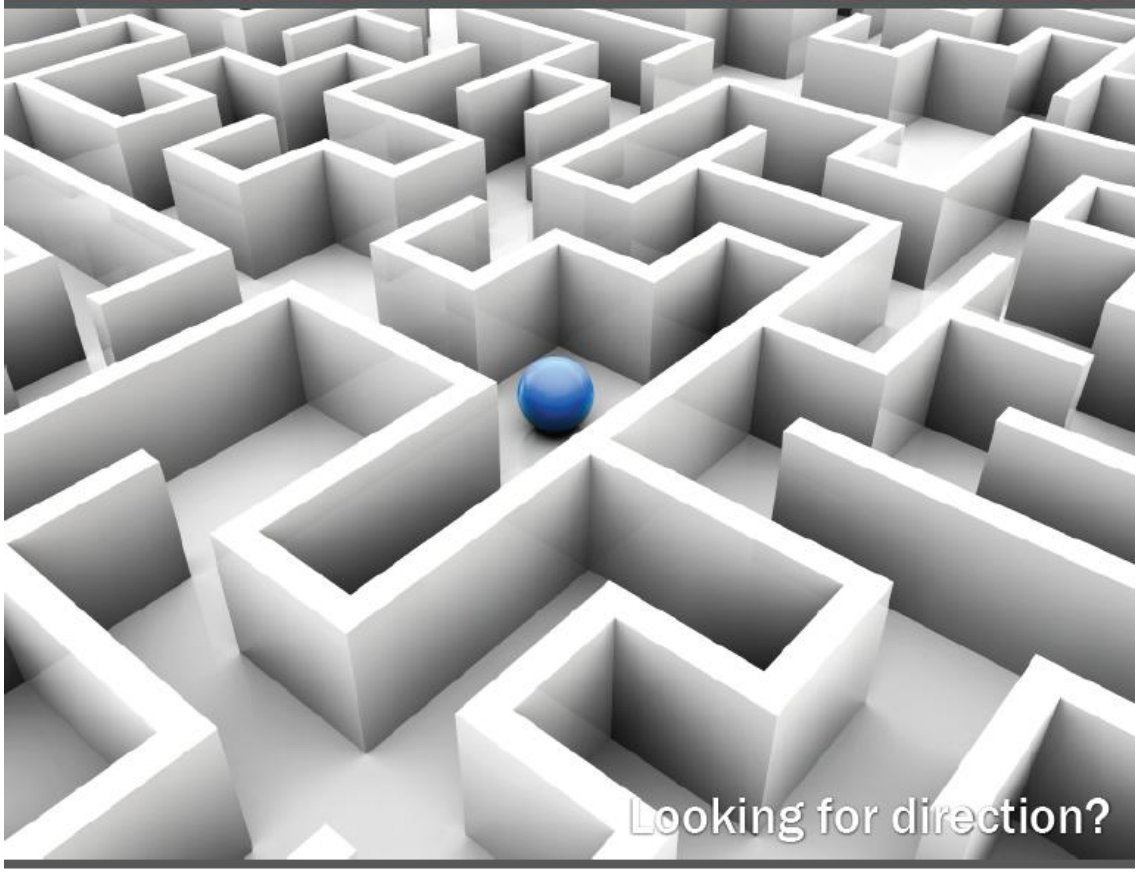
A Roadmap for Health IT in Long Term and Post Acute Care (LTPAC)

2010–2012



Outline della presentazione

- Quale è il problema
- Quali sono le opzioni di cura dopo la dimissione dall'ospedale per acuti
- Ci sono differenze tra PAC e riabilitazione geriatrica?
- Funzionano le esperienze di intermediate care?
- Come decidere se un paziente avrà più bisogno di attenzioni cliniche o riabilitative
  - I Dati IPER2 della sperimentazione lombarda
- Conclusioni

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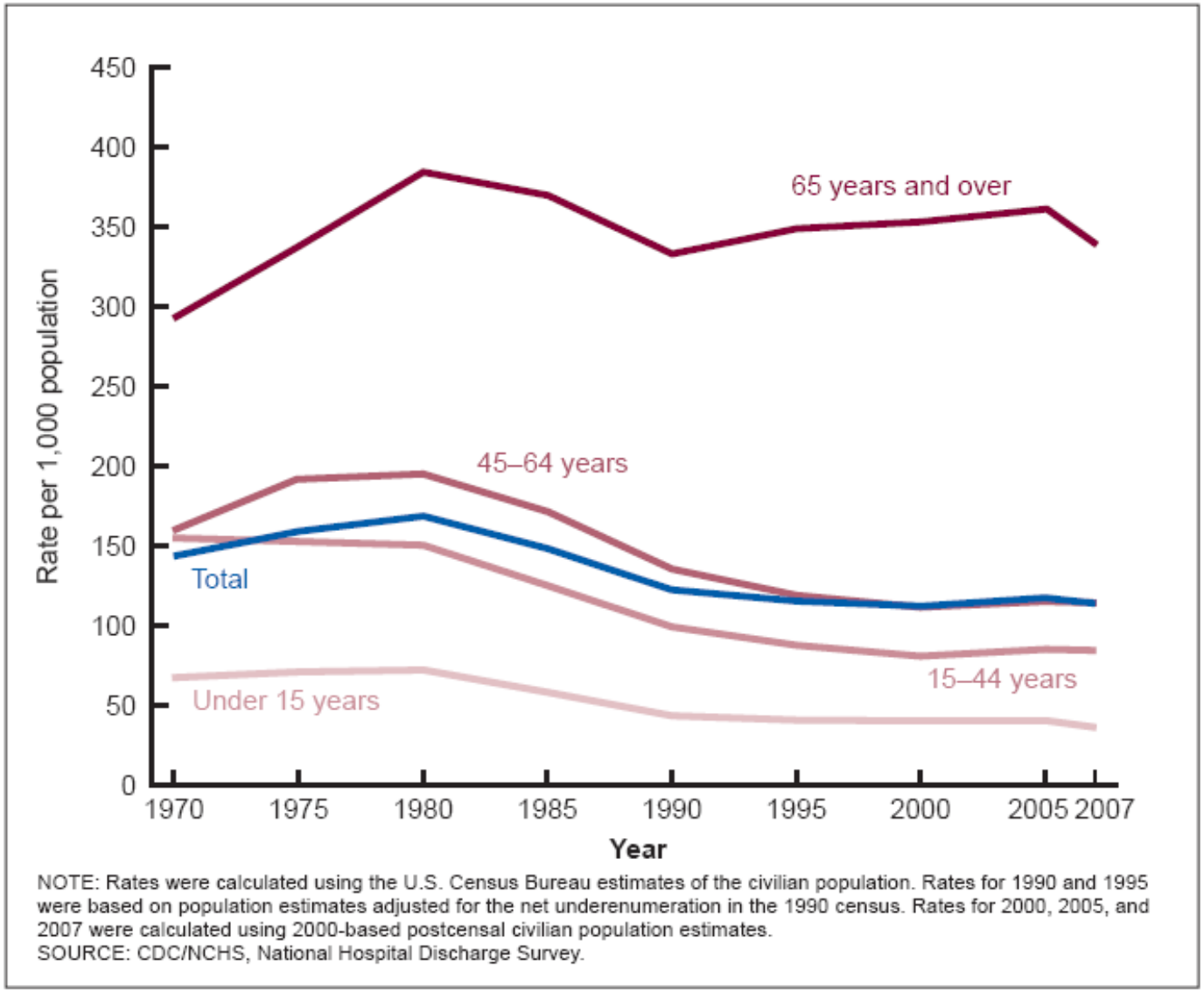
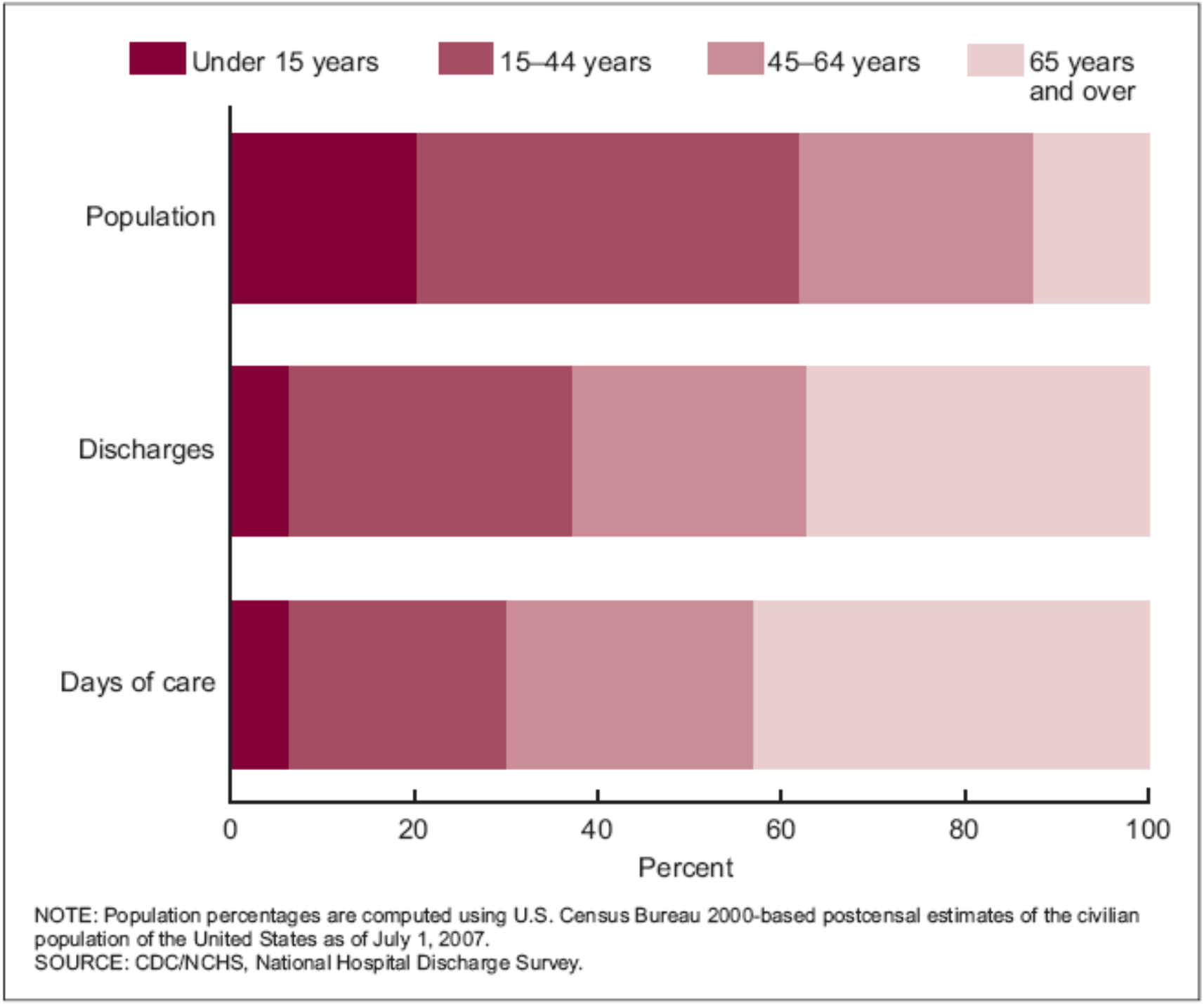
Hospitalization rates by age: US 1970-2007

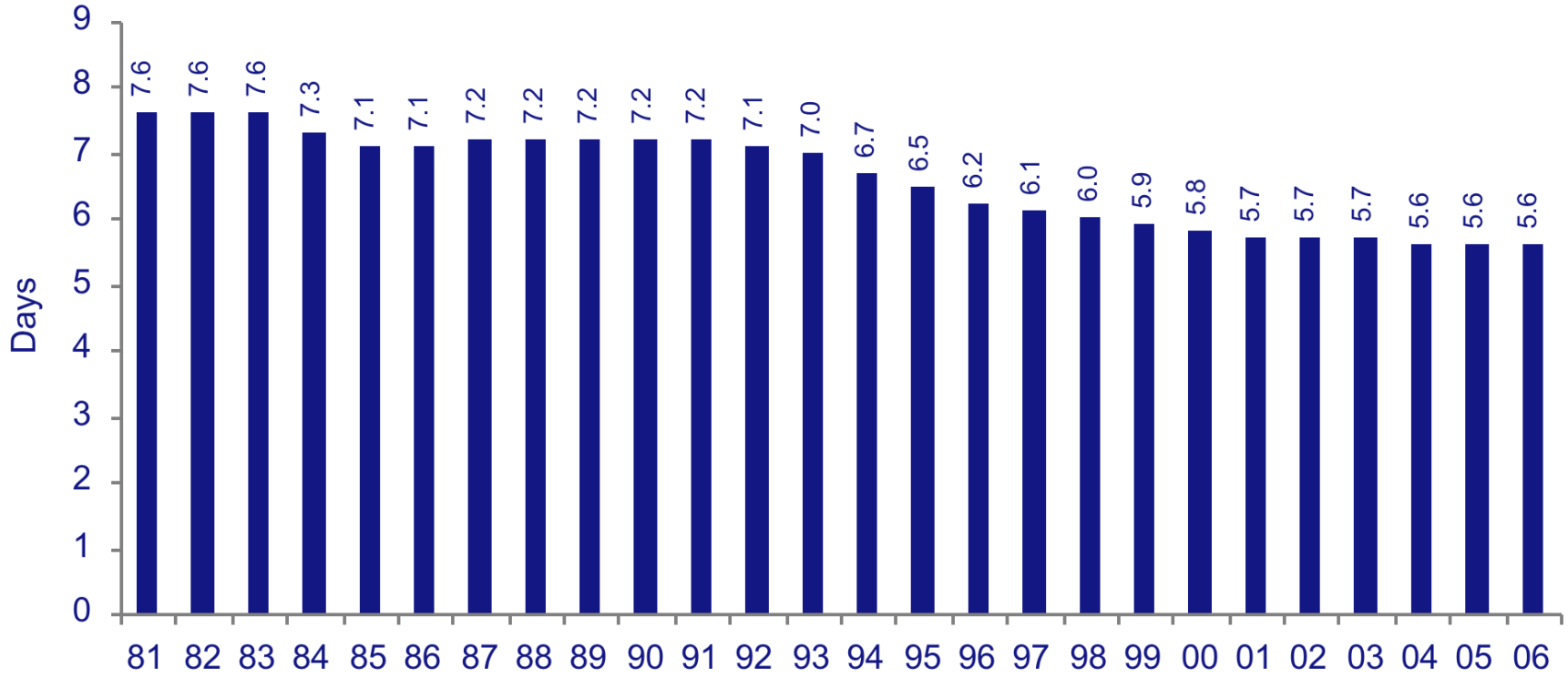


NOTE: Rates were calculated using the U.S. Census Bureau estimates of the civilian population. Rates for 1990 and 1995 were based on population estimates adjusted for the net underenumeration in the 1990 census. Rates for 2000, 2005, and 2007 were calculated using 2000-based postcensal civilian population estimates.
SOURCE: CDC/NCHS, National Hospital Discharge Survey.



NOTE: Population percentages are computed using U.S. Census Bureau 2000-based postcensal estimates of the civilian population of the United States as of July 1, 2007.
SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Average Length of Stay in Community Hospitals, 1981 – 2006



Source: Avalere Health analysis of American Hospital Association Annual Survey data, 2006, for community hospitals.

Policy Options to Improve Discharge Planning and Reduce Rehospitalization

Vincent Mor, PhD
Richard W. Besdine, MD

- ….Although evidence suggests that the hospitalist movement has reduced hospital stays and improved inpatient quality indicators without clear deleterious effects on patient outcomes, some observers **have worried that such services may complicate discharge transitions to primary care physicians, particularly for the most frail patients**.
    - Hamel MB, NEJM 2009; Peterson MC. Mayo Clin Proc 2009

JAMA, January 19, 2011—Vol 305, No. 3

Re-hospitalizations higher if Doctor is not seen

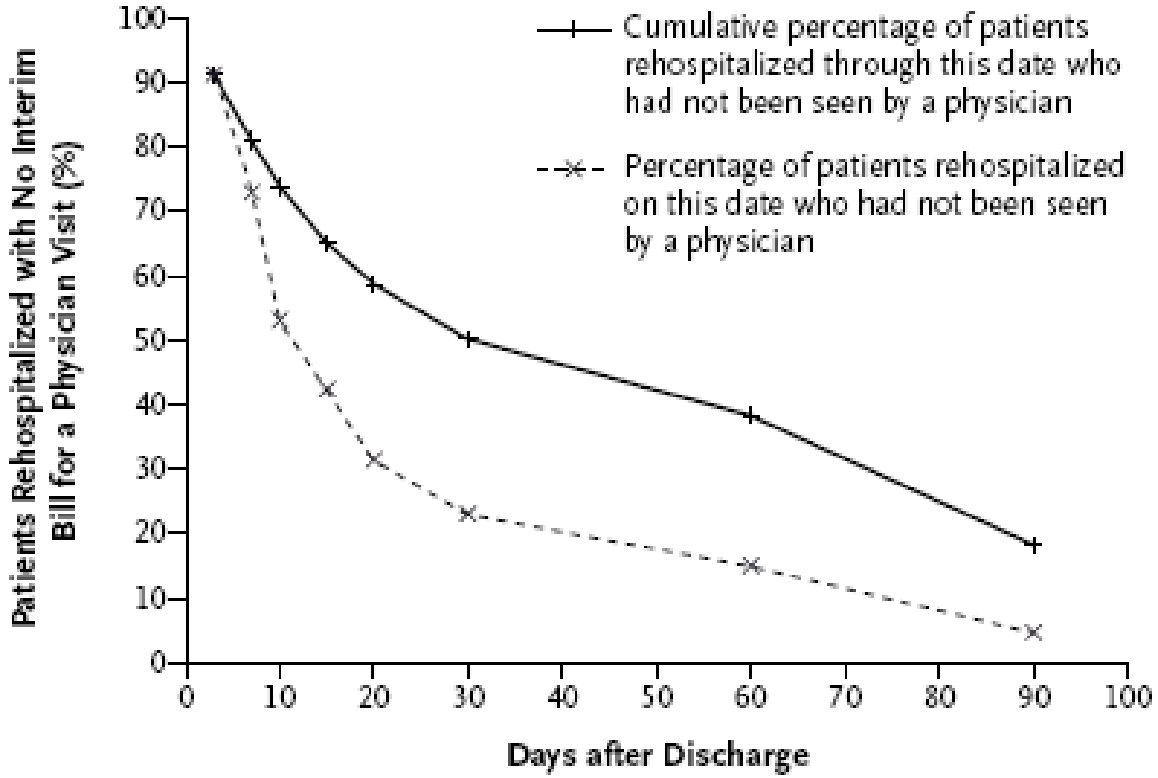


Figure 2. Patients for Whom There Was No Bill for an Outpatient Physician Visit between Discharge and Rehospitalization.

Data are for patients in fee-for-service Medicare programs who were discharged to the community between January 1, 2003, and December 31, 2003, after an index hospitalization for a medical condition. Data are derived from claims maintained in the Chronic Condition Data Warehouse of the Centers for Medicare and Medicaid Services.

Discharging Patients “Quicker and Sicker”

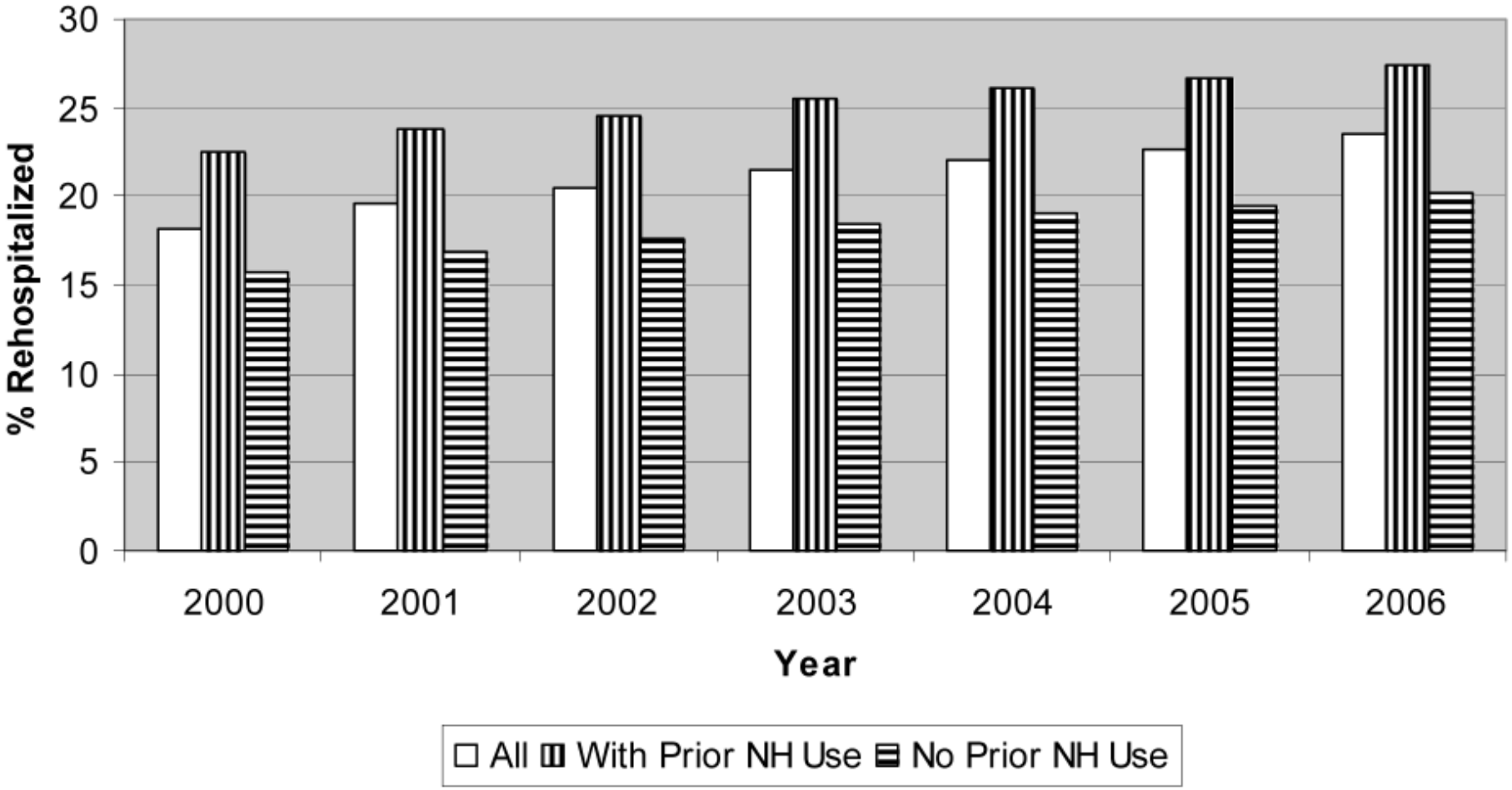
- Declining Length of Stay meant vulnerable older patients had to be discharged (frequently) to another medically supervised setting
- Some hospitals established their own post-acute nursing home or home care services to help transitions
- Major growth in the use of the nursing home as a place to “recuperate” and to be rehabilitated

Table 3. Predictors of Rehospitalization within 30 Days after Discharge.*

Variable	Hazard Ratio (95% Confidence Interval)
Length of stay	
>2 times that expected for DRG	1.266 (1.261–1.272)
0.5–2 times that expected for DRG	1.00
<0.5 times that expected for DRG	0.875 (0.872–0.877)
Disability	1.130 (1.119–1.141)
End-stage renal disease	1.417 (1.409–1.425)
Male sex	1.056 (1.053–1.059)
Age	
<55 yr	1.00
55–64 yr	0.983 (0.978–0.988)
65–69 yr	0.999 (0.989–1.009)
70–74 yr	1.023 (1.012–1.035)
75–79 yr	1.071 (1.059–1.084)
80–84 yr	1.101 (1.089–1.113)
85–89 yr	1.123 (1.111–1.136)
>89 yr	1.118 (1.105–1.131)

Jencks et al, N Engl J Med 2009

The Revolving Door of Rehospitalization From Skilled Nursing Facilities



Mor V et al, Health Aff (Millwood) 2010

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Il modello di riferimento

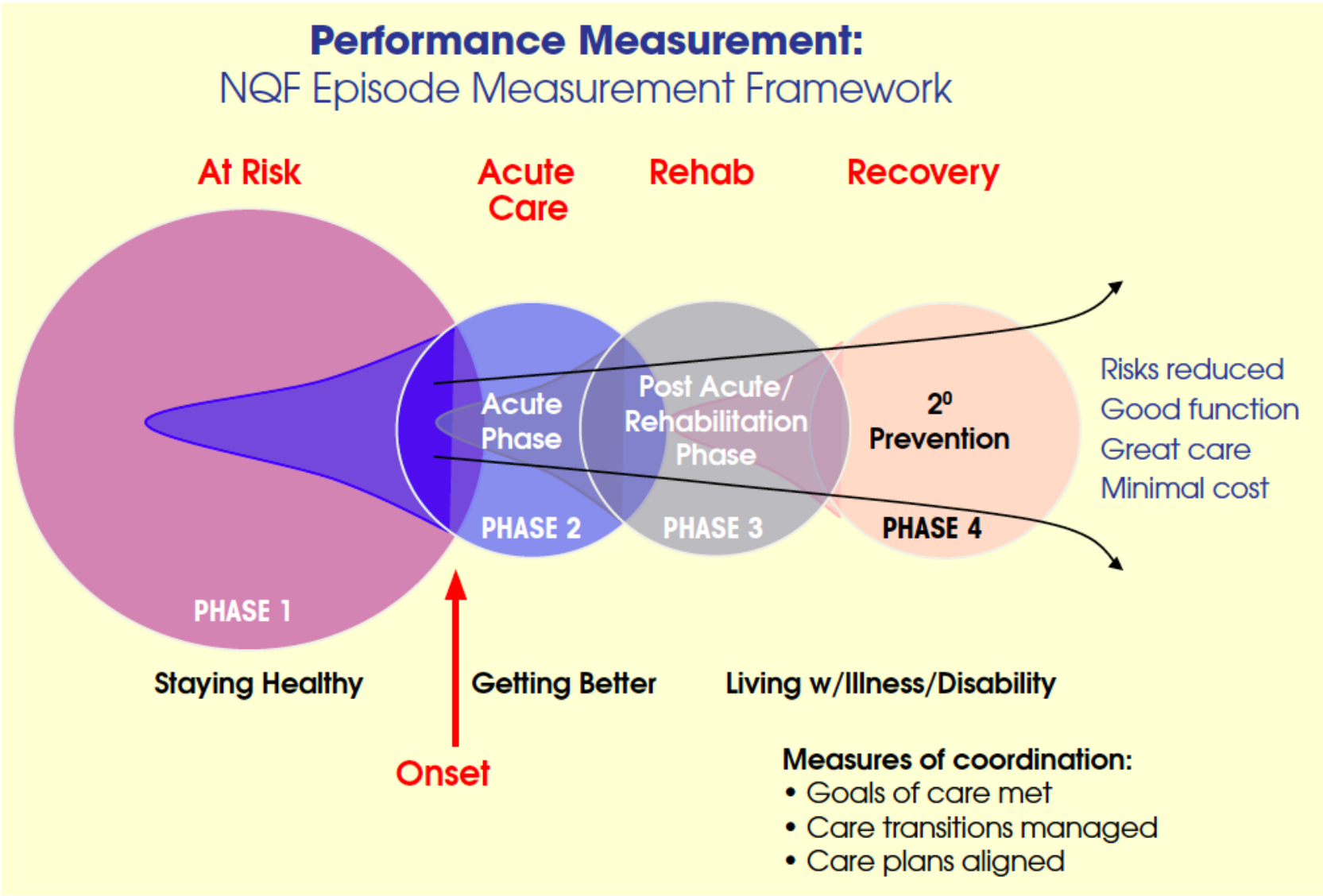

Table 2. Types of Long-term Care

Type	Description	Public Third-party Coverage	Basis for Medicare Payment	Cost Range, $/d	Predominant Physician Type
Postacute care					
Inpatient rehabilitation facilities	Facilities specifically licensed to provide active rehabilitation. Patients must receive at least 3 h a day of PT and/or OT and must show progress to be kept on Medicare.	Medicare (must have a qualifying condition) Medicaid	Prospective payment per episode based on case mix	1000-2000	Physiatrist
Skilled nursing facility	Many nursing homes certified to provide posthospital care under Medicare. Skilled needs include complex medication schedules, wound care, or rehabilitation.	Medicare Medicaid	Daily rate based on case mix (100 d but copayment after 20 d)	150-300	Primary care clinician (physician, nurse practitioner, both), medical director
Long-term care hospital	Facility certified by Medicare to handle complex care (eg, ventilator care and weaning) of patients discharged from hospitals.	Medicare	Variation of hospital payment DRG	1500-3000	Hospitalist
Home health care	Medicare-certified care supervised by registered nurses. Other core staff: physical, occupational, and speech therapists, and social workers.	Medicare Medicaid (limited)	Payment per episode based on case mix	100-300	Primary care clinician
Outpatient rehabilitation	May be certified to conduct active rehabilitation.	Medicare Medicaid	Payment per visit	100-200	Primary care clinician
Hospice/ palliative care	Intended for those at terminal phase of life with expected prognosis ≤6 mo. Hospice care is a specific benefit under Medicare; as such, it is predicated on primarily nonhospital care. Palliative care provides active support like hospice care but without the expectation of avoiding other medical care.	Medicare (hospice; palliative care options vary)	Payment per day	200-300	Primary care clinician or palliative care specialist

Kane RL, JAMA 2011

Long-term care					
Home care/ personal care	Services to support frail person who needs assistance in meeting various ADL or IADL care.	Medicaid (state plan and waivers)	Payment per hour (sometimes minimum number of hours)	75-150	Primary care clinician
Nursing home	Certified to provide long-term care; some offer specialized units for persons with dementia.	Medicaid	Payment per day	75-300	Primary care clinician (physician, nurse practitioner, both), medical director
Assisted living	Institutional care with self-contained units including living quarters, a private bathroom, and some modest cooking and food storage facilities; heterogeneous and minimally regulated. Serve less disabled clientele than nursing homes. Some offer specialized units for persons with dementia.	Medicaid in some states (waivers)	Payment per day or month	60-300	Primary care clinician
Day care or adult day health center	Care provided in centralized facilities for various periods of the day. Some also have medical or nursing services (ie, adult day health care vs social adult day care).	Medicaid (in some states)	Payment per use	60-120	Primary care clinician
Adult foster care	Small group living settings with care by nonprofessionals; more homelike than larger institutions.	Medicaid in some states (waivers)	Payment per month	50-100	Primary care clinician
Independent living	Room and board and some housekeeping; may have social activities and amenities.	None		50-100	Primary care clinician
Board and care	Variant of independent living, with room and some meals.	None		50-75	Primary care clinician

Kane RL, JAMA 2011

Growth in PAC providers from 2000 to 2007, U.S. data

	2000	2003	2006	2007	Average annual percent change 2000–2006	Percent change 2006–2007
Home health agencies	6,881	7,223	8,880	9,227	4.3%	3.9%
Long-term care hospitals	263	334	394	394	7.0	0.0
Inpatient rehabilitation facilities	1,117	1,211	1,224	1,202	1.5	–0.6
Skilled nursing facilities	14,777	14,876	15,008	15,060	0.3	0.3

Source:MedPAC analysis of data from Certification and Survey Provider Enhanced Reporting on CMS's Survey and Certification's Providing Data Quickly system for 1996–2007 and CMS Provider of Service data.

Do PAC really work?

PAC setting	Percent discharged from hospital to PAC setting	Percent rehospitalized after using PAC setting	Percent died in PAC setting	Percent discharged to a second PAC setting	Most common second PAC setting used
SNF	17.3%	22.0%	5.4%	29.3%	Home health
Home health	16.0	18.1	0.8	2.3	Hospice
Inpatient rehabilitation	3.2	9.4	0.4	56.8	Home health
Hospice	2.1	4.5	82.2	2.4	Home health
Long-term care hospital	1.0	10.0	15.5	53.4	SNF
Inpatient psychiatric	0.5	8.7	0.4	25.4	SNF
Total	40.0	18.0	6.2	19.8	Home health

Source: MedPAC analysis of 2006 claims files from CMS.

E in Italia cosa è la Post-Acuzie?

- …..Cosa possiamo aspettarci, quindi, da una attività sanitaria che non viene definita con un nome proprio, ma come “post” qualcosa. Appare realistico che ne derivino **interpretazioni soggettive, protocolli poco codificati, confusione nei ruoli professionali, incongruenze nelle regole amministrative.**
- Per quanto concerne gli aspetti temporali si tratta di **cure che si inseriscono in un preciso momento della storia di malattia**, successiva alla fase acuta (o di “criticità”) e precedente la fase stabilizzata (o di “cronicità”). Ha quindi un **tempo di inizio, una precisa successione temporale nella storia di malattia, una durata non indefinita.**

E. Brizioli in APPUNTI sulle politiche sociali n. 6/2005 www.grusol.it

UO Medicina Interna per le Cure Intermedie

- Le Cure Intermedie si indirizzano a quei **pazienti che, superata la fase acuta della malattia, risultano stabilizzati clinicamente, ma necessitano ancora di una fase di osservazione e continuità terapeutica e riabilitativa.**
- La struttura di Cure Intermedie è rivolta a pazienti in cui vi siano le **premesse per un recupero funzionale**, con l'obiettivo principale di riportare il paziente a domicilio o in strutture territoriali cercando anche di evitare un re-ricovero a breve distanza di tempo. Questi pazienti sono identificabili prevalentemente in soggetti affetti da pluripatologia ed in soggetti che necessitano ancora di assistenza sanitaria, ma **non ad alto contenuto tecnologico e ad alta intensità assistenziale**. Per tale motivo la struttura è dedicata a pazienti che presentino un grado di collaborazione e uno stato fisico tali da permettere un intervento fisioterapico mirato ed una riattivazione volta al recupero alle attività della vita quotidiana. **Non è pertanto né una lungodegenza, né accoglie pazienti cronici. Non è adatta a pazienti con demenza di grado avanzato**

SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Unità Sanitaria Locale di Ferrara

Lungodegenza Post Acuzie

Azienda USL Ferrara

La lungodegenza accoglie pazienti in fase di post-acuzie relativamente stabilizzati, ma ad alto rischio di instabilità clinica, richiedenti nursing qualificato e tutela medica o aventi necessità di riabilitazione estensiva.
I pazienti devono presentare un inquadramento diagnostico definito e un programma terapeutico dedicato, non attuabile in setting alternativi al ricovero ospedaliero.

Eccellenze:

Sono avviati progetti sperimentali di ortogeriatria e di assistenza alle gravissime disabilità:
1) 1/5 dei posti letto è dedicato a pazienti, prevalentemente anziani, ricoverati nel reparto di Ortopedia per frattura femorale o interventi di elezione.
2) 1-2 posti letto sono dedicati a pazienti con coma vigile o con gravissimi esiti di traumi/patologie.

A) Criteri di arruolamento:

- 1. Il paziente non richiede le cure di un ospedale per acuti ma necessita ancora di assistenza qualificata e di terapie di media complessità.
- 2. Il paziente ha delle necessità mediche più complesse di quelle che potrebbero essere gestite al domicilio.
- 3. Anche se clinicamente stabile, il paziente richiede ancora delle procedure diagnostiche o terapeutiche che non devono essere necessariamente eseguite in un ospedale per acuti.
- 4. Il paziente ha in corso un preciso programma terapeutico.

B) Le condizioni cliniche del paziente richiedono:

- 1. Coordinamento medico continuo con la necessità di un significativo numero di accessi del medico e dell'infermiere.
- 2. Assistenza infermieristica.
- 3. Sulla base delle necessità dei pazienti, l'eventuale supporto di servizi intermedi quali il laboratorio analisi e la radiodiagnostica.
- 4. Un approccio multiprofessionale e multidisciplinare fortemente orientato al risultato.

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PAC and LTC are quite different, at least in theory

PAC

- has a much more active rehabilitative and recuperative goal.
- Patients can reasonably expect to improve their status

LTC

- implies ongoing support designed to respond to deficits in functioning.
- success is better measured as slowing the rate of decline

Kane RL, JAMA 2011

Ma dove deve andare un paziente come questo?

The 76-year-old man has languished in the hospital for the **past 3 months, a resident of practically every major unit in turn**. He was first admitted to Surgery for an emergency laparotomy, which revealed bowel cancer. From there, he went to **Rehab** for a short stint. But he **developed pneumonia** and was transferred to the **Medicine unit, where he needed an isolation bay**. When he became **agitated, the night resident gave him haloperidol**. But he became sedated and, unable to find his call bell or attract anyone's attention through the closed doors, **he got up unassisted - and fell, fracturing his hip**. **Ortho took him to the operating theater, after which he returned to Rehab. Two weeks into Rehab, his abdominal wound dehisced. So he is back in Medicine for antibiotics and wound care.**

Srivastava R, N Engl J Med 364:1691-3, 2011

Provenienza dei pazienti – RGG vs UCSA

	RGG	UCSA
	N (%)	N (%)
Geriatria	82 (30)	11 (44)
Medicina	47 (17)	3 (12)
Neurologia	18 (7)	
Terapia intensiva	4 (2)	
Cardiologia	3 (1)	
Ortopedia	48 (18)	4 (16)
Chirurgia	9 (4)	1 (4)
Riab Spec		1 (4)
Riab Ger		2 (8)
Altro Ospedale	15 (6)	2 (8)
Casa	43 (16)	

Boffelli et al, 2011

Caratteristiche della popolazione generale

Boffelli et al, 2011	**RGG**	**UCSA**
Caratteristiche anagrafiche		
Età (anni)	80.1±8.4	79.1±9.8
Sesso femminile	(n. 111) (62%)	(n. 16) (64%)
Scolarità	6.0±2.4	6.3±2.9
Condizioni sociali premorbose		
Vive solo	44 (24.6)	9 (36)
Vive col coniuge	78 (43.6)	8 (32)
Vive con parenti (figli)	35 (19.6)	8 (32)
Vive con badante	19 (10.6)	--
Comunità/RSA	03 (1.7)	--
Barthel premorboso	77.4±22.7	74.6±22.4
Barthel ingresso	34.4±22.9	40.2±31.0
Barthel dimissione	60.0±28.6	47.0±33.5
IADL (f. perse-premorboso)	4.1±2.7	4.4±3.0
IADL (f. perse - ingresso)	6.0±2.0	5.9±2.5
Tinetti ingresso	7.3±7.0	9.9±9.8
equilibrio	4.4±4.0	5.9±5.4
andatura	2.7±3.1	4.9±6.5
Tinetti dimissione	16±8.5	11.7±11.2
equilibrio	09±4.6	7.1±6.1
andatura	6.8±3.9	5.2±5.2
Baylock Scale (BRAS: high risk>20)	21±5.4	20.7±6.8

Caratteristiche della popolazione generale

Boffelli et al, 2011	**RGG**		**UCSA**	
	M (ds)	N (%)	M (ds)	N (%)
MMSE ingresso	19.7±8.7		18.5±10.4	
MMSE dimissione	21.5±7.7		21.1±9.6	
GDS ingresso	03.8±3.1		4.3±3.2	
GDS dimissione	02.9±2.6		1.9±1.1	
Delirium prevalente		51(29.5)		10 (40)
Delirium incidente		15 (8.4)		3 (12)
Numero di malattie	9.8±3.1		11.2±3.7	
Numero di farmaci (dimissione)	7.6±2.6		8.4±2.9	
CIRS severità	1.6±0.2		2.0±0.4	
CIRS comorbilità	2.7±1.4		3.9±3.7	
Hb ingresso (g/dl)	11.4±1.6		--	
Hb dimissione	11.2±1.4		11.2±1.3	
Albumina ingresso (g/dl)	2.9±0.5		2.9±0.3	
Albumina dimissione	2.8±0.5		3.2±0.3	
Colesterolo ingresso (mg/dl)	158.7±38.8		172±32.5	
Colesterolo dimissione	161.9±37.1		186±46.5	
VES ingresso (<15 mm)	40.7±30.7		48.2±25.3	
PCR ingresso (<5 mg/l)	36.1±42.1		39.2±21.2	

Procedure ed outcome nella popolazione generale

	RGG	UCSA
Procedure	M (ds)/N (%)	M (ds)/N (%)
Numero procedure (ECG, RX, cons.)	3.5±2.1	2.5±0.7
Catetere vescicale ingresso	54 (30.2)	6 (24)
Catetere vescicale dimissione	24 (14.4)	3 (12)
Lesione da decubito ingresso	22 (12.3)	5 (20)
Lesione da decubito dimissione	17 (9.5)	2 (8)
Outcome		
Eventi acuti intercorrenti (range 0-5)	0.5±0.8	0.4±0.5
Frequenza eventi acuti	73 (41)	10 (40)
>1 evento acuto	21 (11)	1 (4)
Decesso	15 (8.4)	2 (8)
Durata della degenza	20.1±11.0	19.0±11.1
Degenza ≤ 20 giorni	(60.7)	(52.9)
Degenza > 20 giorni (22-68)	(39.3)	(47.1)
Riammissioni	(2.2)	(4)

Boffelli et al, 2011

Confronto fra caratteristiche di 3 UCSA

	Milano	*Soncino*	*Poliambulanza*
Posti letto/n pazienti x anno	10 p.l. / nd	10 p.l./ 339 pz	10 p.l. / 25 pz in 40 gg
Area provenienza medica/chirurgica/riabilitaz.	80/20/nd %	70/30/nd %	56/24/12 %
Degenza media	29 gg	10 gg	19 gg
Autosuff. (Parziali vs Non Auto)	--	50 vs 35%	52 vs 36%
Dimissione			Dimessi 14/25
Casa	26%	40%	24%
Riabilitazione	21%	30%	16%
Ospedale acuti	14%	--	16%
RSA	23%	12%	8%
Deceduti	16%	14%	8%
Re-ricoveri a 6 mesi	14%	17%	--
Peso medio IIA	30% > 3	--	2.8

Boffelli et al, 2011

INCIDENZA E FATTORI DI RISCHIO PER RIOSPEDALIZZAZIONE IN PAZIENTI RICOVERATI IN UN SETTING DI RIABILITAZIONE

A. Morandi,[1,2], F Guerini[1,2], S Gentile,[1,2] R Turco,[1,2] S Speciale,[2,3] T Torpilliesi,[1,2] G Bellelli[2,4],M Trabucchi[,2,5]

- **L'incidenza di riospedalizzazione è significativamente inferiore a quella degli Stati Uniti (4% contro 19%)**
- **La riabilitazione geriatrica a Cremona svolge funzioni anche di intermediate care?**

4% **riospedalizzazione complessiva**
27% entro 7 giorni
61% tra 8-30 giorni
12% > 31 giorni

Caratteristiche comparative di 5 UO Riabilitazione Lombarde partecipanti al progetto IPER

	PAC 1 (n=63)	PAC 2 (n=61)	PAC 3 (n=42)	PAC 4 (n=35)	PAC 5 (n=32)
Età, anni	83.1±6.6	81.2+7.0	83.1+4.8	80.9□6.9	82.1+7.6
Sesso femm, n (%)	38 (61.3)	41 (67.2)	34 (81.0)	19 (54.3)	22 (68.8)
MMSE, media ± DS	21.0 ± 8.8	16.0 ± 9.1	20.6 ± 9.6	22.2 ± 7.0	20.0 ± 8.0
Rankin (premorb)	2.4 ± 1.5	2.4 ± 1.3	2.2 ± 1.3	1.4 ± 1.4	2.4 ± 1.4
Barthel pre-ricovero	75.1 ± 26.8	80.4 ± 23.3	79.1 ± 27.1	92.3 ± 12.5	63.5 ± 29.6
Barthel ingresso	30.4 ± 28.0	26.4 ± 18.0	29.4 ± 22.5	49.3 ± 26.5	31.2 ± 21.7
Non deambulante	45 (71.4)	44 (72.1)	38 (90.5)	12 (34.3)	23 (71.9)
Stroke	16 (25.4)	13 (21.3)	2 (4.8)	6 (17.1)	3 (9.4)
Hip fracture	20 (31.7)	27 (44.3)	21 (50.0)	11 (31.4)	15 (46.9)
Instabilità clinica	27 (42.9)	9 (14.8)	2 (4.8)	2 (5.7)	6 (18.8)
Delirium	3 (4.8)	-	-	6 (17.1)	3 (9.4)
Infezione in atto	25 (39.7)	16 (26.2)	17 (40.5)	9 (25.7)	5 (15.6)
Decubiti	20 (31.7)	14 (23.0)	21 (50.0)	5 (14.3)	6 (18.8)

Considerazioni

- Almeno in Italia (Lombardia) non sembrano esserci differenze tra Riabilitazione Geriatrica e PAC.
- Laddove esistenti le evidenze suggeriscono che le riabilitazioni geriatriche (e le UCSI) rispondano contemporaneamente a bisogni clinici e riabilitativi dei propri pazienti

Perché nella pratica clinica non ci sono differenze tra PAC e RGG (e RSA): considerazioni

- Difficoltà da parte dei medici ospedalieri nell'identificare gli obiettivi ottimali della care e le caratteristiche distintive tra le opzioni di cura
- Ambiguità di fondo che deriva da un'estrema varietà di opzioni (dei setting di cura post-acuti), in un contesto (ospedaliero) che richiede decisioni rapide
- Sistemi di pagamento differenti (ospedali =DRG e riabilitazione= giornate di degenza)

Outline della presentazione

- Quale è il problema
- Quali sono le opzioni di cura dopo la dimissione dall'ospedale per acuti
- Ci sono differenze tra PAC e riabilitazione geriatrica?
- Funzionano le esperienze di intermediate care?
- Come decidere se un paziente avrà più bisogno di attenzioni cliniche o riabilitative
  - I Dati IPER2 della sperimentazione lombarda
- Conclusioni

Creating Accountable Care Organizations: The Extended Hospital Medical Staff

A new approach to organizing care and ensuring accountability.

by Elliott S. Fisher, Douglas O. Staiger, Julie P.W. Bynum, and Daniel J. Gottlieb

ABSTRACT: Many current policies and approaches to performance measurement and payment reform focus on individual providers; they risk reinforcing the fragmented care and lack of coordination experienced by patients with serious illness. In this paper we show that Medicare beneficiaries receive most of their care from relatively coherent local delivery systems comprising physicians and the hospitals where they work or admit their patients. Efforts to create accountable care organizations at this level—the extended hospital medical staff—deserve consideration as a potential means of improving the quality and lowering the cost of care. [*Health Affairs* 26, no. 1 (2007): w44–w57 (published online 5 December 2006; 10.1377/hlthaff.26.1.w44)]

Transitional care facility for elderly people in hospital awaiting a long term care bed: randomised controlled trial

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continued over

BMJ 2005;331:1110–3

Abstract

Objective To assess the effectiveness of moving patients who are waiting in hospital for a long term care bed to an off-site transitional care facility.

Design Randomised controlled trial.

Setting Three public hospitals in Southern Adelaide.

Participants 320 elderly patients (mean age 83 years) in acute hospital beds (212 randomised to intervention, 108 to control).

Interventions A transitional care facility where all patients received a single assessment from a specialist elder care team and appropriate ongoing therapy.

Main outcome measures Length of stay in hospital, rates of readmission, deaths, and patient's functional level (modified Barthel index), quality of life (assessment of quality of life), and care needs (residential classification scale) at four months.

Results From admission, those in the intervention group stayed a median of 32.5 days (95% confidence interval 29 to 36 days) in hospital. In the control group the median length of stay was 43.5 days (41 to 51 days) (95% confidence interval for difference 6 to 16 days). Patients in the intervention group took a median of 21 days (6 to 27 days) longer to be admitted to permanent care than those in the control group. In both groups few patients went home (14 (7%) in the intervention group *v* 9 (9%) in the control group). There were no significant differences in death rates (28% *v* 27%) or rates of transfer back to hospital (28% *v* 25%).

Conclusions For frail elderly patients who are awaiting a residential care bed transfer out of hospital to an off-site transitional care unit with focus on aged care "unblocks beds" without adverse effects.

ELPS *This is the abridged version of an article that was posted on bmj.com on 2 November 2005: http://bmj.com/cgi/doi/10.1136/bmj.38638.441933.63*

Transitional Care of Older Adults Hospitalized with Heart Failure: A Randomized, Controlled Trial

Mary D. Naylor, PhD,[*†] *Dorothy A. Brooten, PhD,*[‖] *Roberta L. Campbell, PhD,*[*] *Greg Maislin, MS, MA,*[¶] *Kathleen M. McCauley, PhD,*[*] *and J. Sanford Schwartz, MD*[†‡§]

Table 3. Rehospitalizations and Hospital Days 1 Year After Index Hospitalization Discharge

Variable	Intervention (n = 118)	Control (n = 121)	*P*-value*	Relative Risk (95% Confidence Interval)
Patients rehospitalized, n (%)				
> 1 time	53 (44.9)	67 (55.4)	<.121	1.24 (0.95–1.60)
> 2 times	34 (28.8)	44 (36.4)	<.218	1.20 (0.89–1.60)
Rehospitalizations, n				
Index-related	40	72	<.184	
Comorbidity-related	23	50	<.013	
New health problem	41	40	<.881	
Total	104	162	<.047	
Rehospitalizations per patient/year†	1.18	1.79	<.001	
Total hospital days	588	970		
Per patient, mean ± SD	5.0 ± 7.3	8.0 ± 12.3	<.071	
Per rehospitalized patient, mean ± SD	11.1 ± 7.2	14.5 ± 13.4	<.411	

Naylor et al, J Am Geriatr Soc 2004

The Care Transitions Intervention

Results of a Randomized Controlled Trial

Table 3. Utilization Outcomes*

Variable	Intervention Group (n = 379)	Control Group (n = 371)	2-Sided *P* Value†		OR (95% CI)
			Unadjusted	Adjusted‡	
Rehospitalization					
Within 30 d	8.3	11.9	.11	.048	0.59 (0.35-1.00)
Within 90 d	16.7	22.5	.05	.04	0.64 (0.42-0.99)
Within 180 d	25.6	30.7	.15	.28	0.80 (0.54-1.19)
Rehospitalization for same diagnosis as index hospitalization					
Within 30 d	2.8	4.6	.21	.18	0.56 (0.24-1.31)
Within 90 d	5.3	9.8	.03	.04	0.50 (0.26-0.96)
Within 180 d	8.6	13.9	.045	.046	0.55 (0.30-0.99)

Table 4. Nonelective Hospital Cost Outcomes*

Nonelective Hospital Costs	Intervention Group (n = 379)	Control Group (n = 371)	2-Sided *P* Value†	
			Unadjusted	Log Transformed
At 30 d	784 (3916)	918 (2971)	.048	.06
At 90 d	1519 (4914)	2016 (4872)	.02	.02
At 180 d	2058 (5452)	2546 (5466)	.04	.049

Coleman E, et al, Arch Intern Med 2006

Table 1. Care Transitions Intervention Activities by Pillar and by Stage of Intervention

	Four Pillars			
Stage of Intervention	**Medication Self-management**	**Patient-Centered Record**	**Follow-up**	**Red Flags**
Goal	Patient is knowledgeable about medications and has medication management system	Patient understands and uses PHR to facilitate communication and to ensure continuity of care plan across providers and settings; patient manages PHR	Patient schedules and completes follow-up visit with primary care provider or specialist and is prepared to be an active participant in interactions	Patient is knowledgeable about indications that condition is worsening and how to respond
Hospital visit	Discuss importance of knowing medications and having a system in place to ensure adherence to regimen	Explain PHR	Recommend primary care provider follow-up visit	Discuss symptoms and drug reactions
Home visit	Reconcile prehospitalization and posthospitalization medication lists Identify and correct discrepancies	Review and update PHR Review discharge summary Encourage patient to update and share PHR with primary care provider or specialist at follow-up visits	Emphasize importance of follow-up visit and need to provide primary care provider with recent hospitalization information Practice and role-play questions for primary care provider	Assess condition Discuss symptoms and adverse effects of medications
Follow-up telephone calls	Answer remaining medication questions	Remind patient to share PHR with primary care provider or specialist Discuss outcome of visit with primary care provider or specialist	Provide advocacy in getting appointment, if necessary	Reinforce when primary care provider should be telephoned

Coleman E, et al, Arch Intern Med 2006

Care Coordination Activities

- Determine and update care coordination needs
- Create and update a proactive plan of care
- Communicate: **PCMH**
  - Between health care professionals & patients/family
  - Within teams of health care professionals
  - Across health care teams or settings
- Facilitate transitions
- Connect with community resources
- Align resources with population needs **ACO**

Mor V 2011

Outline della presentazione

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- Come decidere se un paziente avrà più bisogno di attenzioni cliniche o riabilitative
  - I Dati IPER2 della sperimentazione lombarda
- Conclusioni

Centri partecipanti allo studio

1. Istituto Clinico Humanitas
2. Istituto Clinico Golgi, Abbiategrasso
3. Ospedale Niguarda
4. Ancelle della Carità Cremona
5. Istituto Don Orione
6. PAT Dipartimento Degenza Geriatrica Riabilitativa
7. Fondazione Benefattori Cremaschi-Onlus
8. Azienda Speciale Comunale “Cremona Solidale”
9. Fondazione G Brunenghi Castelleone Cremona
10. Domus Salutis
11. Ospedale di Viadana
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13. Fondazione Ospedale Richiedei Gussago e Palazzolo
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23. Ist Sacra Famiglia rep S Vincenzo
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25. Div Rec Rieduc Funzionale Ospedale S. Antonio Abate Gallarate
26. Riabilitazione Specialistica e Generale-Geriatrica Ist Osp Cremona
27. Fondazione Gaetano e Piera Borghi
28. Centro Girola Fondazione don Carlo Gnocchi ONLUS
29. Istituto Geriatrico "Mons. A. Mazzali"

A score to predict the development of adverse clinical events in post-acute care and patient's return to home

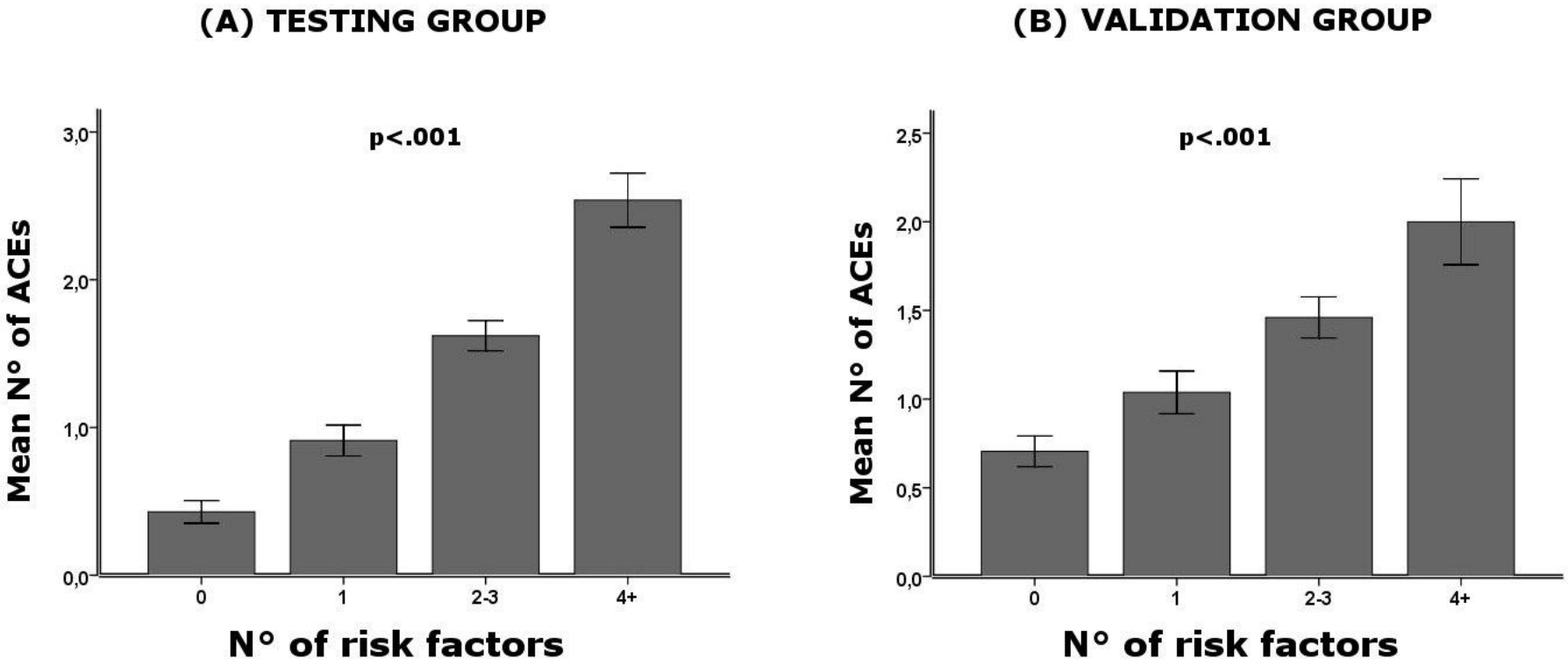
- Objective: To develop and validate a method for identifying elderly patients who are at increased risk of adverse clinical events (ACEs) in Post-Acute Care (PAC) facilities.
- Methods: Data obtained from 19 PAC facilities. All patients admitted to these facilities in the period from July 1st to August 14th 2009 were eligible for the study if they were aged 65 or more and if a written informed consent was obtained from patients or relatives.
- 502 elderly patients (mean age: 81+7 years) eligible for the study. Variables showing a stable association with ACEs in the testing group were identified and used to derive the score. The relative risk (RR) of developing ACEs according to the score was measured in the validation group.
- 164 (32%) pts had 1 ACE, 99 (19.7%) had 2, and 62 (12.3%) had 3 or more ACEs

Bellelli G et al, unpublished data

Table 3. Variables significantly associated with incident ACEs on multiple regression analysis in the testing sample (n=252).

	Stepwise regression (bootstrap)				Linear regression (permutation)
	stable	p	B	IC	P
Age>87 yrs	Yes	0.003	0.432	(0.150, 0.729)	0.04
Bladder catheter	Yes	<0.001	0.479	(0.292, 0.715)	0.02
Pressure sores	Yes	0.001	0.505	(0.323, 0.777)	0.03
Acute infection	Yes	0.001	0.491	(0.327, 0.752)	0.05
Delirium	Yes	0.002	0.681	(0.441, 1.095)	0.07
Malnutrition	yes	0.001	0.524	(0.348, 0.813)	0.09

Figure 1. Histogram showing the mean (+SE) number of ACEs during PAC stay according to the number of risk factors on admission in the (A) testing and in the (B) validation group



Bellelli G et al, unpublished data

Table 4. Frequency of the risk factors on admission (rows) at different levels of clinical severity, as measured by the number of ACEs (columns) in the testing and validation group.

		Outcome: N° of ACEs							
		Testing group				**Validation group**			
		0	1+	2+	3+	0	1+	2+	3+
N of risk factors	0	60.2	17.6	7.2	6.7	61.9	30.1	20.5	18.8
	1	26.9	27.0	19.3	10.0	17.9	22.9	16.7	12.5
	2-3	12.9	47.2	59.0	56.7	17.9	36.7	46.2	43.8
	4+	0.0	8.2	14.5	26.7	2.4	10.2	16.7	25.0

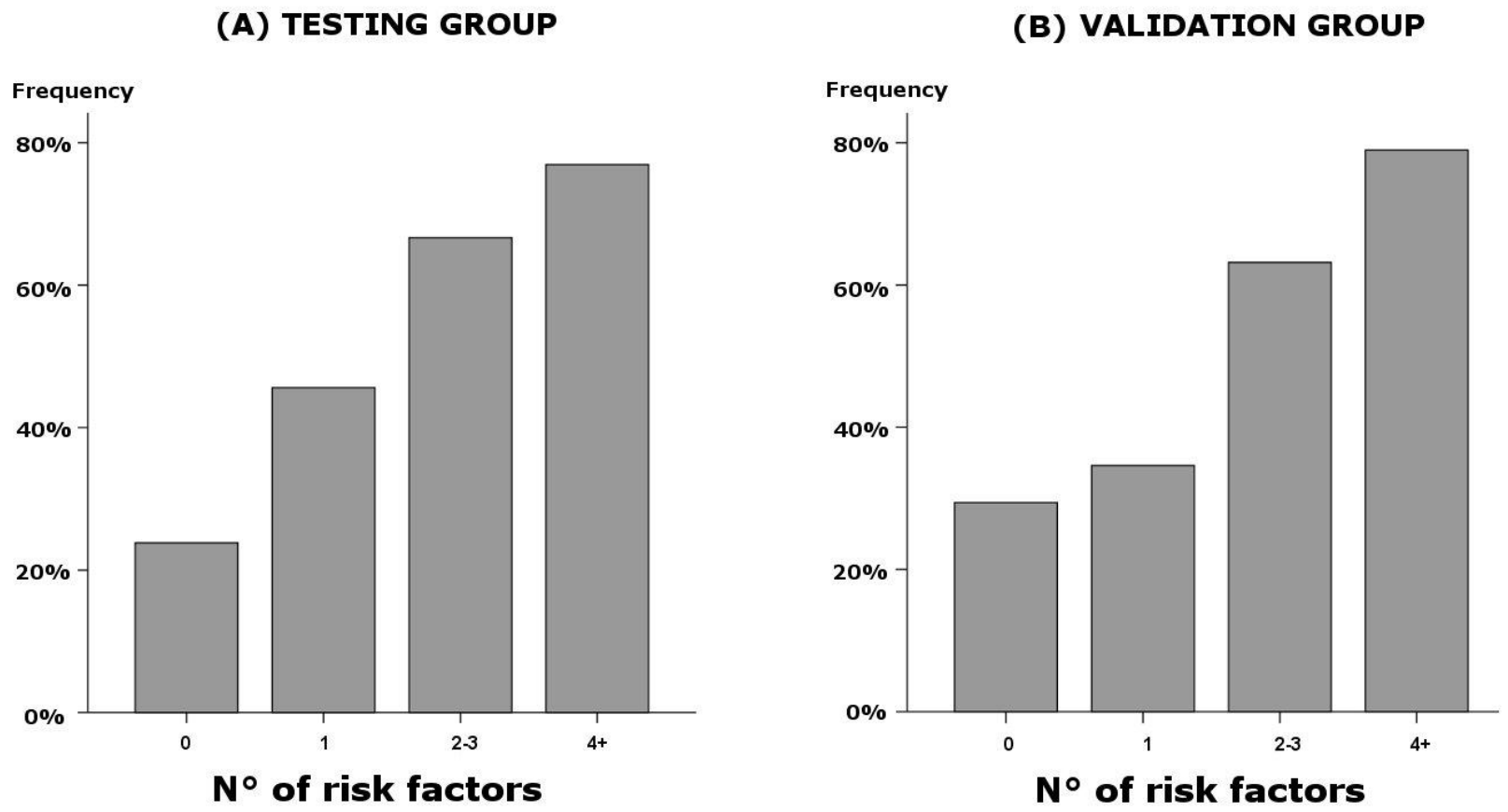
Table 5. Relative risks (95% CI) of developing ACEs during PAC stay in patients with a score greater than 0 on admission vs reference group (patients with a score of 0).

Outcome: N° of ACEs

		Testing group			**Validation group**		
		1+	2				
N of risk factors	1	1.9 (1.3-2.7)	(				2.0 6-6.5)
	2-3	2.6 (1.9-3.5)	(3				4.7 0-10.9)
	4+	3.0 (2.2-4.1)	10.3 (4.8-22.1)	29.0 (7.4-113.2)	1.8 (1.4-2.3)	3.7 (2.3-5.9)	7.7 (3.4-17.5)

Worked example: based on this score, a 88-year old person admitted to a PAC facility with an indwelling bladder catheter has a 3-fold increased risk of having two or more adverse clinical events.

Figure 2. Histogram showing the frequency of discharge other than home in patients according to the number of risk factors on admission in the (A) testing and in the (B) validation group.



Bellelli G et al, unpublished data

Considerazioni

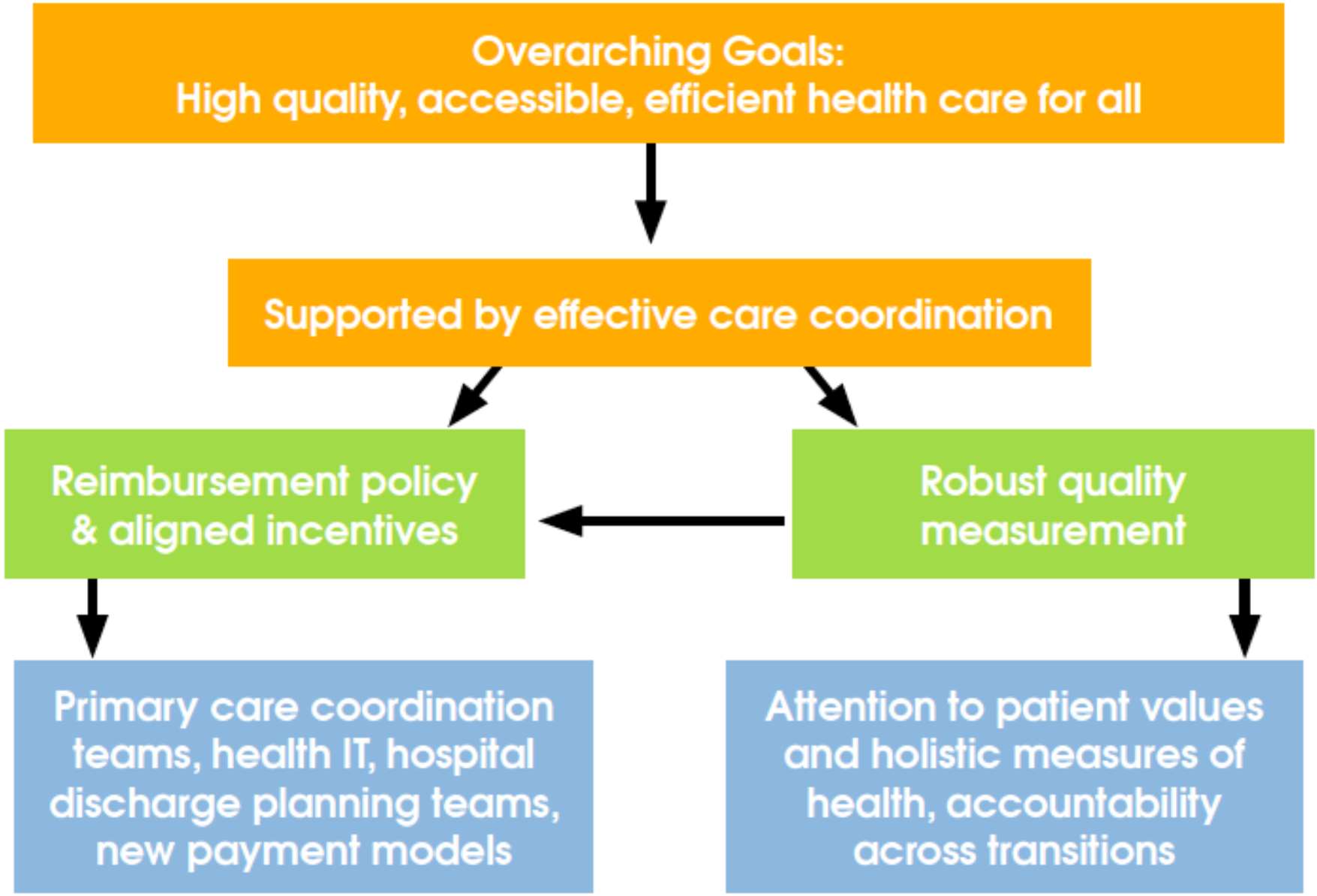
- Un sistema di indicatori semplice, basato sulla determinazione -durante il ricovero in ospedale- dell'età più 5 variabili tipicamente geriatriche (delirium, infezione in atto, lesione da decubito, malnutrizione, presenza di catetere vescicale alla dimissione) consente di predire con elevata accuratezza il rischio di sviluppare ACE nei setting di post-acuzie e il successivo esito alla dimissione

La necessità di framework concettuali differenti per identificare indicatori di accesso ai servizi di post-acuzie

- The first step in assessing, and ultimately improving, access is to establish a **set of indicators** that can be used to monitor access to such services. Such a system would be **analogous** to the well-established **system of economic indicators** that measure economic health and that includes variables such as unemployment rate, inflation, consumer confidence, and new housing starts.

Ottenbacher, APMR 2007

Policy Levers for Better Care Coordination



Conclusioni

- Usando strumenti come quello presentato, i medici ospedalieri potrebbero mappare i bisogni clinici dei pazienti da dimettere nei setting di post-acuzie
- Sulla base di tali rilevazioni si potrebbero anticipare possibili opzioni di cura ed assistenza in post-acuzie
- Gli interventi di politica sanitaria dovrebbero andare nel senso di una programmazione di reparti in grado di coniugare interventi di varia natura (clinica, infermieristica, fisioterapica) ma a differenti livelli di intensità

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