



SOCIETÀ ITALIANA  
DI GERONTOLOGIA  
E GERIATRIA

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# Bollettino SIGG

Supplemento al numero 8 – agosto 2004

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**“The future of geriatric wards in general hospitals”**

**presentazione al prossimo congresso della  
European Union Geriatric Medicine Society di Vienna**



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Colgo l'occasione della presentazione al congresso della European Union Geriatric Medicine Society di Vienna di una relazione su "The future of geriatric wards in general hospitals" per far conoscere ai soci una elaborazione sul problema dei reparti di geriatria negli ospedali per acuti.

Sulla linea dell'importante documento sulle UGA che abbiamo elaborato negli anni scorsi, riterrei opportuno aprire un dibattito; fin dal bollettino di settembre diffonderemo contributi, commenti e critiche che arriveranno in redazione. Lo scopo finale sarebbe la pubblicazione sul Giornale di Gerontologia di un lavoro collettivo che testimoni l'interesse dei soci per l'argomento e costruisca un ulteriore passo avanti per difendere un segmento fondamentale e irrinunciabile della rete dei servizi geriatrici.

Mi scuso se le diapositive allegate sono in inglese, ma ho preferito lasciare la presentazione nella forma originale.

Ringrazio chi vorrà cogliere l'invito al dibattito.

Buon lavoro!

*Marco Trabucchi*

## THE FUTURE OF GERIATRIC WARDS IN GENERAL HOSPITALS

*Marco Trabucchi*

The European scenario is characterized by the pressure for reducing the number of hospital beds and the national policy agendas are dominated by an emphasis on developing intermediate care and community services for older people.

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Geriatric wards in the hospitals are closing and converted to departments of continuum care without beds and with a generic mission of coordinating hospital discharge with other services in the community.

n. 3

The reasons of these changes are:

- cultural
- organizational
- economical

n. 4

Do we accept passively this in evolution on the role of geriatric wards in acute hospitals?

n. 5

Geriatrics must strongly affirm its own peculiar cultural background and its own funds of evidence-based success in the care of older patients. Efforts must be put in acquiring further evidence in specifically lacking areas (e.g. randomized clinical trial targeting currently excluded older, disabled individuals with multiple comorbidities).

n. 6

Geriatric must avoid frustrations and feelings of failure, since battles can not be win by grumbling or with a defense attitude. However we must identify "a direction of travel rather than an instant panacea".

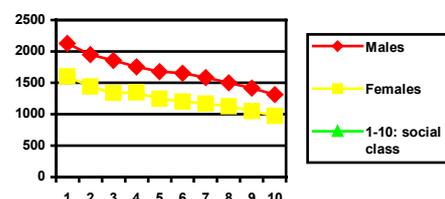
n. 7

Acute hospitals are considered a highly "protected and protective" environment by frail old people.

(Censis, 2004)

n. 8

Rate of hospitalization and social class  
(Rome, 1997-2000, over 75 yrs)



n. 9

### The critical points

- Facing the increasing numbers of older patients in acute hospitals
- Identifying specific subsets of older patients who are best treated in geriatric wards
- Setting the standards of the procedures to be adopted by geriatric wards
- Examples of problems for a good in hospital geriatric practice
- The multiple functions of a geriatric ward in acute hospitals
- Defining the appropriateness of hospitals for patients “who have many things going wrong”
- Helping geriatrics to protect older persons’ dignity
- Including geriatrics in the mainstream of medical culture and practice.

n. 10

### The increasing number of older patients in acute hospitals

- 61% of patients in acute hospital beds are 65 and over (Hubbard et al, 2004)
- 80% of the in-patients in the medical area have a mean age of 78±8.2 years (Rozzini et al, 2004)

Is it politically tenable a formal and general “geriatricization” of all medical wards?

n. 11

### Characteristics of medical patients admitted to a Geriatric or to a General Internal Medical Ward in a six months period (January,1 to June 30, 2004) .

	Geriatric Ward		General Internal Medical Ward	
	Standard N=455 (77%)	SICU* N=139 (23%)	Age>65 N=580 (64%)	Age<65 N=330 (36%)
Age (years)	78.0±9.9	79.1±5.3	78.1±8.2	47.7±11.7
Charlson Index	6.9±2.7	6.6±2.2	6.8±2.7	2.8±1.4
Length of stay (days)	6.4±4.8	7.1±5.3	6.5±4.3	6.7±6.8
DRG** point	1.25±0.8	1.84±1.9	1.15±0.7	1.18±0.8

\*SICU: Sub Intensive Care Unit  
\*\*DRG: Diagnoses Related Group

(J Gerontol, 2004 in press)

n.12

### The definition of the specific population of elderly for the geriatric wards

- ER and the allocation of patients (only 25% of the patients are elective admissions)
- An age criterion (over 80 years)?
- A frailty criterion? Isn’t there a risk of “implosion” of geriatric wards when frail, disabled, demented and acutely ill elderly are clusterized in the same setting?

n. 13

### Characteristics of 2850 elderly patients admitted to a Geriatric Ward according to Activity of Daily Living (Barthel Index) function on admission to Hospital.

	Barthel Index on admission			p-value*
	100 (n=921)	40-95 (n=1496)	0-35 (n=434)	
	M±SD(%)	M±SD(%)	M±SD(%)	
Age	72.4±9.7 (58.4)	80.3±8.0 (72.2)	82.4±7.0 (70.3)	<0.001
Gender (female)	27.2±5.1	23.3±7.8	14.6±10.1	<0.001
MMSE score (0-30)	3.9±3.3	5.5±3.6	5.6±3.6	<0.001
GDS score (0-15)	0.8±1.6	3.6±2.6	5.5±2.8	<0.001
IADLs lost ** (n)	100	76.9±16.5	11.6±12.1	<0.001
Barthel Index (on admission)	5.6±2.2	7.1±2.5	8.4±2.7	<0.001
Charlson Index (0-33)	4.0±1.9	4.3±1.8	4.5±2.0	0.005
Drugs (n)	6.5±3.1	8.2±4.1	11.4±5.9	<0.001
APACHE II score (0-71)	(14.2)	(21.8)	(58.1)	<0.001
Serum albumin <3.5 (g/dl)				
Chief reason for admission				
Acute dyspnea/other pulmonary problem	(16.7)	(19.5)	(34.6)	<0.001
GI bleeding or other GI problem	(15.7)	(12.2)	(14.4)	ns
CHF or other cardiac problem	(24.8)	(16.2)	(8.1)	<0.001
Length of stay	5.9±2.8	6.6±3.2	7.1±4.6	<0.001

\*ANOVA

\*\* Detected two weeks before admission.

(JAGS, 2004 in press)

n. 14

Higher the disability, higher the burden of in hospital care.

n. 15

Acute hospitals and the network of services for the elderly.

n. 16

### Setting the standards of procedures to be adopted by geriatric wards

- What can geriatrics offer to older persons beyond that is offered by a general medical ward?
- Is it useful that geriatric procedures are spread out into all services or must they be confined in specifically devoted areas (i.e.: geriatric wards)?
- Is treatment in a day-hospital setting an adequate response to all ill older patients’ needs?
- The model of ACE units

n. 17

## SPECIAL ARTICLES

## A RANDOMIZED TRIAL OF CARE IN A HOSPITAL MEDICAL UNIT ESPECIALLY DESIGNED TO IMPROVE THE FUNCTIONAL OUTCOMES OF ACUTELY ILL OLDER PATIENTS

C. SETH LANDEFELD, M.D., ROBERT M. PALMER, M.D., DENISE M. KRESEVIC, M.S.N., RICHARD H. FORTINSKY, PH.D., AND JEROME KOWAL, M.D.

n. 18

**Background.**

Older persons who are hospitalized or acute illnesses often lose their independence and are discharged to institutions for long-term care.

**Methods.**

We studied 651 patients 70 years of age or older who were admitted for general medical care at a teaching hospital; these patients were randomly assigned to receive usual care or to be cared for in a special unit designed to help older persons maintain or achieve independence in self-care activities.

The key elements of this program were a specially prepared environment; patient-centered care emphasizing independence, including specific protocols for prevention of disability and for rehabilitation; discharge planning with the goal of returning the patient to his or her home; and intensive review of medical care to minimize the adverse effects of procedures and medications.

The main outcome we measured was the change from admission to discharge in the number of five basic activities of daily living (bathing, getting dressed, using the toilet, moving from a bed to a chair, and eating) that the patient could perform independently.

(Landefeld et al. *N Engl J Med* 1995;332:1338-44)

n. 19

**Acute Care for Elders (ACE)**

A new system of care designed to help acutely ill older patients to maintain or achieve independence in ADL:

- prepared environment
- patient-centered care
- planning to go home
- medical care review

n.20

**Evidence of the Effects of ACE**

•RCT enrolling 651 medical patients  $\geq 70$  yrs

<u>ADL at Discharge</u>	<u>ACE</u>	<u>Usual Care</u>
Better than on admission	34%	24%
Unchanged	50%	54%
Worse than on admission	16%	21%
	P=0.009	

(Landefeld et al., *N Engl J Med* 1995;332:1338-44)

n. 21

**Evidence of the Effects of ACE**

<u>Discharge Outcome</u>	<u>ACE</u>	<u>Usual Care</u>	<u>P</u>
Excellent/Good Health	51%	36%	0.001
Better Able to Walk	19%	14%	0.10
#Depressive Symptoms	3.7	4.6	0.02
Returned Home	86%	78%	0.01

(Landefeld et al., *N Engl J Med* 1995;332:1338-44)

n. 22

**Characteristics of 3000 elderly patients consecutively  
in a Medical Unit for the Acute Care of the Elderly (ACE Unit)**

M±SD(%)

Age-yr	80.2±7.1
Females (%)	(69)
Admitted from ER	(83)
Length of stay	6.7±1.8
≤7 days	4.9±1.5 (72.7)
>7 days	10.8±3.8 (27.3)
DRG weight (mean)	1.01±1.0
Barthel Index before admission	82.6±24.6
Barthel Index on admission	72.7±31.7
No. of IADL lost two weeks before admission	3.3±2.8
Chief reason for admission	
Cardiovascular (chest pain, congestive HF, arrhythmias)	(24)
Respiratory (pneumonia, other)	(19)
CNS (change in mental status/neurological abnormalities)	(16)
GE (bleeding, emesis)	(11)
Charlson comorbidity score (0-33)	7.2±2.6
APACHE II score (0-71)	8.3±4.9
Mini Mental-Status Examination (MMSE score) (0-30)	22.2±7.6
Geriatric Depression Score (GDS) (0-15)	5.2±3.6
Advanced procedures: endoscopy, CT or MRI, etc.	3.2±3.0

(Rozzini et al. J Gerontol 2003;58A:190-191)

n. 23

**Examples of problems for a good  
in hospital geriatric practice**

- Complexity of care
- Complexity of disease mechanism interpretation
- Complexity of therapeutic decision making

n. 24

In a recent paper by Brown et al (*JAGS* 52:1263,2004) **60% of the observed patients in a hospital had no documented medical reasons for the bed rest.**

n. 25

**Dehydration and Delirium.  
Non a simple relationship.**

(George and Rockwood, J Gerontol 59A:811, 2004)

n. 26

**A persistent gap between ideal and actual use of ACE inhibitors for heart failure in the elderly (only 68% of the hospitalized patients receive a correct treatment).**

(Masoud et al, Circulation 110:724, 2004)

n. 27

**The multiple functions of a geriatric ward  
in acute hospitals**

- Sub intensive care units (SICU)
- Delirium rooms
- Stroke units
- Specific care of demented patients

n. 28

**Sub-Intensive Care Unit for the elderly  
(SICU)**

**Characteristics of patients 60+ years and with APACHE II score  $\geq 5$  and/or APS  $\geq 3$  admitted in the Sub-Intensive Care Unit for the elderly in comparison with patients admitted in the ACE-unit during 2002**

Ranhoff et al. (submitted)

Characteristics	SICU	ACE unit	P
	n=401	n=1380	
	M ( $\pm$ SD)	M ( $\pm$ SD)	
Age	78.1 ( $\pm$ 8.8)	78.8 ( $\pm$ 9.3)	NS
Gender (female), n (%)	196 (49)	911 (66.0)	P<.001
Living alone, n (%)	102 (25.4)	52 (37.7)	P<.001
Vision impairment, n (%)	116 (29.0)	293 (21.2)	P<.001
History of heavy alcohol use, n (%)	20 (5.0)	83 (6.0)	NS
No of IADLs lost two weeks prior	3.4 ( $\pm$ 3.0)	3.3 ( $\pm$ 2.7)	NS
Barthel Index (0-100) two weeks prior	72.8 ( $\pm$ 33.0)	84.9( $\pm$ 24.6)	P<.001
Barthel Index (0-100) at admission	28.8 ( $\pm$ 35.2)	75.0 ( $\pm$ 28.2)	P<.001
Barthel Index (0-100) at discharge	49.3 ( $\pm$ 39.4)	78.8 ( $\pm$ 26.2)	P<.001
MMSE score (0-30) at discharge	19.1 ( $\pm$ 11.0)	22.6 ( $\pm$ 7.2)	P<.001
Charlson Index (0-33)	6.5 ( $\pm$ 2.0)	6.9 ( $\pm$ 2.5)	NS
APACHE II score (0-71)	14.5 ( $\pm$ 6.0)	6.7 ( $\pm$ 2.8)	P<.001
APS (0-33)	9.0 ( $\pm$ 5.7)	2.1 ( $\pm$ 2.6)	P<.001
S-Albumin (g/dl)	3.3 ( $\pm$ 0.6)	4.0 ( $\pm$ 0.6)	P<.001
S-Cholesterol (mg/dl)	174.2 ( $\pm$ 49.7)	205.2 ( $\pm$ 51.4)	P<.001
Maximum number of drugs (n)	7.6 ( $\pm$ 3.2)	4.2 ( $\pm$ 3.2)	P<.001
Indwelling bladder catheter, n (%)	228 (56.9)	170 (12.3)	P<.001
Non-invasive mechanical ventilation, n (%)	87 (21.7)	---	
Length of stay in SICU (hours)	61.8 ( $\pm$ 62.4)	---	
Length of stay in hospital (days)	6.0 ( $\pm$ 4.9)	6.1 ( $\pm$ 3.2)	NS
Main diagnosis, n (%)			
Respiratory failure	172 (42.9)	255 (18.5)	P<.001
Cardiac diseases	111 (27.7)	264 (19.1)	P<.001
Stroke	44 (11.0)	171 (12.4)	NS
Gastrointestinal bleeding	27 (6.7)	197 (14.3)	P<.001
Cancer related problems	23 (5.7)	127 (9.2)	P<.001
Acute renal failure	16 (4.0)	36 (2.6)	P<.001
Others	8 (1.9)	527 (38.2)	P<.001
Delirium, n (%)	128 (31.2)	95 (6.9)	P<.001
Mortality in SICU, n (%)	31 (7.7)	---	
Mortality (in hospital), n (%)	50 (12.5)	50 (3.6)	P<.001

n. 30

## Delirium Units

n. 31

### A model for managing delirious older in-patients

Flaherty JH, Tariq SH, Raghavan S, et al.,  
(*J Am Geriatr Soc.* 2003, 51:1031-5)

Although multiple models of care exist to prevent the development of delirium in hospitalized patients, models for the management of patients for whom delirium is unpreventable or who already have delirium on admission to the hospital are needed. This article describes the development, management, and economics of a new model of care for patients with delirium, called the Delirium Room (DR). The DR is a specialized 4-bed unit that provides 24-hour intensive nursing care and is completely free of physical restraints. Another important feature of the 4-bed DR is that it is an integral part of a 22-bed acute care for the elderly (ACE) unit. As such, patients in the DR benefit from features of the ACE unit: a change in the physical environment of the medical floor to promote mobility and function and discourage bedrest, comprehensive geriatric care that identifies and addresses problems that can lead to a decline in function, and use of a daily multidisciplinary team meeting. This article also presents descriptive data on a group of delirious patients managed in the DR with the intention of giving baseline data for other ACE units that are considering opening a DR or for future prospective studies in this area.

n. 32

**Characteristics of 401 patients admitted to a Sub Intensive Care Unit without delirium, with cumulative, incident, and prevalent delirium**

	No delirium N=284 mean ±SD	Com.Delirium N=117 mean ±SD	<i>P*</i>	Inc. Delirium N=55 mean ±SD	Prev.Delirium N=62 mean ±SD	<i>P**</i>
Age	76.9 ±8.5	80.9 ±9.1	0.001	81.1 ±8.9	80.7 ±9.3	0.839
Gender (female), n (%)	147 (51.6)	58 (49.6)	0.398	27 (49.1)	31 (50.0)	0.535
MMSE score at discharge	22.5 ±9.4	10.3 ±9.8	0.001	14.9 ±9.0	5.9 ±8.5	0.001
Barthel Index two weeks prior hospitalization	78.7 ±30.4	58.4 ±34.5	0.001	64.5 ±32.0	53.0 ±36.0	0.070
Barthel Index at admission	36.5 ±36.6	9.9 ±21.8	0.001	15.1 ±25.7	5.2 ±16.6	0.014
Barthel Index at discharge	61.0 ±37.1	21.1 ±29.1	0.001	33.7 ±31.7	10.0 ±21.2	0.001
No of IADLs lost two weeks prior hospitalization	2.8 ±2.8	4.8 ±2.8	0.001	4.9 ±2.7	4.9 ±2.9	0.945
Vision impairment, n (%)	60 (21.2)	57 (47.9)	0.001	23 (41.8)	34 (53.2)	0.147
History of heavy alcohol use, n (%)	9 (3.2)	11 (9.4)	0.033	5 (9.1)	6 (9.7)	0.584
Comorbidity Charlson Index	6.2 ±1.9	7.3 ±1.9	0.001	7.1 ±1.8	7.4 ±2.0	0.471
APACHE II score	13.1 ±4.8	17.9 ±7.1	0.001	16.1 ±6.1	19.5 ±7.7	0.011
APS- Acute Physiology Score	7.7 ±4.5	12.1 ±7.0	0.001	10.4 ±6.0	13.7 ±7.5	0.010
S-Albumin (g/dl)	3.4 ±0.6	3.2 ±0.5	0.013	3.3 ±0.5	3.1 ±0.6	0.161
S-Cholesterol (mg/dl)	177.3 ±48.1	166.7 ±52.6	0.052	165.1 ±49.6	168.0 ±55.5	0.764
Ratio s-urea/s-creatinin	58.1 ±24.3	64.3 ±32.4	0.036	64.9 ±31.6	63.7 ±33.4	0.847
Number of drugs	7.3 ±3.1	8.2 ±3.3	0.008	8.0 ±3.2	8.5 ±3.4	0.447
Indwelling bladder catheter, n (%)	134 (47.2)	94 (80.3)	0.001	44 (80.0)	50 (80.6)	0.557
Non-invasive mech.ventilation, n (%)	56 (19.7)	31 (26.5)	0.088	17 (30.9)	14 (22.6)	0.209
Length of stay	6.1 ±5.1	5.9 ±4.0	0.754	6.7 ±4.3	5.2±3.6	0.039
Mortality, n (%)	14 (4.9)	36 (30.8)	0.001	10 (18.2)	26 (41.9)	0.005

Ranhoff et al. (submitted)  
n. 33

**Do we need delirium units?**

Rozzini R, Sabatini T, Trabucchi M.  
(JAGS, in press 2004)

n. 34

**Stroke**

**The Stroke Unit – development over a decade**

- Results from first acute stroke unit published in 1991 (Indredavik B et al., Stroke 1991)
- Stroke units save life! (Langhorne P et al., Lancet 1993)
- Stroke Unit care improve survival and functional state up to 10 years (Indredavik B et al., Stroke 1999)
- Short stay in a stroke unit with early supported early discharge (Fjærtøft H et al., Stroke 2003)
- ACE unit for stroke (Allen KR et al., JAGS 2003)

n. 35

### Stroke Units and Acute Care for Elders model of Care

	G-Ward (n=1380) M±SD(%)	SICU (n=280) M±SD(%)	SICU-stroke (33) M±SD(%)
Age	78.8±9.3	76.5±10.7	79.2±9.0
Gender (female)	(66)	(51)	(61)
MMSE score (0-30)	22.6±7.2	20.4±10.4	9.5±10.9
Delirium	(6.1)	(33.2)	(60.6)
GDS score (0-15)	5.2±3.8	3.4±3.4	3.8±5.3
Barthel Index (two weeks before adm)	84.9±24.6	76.9±30.5	50.1±43.1
Barthel Index (on admission)	75.0±28.2	28.4±36.1	7.9±21.5
Barthel Index (on discharge)	78.8±26.2	36.8±39.3	12.4±26.4
No. IADLs lost (two weeks before adm)	3.3±2.7	3.0±2.9	5.1±3.3
Charlson Index (0-33)	6.9±2.5	6.3±2.1	7.4±1.9
Drugs (n)	4.2±3.1	7.1±2.9	7.4±3.5
APACHE II score (0-71)	8.2±5.1	13.5±6.3	16.7±6.1
Serum albumin (g/dl)	3.9±0.6	3.4±0.6	3.2±0.5
Serum Cholesterol (mg/dl)	202.8±54.2	175.1±52.3	182.1±40.5
LOS	5.7±1.8	5.5±3.8	7.1±5.1
In hospital Mortality	(2.0)	(10.4)	(21.2)

Rozzini, Sabatini, Ranhoff & Trabucchi, JAGS 2004

n. 36

Do we really need stroke units when only 1-2% of patients are treated with thrombolysis?

n. 37

Dementia and hospital care

n. 38

### Association between heart failure and 6 month mortality in hospitalized elderly patients according to increasing frailty (Cox regression analysis)

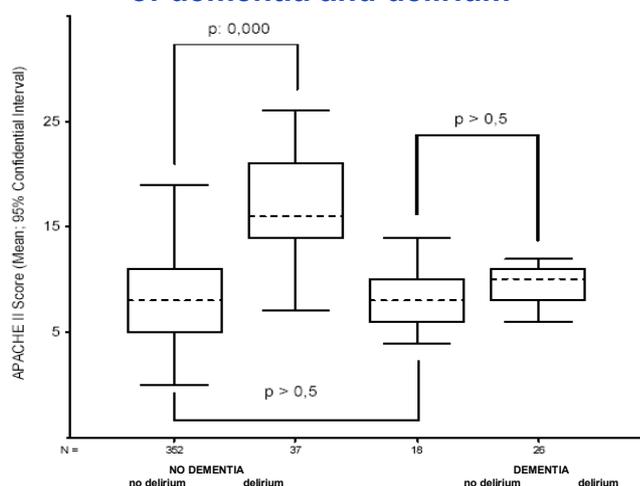
	n/events	Crude RR (95% C.I.)	Adjusted* RR (95% C.I.)
<b>(a) Not disabled&amp;not demented</b>			
No Heart Failure	430/13	1.0 (ref.)	1.0 (ref.)
Heart Failure (NYHA III-IV)	60/9	4.1 (1.2-13.3)	4.1 (1.3-15.1)
<b>(b) Disabled or demented</b>			
No Heart Failure	266/26	1.0 (ref.)	1.0 (ref.)
Heart Failure (NYHA III-IV)	36/10	3.1 (1.3-7.4)	2.7 (1.1-6.7)
<b>(c) Disabled&amp;demented</b>			
No Heart Failure	137/35	1.0 (ref.)	1.0 (ref.)
Heart Failure (NYHA III-IV)	21/9	1.4 (0.3-5.9)	1.3 (0.3-5.6)
<b>p for trend**</b>		<b>0.014</b>	<b>0.005</b>

\*Confounders: albumin <3.5 g/dL, cholesterol <160mg/dL, hemoglobin <12 g/dl, APS>3 and Charlson Index (8+).  
\*\* Test for the linear decrease of the RR between heart failure and mortality through groups of increasing frailty.

Rozzini et al. Arch Int Med, 2003

n. 39

### APACHE II score according to the diagnosis of dementia and delirium



n. 40

ACE unit model fully answers to different functions.

n. 41

**The “appropriateness” in hospital for patient  
“who have many thing wrong”**

- The clinical definition of frailty beside the “geriatric giants” (falls and delirium)
- The identification for each disease (pneumonia, COPD, heart failure, etc) of the conditions needing an integrated approach
- Appropriateness, procedures and outcomes in the elderly

n. 42

**Geriatric and the dignity of old persons**

- Combine interventions with the respect of autonomy
- Persons affected by dementia, freedom and dignity: do geriatricians better than other physicians have the capacity to assess and treat them?

n. 43

**Including geriatrics in the mainstream  
of medical culture and practice**

- Did we build all the necessary cultural steps in order to persuade on the importance of geriatrics in the care of elderly people who are not just frail, but who care frail and acutely ill
- The limits of basic principles (frailty, assessment, complexity, comorbidity, etc) only shared by geriatricians
- The problem of administrators
- A “political” approach

n. 44

As geriatricians, we feel that our methods are distinctive (i.e. synchronize procedures with the epidemiological reality, taking into account the complexity of chronic care even in acute diseases) and improve outcomes in older patients. However, we should increase the number of large scale studies in the “real world”, to confirm in non-selected groups data obtained in highly selective randomized clinical trials.

n. 45

**Chronic Disease  
The need for a new clinical education.**

*(JAMA 292:1057, 2004)*

n. 46

Although aware that we have more questions than answers, the demographic and epidemiological pressure does not allow uncertainties.  
It is time to “adopt a creative intolerance for the status quo”.

n. 47