

# IL REGISTRO REPOSI: IPAZIENTI CON BPCO



ALESSANDRO NOBILI

9  
NOVEMBRE  
10

## OTTICA RESPIRO

IL PAZIENTE AL CENTRO

VERONA 2018  
HOTEL LEON D'ORO

9 Novembre 2018

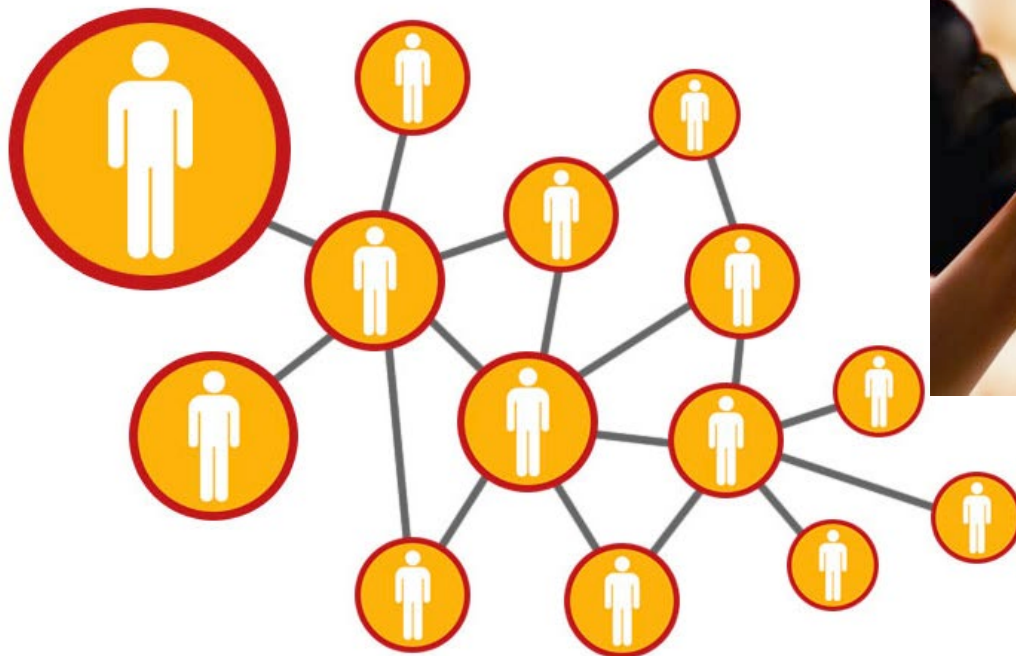
# Dichiarazione Conflitto di Interessi

***Il sottoscritto Alessandro NOBILI***

*ai sensi dell'art. 3.3 sul Conflitto di Interessi, pag. 17 del Reg.  
Applicativo dell'Accordo Stato-Regione del 5 Novembre 2009,*

DICHIARA

*che negli ultimi due anni NON ha avuto rapporti diretti di  
finanziamento con soggetti portatori di interessi commerciali in  
campo sanitario.*



**REPOSI**  
Read more about  
THE NETWORK

- **NETWORK OF INTERNAL AND GERIATRIC MEDICINE**
- **DATA COLLECTION**
- **ANALYSES and PUBLICATION**
- **EDUCATION**



**2008-2018**  
**THE 10<sup>th</sup> ANNIVERSARY**  
**OF REPOSI REGISTRY**

# IL REGISTRO REPOS

Anno 2008

Studio collaborativo, osservazionale, no-profit, tra Società Italiana di Medicina Interna (SIMI), Fondazione IRCCS Cà Granda Ospedale Maggiore Policlinico di Milano e Istituto di Ricerche Farmacologiche Mario Negri IRCCS di Milano che si propone di **attivare una rete/osservatorio di reparti di medicina interna per il reclutamento, il monitoraggio e lo studio dei pazienti anziani ospedalizzati.**



# LO SCENARIO STAVA CAMBIANDO

- Un **numero sempre maggiore di anziani** venivano ricoverati nei reparti di medicina.
- Evidenza-necessità di:
  - Attivare una **rete di reparti** per **quantificare la frequenza e monitorare gli outcome** dei soggetti con patologie croniche multiple (**multimorbilità**) e **politerapia**.
  - **Costituire un gruppo di lavoro multidisciplinare** per lo studio dei problemi correlati all'approccio e alla gestione degli anziani con polipatologia (multimorbilità) e politerapia degenti nei reparti di medicina interna e geriatria.
  - **Migliorare l'appropriatezza prescrittiva.**
  - **Promuovere lo sviluppo di ipotesi di ricerca** dall'interno della medicina interna a partire dai dati raccolti dalla rete di reparti coinvolti.



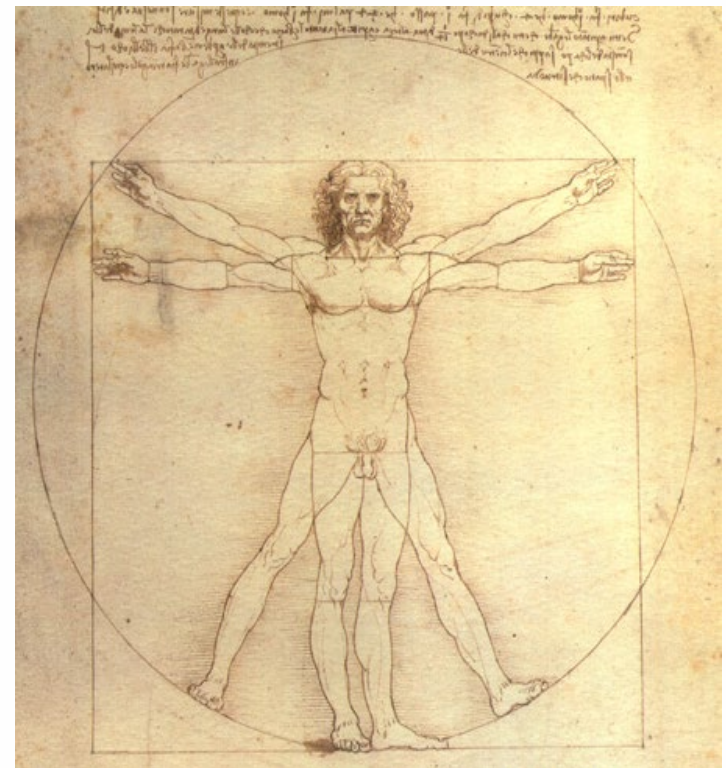
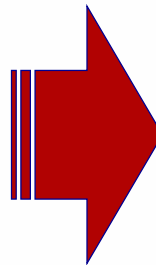
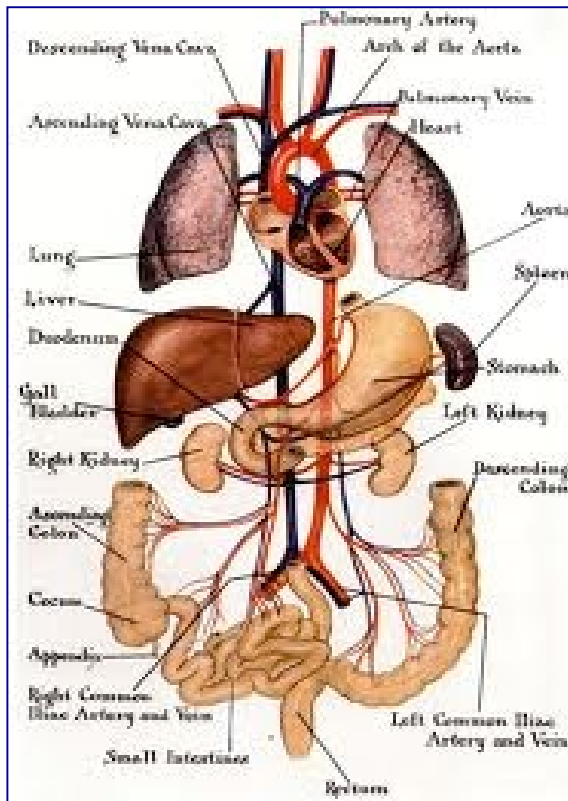
**REPOSI**  
REGISTER OF  
MULTIMORBIDITY  
AND POLIFARMACY

REPOSI is a collaborative study promoted by the Italian Society of Internal Medicine (SIMI), IRCCS Ca' Granda Foundation Hospital and the Institute of Pharmacological Research Mario Negri of Milan, Italy.

# RITORNO AD UNA MEDICINA ORIENTATA AL PAZIENTE

*Medical subspecialties (cardiology, pneumology, endocrinology, gastroenterology et alia), which were much fostered in the last part of the second millennium owing to the dramatic development of specialized technologies and procedures, are not suited to handle multiple concomitant diseases.*

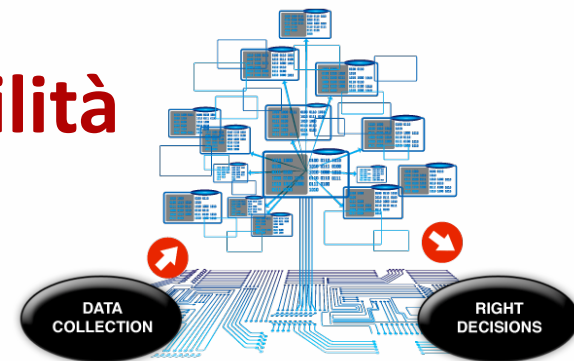
*The hospital internist, with an holistic approach to disease management, should in principle find it easier to tackle this challenge.*



# QUALI REQUISITI: partecipazione e fattibilità

I requisiti per far parte della rete sono:

- l'interesse al progetto,
- la condivisione di un “**minimum data-set**” (MDS)
- la disponibilità di un medico del reparto (“monitor locale”)
- la **condivisione e diffusione** dei dati prodotti tra tutti i partecipanti



La **partecipazione** dei diversi centri/reparti è **su base volontaria** senza nessun supporto/contributo economico.

**MDS** = dare a tutti la possibilità di contribuire a far crescere il Registro con i **dati provenienti dalla propria pratica (routine) clinica**

# SCHEMA DELLO STUDIO

All' inizio osservatorio per:

- Fase pre-ospedaliera
- Fase intra-ospedaliera

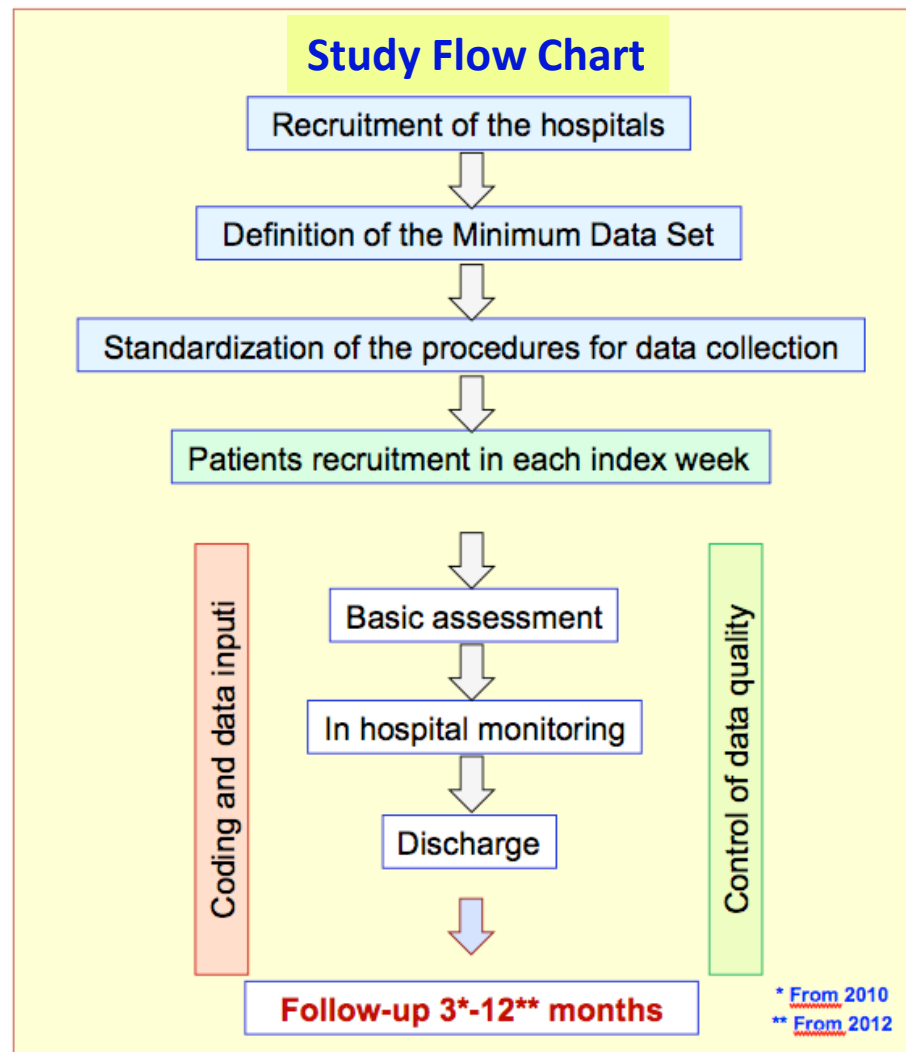
**COORTI DI PAZIENTI SEGUITE IN MEDIA PER 12 GIORNI**

**Domanda: cosa succede dopo la dimissione dal reparto?**

Emerge la necessità di un follow-up

- 2010: follow-up a 3 mesi
- 2012: follow-up a 12 mesi

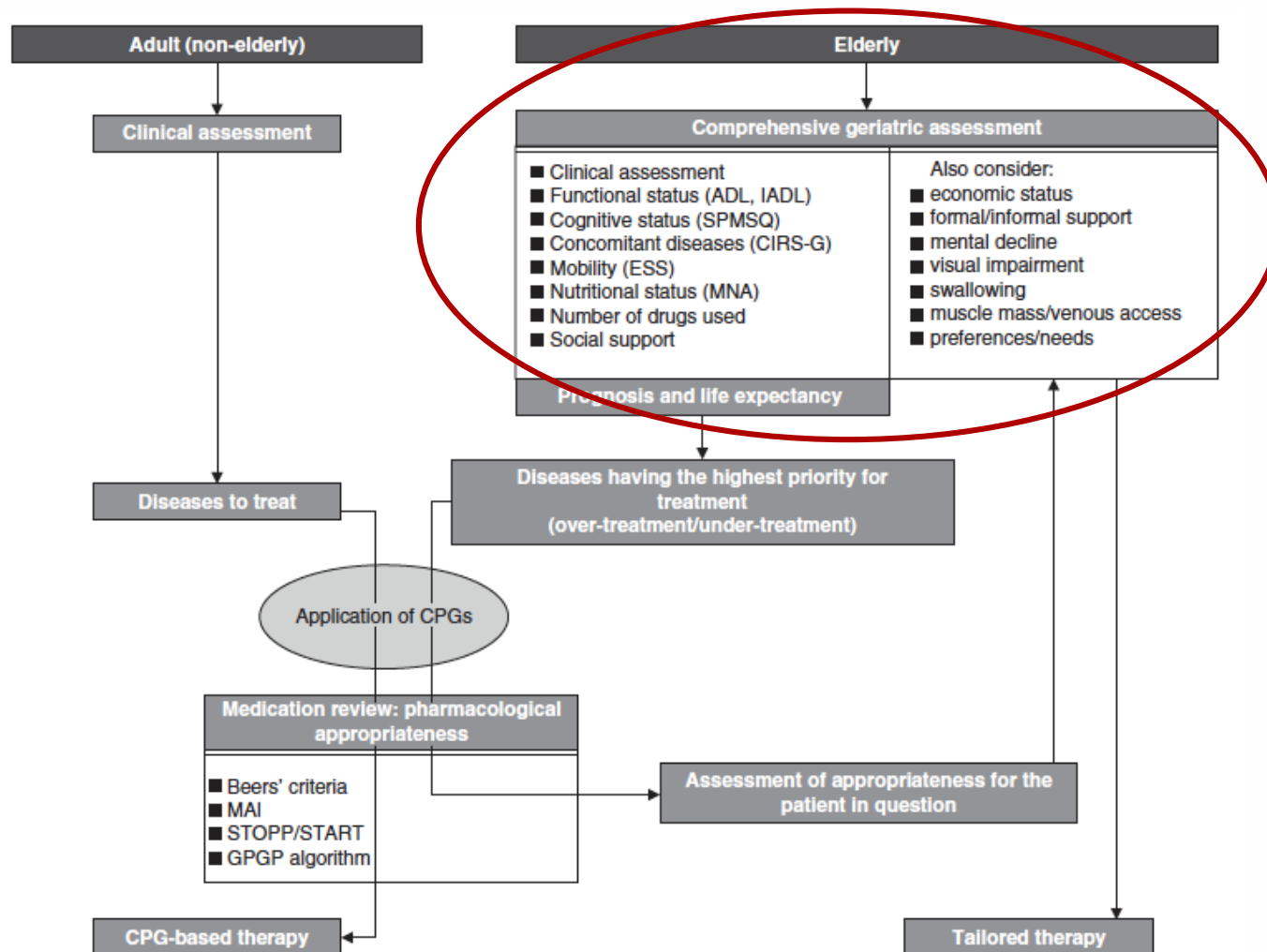
**POSSIBILITA' DI MONITORARE:** ri-ospedalizzazioni, cambiamenti indotti dalla medicina del territorio, esiti del ricovero a distanza di 3-12 mesi



Giuseppe Sergi, Marina De Rui, Silvia Sarti and Enzo Manzato

Department of Medical and Surgical Sciences, Geriatrics Division, University of Padova, Padova, Italy

Drugs Aging 2011;28:509-18



**Fig. 1.** Flowchart showing the role of comprehensive geriatric assessment in the prescription of appropriate pharmacological treatment in the elderly and how this approach differs from that required for the non-elderly adult. **ADL**=activities of daily living; **CIRS-G**=Cumulative Illness Rating Scale – Geriatric; **CPG**=clinical practice guideline; **ESS**=Exton-Smith Scale; **GPGP**=Good Palliative Geriatric Practice; **IADL**=instrumental ADL; **MAI**=Medication Appropriateness Index; **MNA**=Mini Nutritional Assessment; **SPMSQ**=Short Portable Mental Status Questionnaire; **START**=Screening Tool to Alert doctors to Right Treatment; **STOPP**=Screening Tool of Older Persons' Prescriptions.

# IL PROBLEMA DELLA COMPLESSITA'

**Domanda: la sola valutazione clinico-anamnestica è sufficiente a cogliere e descrivere i diversi aspetti della complessità?**

Emerge la necessità di una valutazione di altri domini:

- Funzioni cognitive
- Disabilità
- Tono dell'umore
- Dolore
- Delirium (2014)
- PROFUND INDEX (2014)

**POSSIBILITA' DI PROIETTARE QUESTI INDICATORI SUGLI END-POINTS**



# REPOSI

# REGISTER OF MULTIMORBIDITY AND POLYPHARMACY

**REPOSI** is a collaborative study promoted by the Italian Society of Internal Medicine (SIMI), IRCCS Ca' Granda Foundation Hospital and the Institute of Pharmacological Research Mario Negri of Milan, Italy.

## ARTICLES AND PUBLICATION

**Original articles published: 38**

**Letters published: 5**

***Narrative review published: 4***

**Article in press:** **1**

**Article in preparation: 5**

**Mean IF = 3**

## From 2008

**7,041 patients** aged 65 years or older by  
**107 Italian internal medicine**  
**and geriatric wards** and  
**more than 300 clinical investigators**



**Table 1** Main socio-demographic and clinical characteristics of REPOSI patients during the period 2008—September 2017

| Years of data collection                                               | 2008       | 2010       | 2012       | 2014       | 2015/2016  | 2016/2017  |
|------------------------------------------------------------------------|------------|------------|------------|------------|------------|------------|
| Number ( <i>N</i> ) of patients enrolled                               | 1332       | 1380       | 1323       | 1212       | 800        | 958        |
| Females, <i>N</i> (%)                                                  | 721 (54.1) | 696 (50.4) | 672 (50.8) | 622 (51.3) | 442 (55.3) | 470 (51.0) |
| Age (years), mean (SD)                                                 | 79.3 (7.5) | 79.0 (7.3) | 79.3 (7.4) | 79.1 (7.9) | 80.4 (7.7) | 80.1 (7.7) |
| Age class, <i>N</i> (%)                                                |            |            |            |            |            |            |
| 65–74                                                                  | 409 (30.7) | 430 (31.2) | 403 (30.5) | 365 (30.2) | 192 (24.0) | 254 (26.5) |
| 75–84                                                                  | 607 (45.6) | 650 (47.1) | 583 (44.1) | 529 (43.8) | 350 (43.8) | 405 (42.2) |
| > = 85                                                                 | 316 (23.7) | 300 (21.7) | 337 (25.5) | 315 (26.0) | 258 (32.1) | 299 (31.2) |
| Need of caregivers, <i>N</i> (%)                                       | –          | 772 (56.5) | 689 (52.1) | 595 (49.0) | 386 (48.2) | 496 (51.9) |
| Number of diagnoses at admission, mean (SD)                            | 4.3 (2.3)  | 5.8 (2.8)  | 5.7 (2.8)  | 5.3 (2.9)  | 6.6 (3.2)  | 6.1 (2.8)  |
| Number of patients at admission with 5 or more diagnoses, <i>N</i> (%) | 571 (42.9) | 884 (64.1) | 839 (63.4) | 640 (55.4) | 576 (72.2) | 661 (70.9) |
| Number of drugs at admission, mean (SD)                                | 4.9 (2.8)  | 5.3 (2.8)  | 5.4 (3.1)  | 6.1 (3.1)  | 5.8 (3.1)  | 5.7 (3.1)  |
| Number of patients at admission taking 5 or more drugs <i>N</i> (%)    | 689 (51.7) | 805 (58.3) | 778 (58.8) | 760 (62.7) | 516 (64.5) | 607 (63.4) |
| CIRS-Severity index at admission, mean (SD)                            | –          | 1.6 (0.3)  | 1.7 (0.3)  | 1.7 (0.4)  | 1.7 (0.3)  | 1.7 (0.3)  |
| CIRS-Comorbidity index at admission, mean (SD)                         | –          | 2.9 (1.7)  | 3.1 (1.9)  | 3.1 (2.0)  | 3.2 (2.0)  | 3.0 (1.9)  |

**Polypharmacy = 5 or more drugs/day: 50-60% of patients admitted.**

**Table 1** Main socio-demographic and clinical characteristics of REPOSI patients during the period 2008—September 2017

| Years of data collection                                               | 2008        | 2010        | 2012        | 2014        | 2015/2016   | 2016/2017   |
|------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Barthel index at hospital stay, mean (SD)                              | –           | 76.8 (30.7) | 72.6 (32.4) | 70.8 (33.5) | 67.5 (33.6) | 70.9 (31.8) |
| Groups according to Barthel Index at hospital stay, <i>N</i> (%)       |             |             |             |             |             |             |
| Complete dependence (0–24)                                             | –           | 155 (11.4)  | 169 (13.4)  | 176 (14.5)  | 130 (16.2)  | 121 (12.9)  |
| Severe dependence (25–49)                                              | –           | 111 (8.2)   | 126 (10.0)  | 104 (8.6)   | 64 (8.0)    | 93 (9.9)    |
| Short Blessed test, mean (SD)                                          | –           | 9.9 (8.2)   | 9.2 (7.8)   | 8.4 (7.9)   | 8.6 (8.1)   | 8.6 (7.6)   |
| Short Blessed test, Severe (10–28), <i>N</i> (%)                       | –           | 637 (47.6)  | 541 (44.5)  | 406 (40.4)  | 276 (41.07) | 311 (39.4)  |
| Geriatric Depression Scale, mean (SD)                                  | –           | 1.4 (1.2)   | 1.4 (1.2)   | 1.3 (1.2)   | 1.3 (1.3)   | 1.3 (1.3)   |
| Dead, <i>N</i> (%)                                                     | 66 (5.0)    | 50 (3.6)    | 42 (3.0)    | 68 (5.6)    | 36 (4.5)    | 32 (3.5)    |
| Number of patients discharged, <i>N</i> (%)                            | 1155 (86.7) | 1159 (84.0) | 1159 (87.6) | 1053 (86.9) | 681(85.2)   | 778 (81.2)  |
| Number of patients discharged, <i>N</i> (%)                            | 1155 (86.7) | 1159 (84.0) | 1159 (87.6) | 1053 (86.9) | 681(85.2)   | 778 (81.2)  |
| Number of diagnosis at discharge, mean (SD)                            | 5.9 (2.5)   | 6.5 (3.0)   | 6.3 (2.8)   | 5.9 (3.1)   | 7.0 (3.3)   | 7.1 (3.0)   |
| Number of patients at discharge with 5 or more diagnosis, <i>N</i> (%) | 796 (68.9)  | 857 (73.94) | 834 (72.0)  | 637 (60.5)  | 525 (76.8)  | 626 (81.1)  |
| Number of drugs at discharge mean (SD)                                 | 6.0 (2.9)   | 6.3 (2.8)   | 6.4 (3.1)   | 7.8 (5.5)   | 6.2 (3.3)   | 6.5 (3.3)   |
| Number of patients at discharge taking 5 or more drugs <i>N</i> (%)    | 770 (66.7)  | 838 (72.3)  | 838 (72.3)  | 885 (84.0)  | 494 (71.0)  | 573 (73.3)  |
| CIRS-Severity index at discharge, mean (SD)                            | –           | 1.7 (0.3)   | 1.7 (0.3)   | 1.7 (0.4)   | 1.7 (0.4)   | 1.7 (0.3)   |
| CIRS-Cormorbidity index at discharge, mean (SD)                        | –           | 3.0 (1.8)   | 3.2 (2.0)   | 3.2 (2.1)   | 3.2 (2.1)   | 3.2 (2.0)   |
| Hospital stay days, mean (SD)                                          | 11.1 (8.5)  | 10.9 (8.2)  | 11.4 (8.5)  | 12.3 (10.5) | 12.8 (17.2) | 13.4 (17.3) |

Polypharmacy = 5 or more drugs/day

Hospital stay = 11-13 days

Internal and Emergency Medicine  
<https://doi.org/10.1007/s11739-018-1941-8>

# Multimorbidity and polypharmacy in the elderly: lessons from REPOSI

Pier Mannuccio Mannucci • Alessandro Nobili •  
REPOSI Investigators

The findings of 10-yearly REPOSI runs suggest the following pertinent tasks for the internist in order to optimally handle their elderly patients:

- the management of multiple medications,
- the need to become acquainted with geriatric multidimensional tools,
- the promotion and implementation of a multidisciplinary team approach involving primary care and patients and their relatives and caregivers,
- the need for more research, tailored to the peculiar features of the multimorbid elderly patient.

# REGISTRO REPOSI

## Patients with Chronic obstructive pulmonary disease (COPD)\*

\*Marco Proietti on behalf of REPOSI Investigator

### RATIONALE

**Chronic obstructive pulmonary disease (COPD)** is one of the **most relevant health conditions** in terms of prevalence, incidence and mortality.

**In 2010 global COPD prevalence** was estimated at **11.7%** , involving 384 million people.

**Prevalence increases with aging**, so that it is projected to further increase due to the progressive aging of the global population.

**In older people COPD is burdened with relevant comorbidity**, being often associated with multiple ailments and with an increased risk of death, **around three million deaths being reported globally every year.**

# REGISTRO REPOSI

## Patients with Chronic obstructive pulmonary disease (COPD)

### AIMS

- to report **COPD prevalence** in the frame of a register of elderly multimorbid patients acutely hospitalized in internal medicine and geriatric wards in Italy;
- to analyze the **use of drugs specific for COPD** (inhaled bronchodilators and corticosteroids) and evaluate their **appropriateness**;
- to investigate the **association of COPD with major clinical outcomes** throughout the post-hospital follow-up observation period;
- to assess the **association between therapeutic appropriateness and major clinical outcomes**.

# REGISTRO REPOSI

## Patients with Chronic obstructive pulmonary disease (COPD)

### METHODS

We enlisted all the **6,046 patients enrolled from 2008 to 2016.**

To evaluate the overall prevalence of COPD, we considered all the **patients identified by the ICD-9 codes 491.xx and 492.xx at the time of hospital admission.**

ATC code for the **use of inhaled bronchodilators and corticosteroids (ICS):**

- Long-acting beta2-agonists (LABA): R03ACxx;
- Long-acting muscarinic antagonists (LAMA): R03BBxx;
- ICS: R03BAxx;
- LABA + ICS: R03AK06-R03AK12;
- LABA+LAMA: R03AL03-R03AL06.

# REGISTRO REPOSI

## Patients with Chronic obstructive pulmonary disease (COPD)

### METHODS

**Polypharmacy** was defined by the **contemporary chronic use of 5 or more drugs**.

With reference to the **GOLD guidelines**, therapeutic appropriateness was evaluated both at hospital admission and discharge as follows:

- for patients with a diagnosis of COPD, but no history of acute exacerbation in the 6 months prior to the current admission due to acute exacerbation, appropriateness was defined as the use of at least one LABA or one LAMA;
- for patients with a diagnosis of COPD and a history of acute exacerbation in the previous 6 months or admission due to acute exacerbation, appropriateness was defined as the use of at least one LABA or one LAMA plus one ICS.

# REGISTRO REPOSI

## Patients with Chronic obstructive pulmonary disease (COPD)

### METHODS

**Follow-up data were collected at 3 and/or 12 months after hospital discharge through telephone interview or, for patients no longer alive, from the next of kin.**

In the first year of REPOSI (2008) the follow-up observation was not planned, but a 12-month follow-up was planned since 2012 onwards.

**Hence, the total number of patients who had at least one follow-up observation was 4714 (80%).**

**Death causes were classified:**

- any death;
- cardiovascular (CV) death;
- respiratory death.

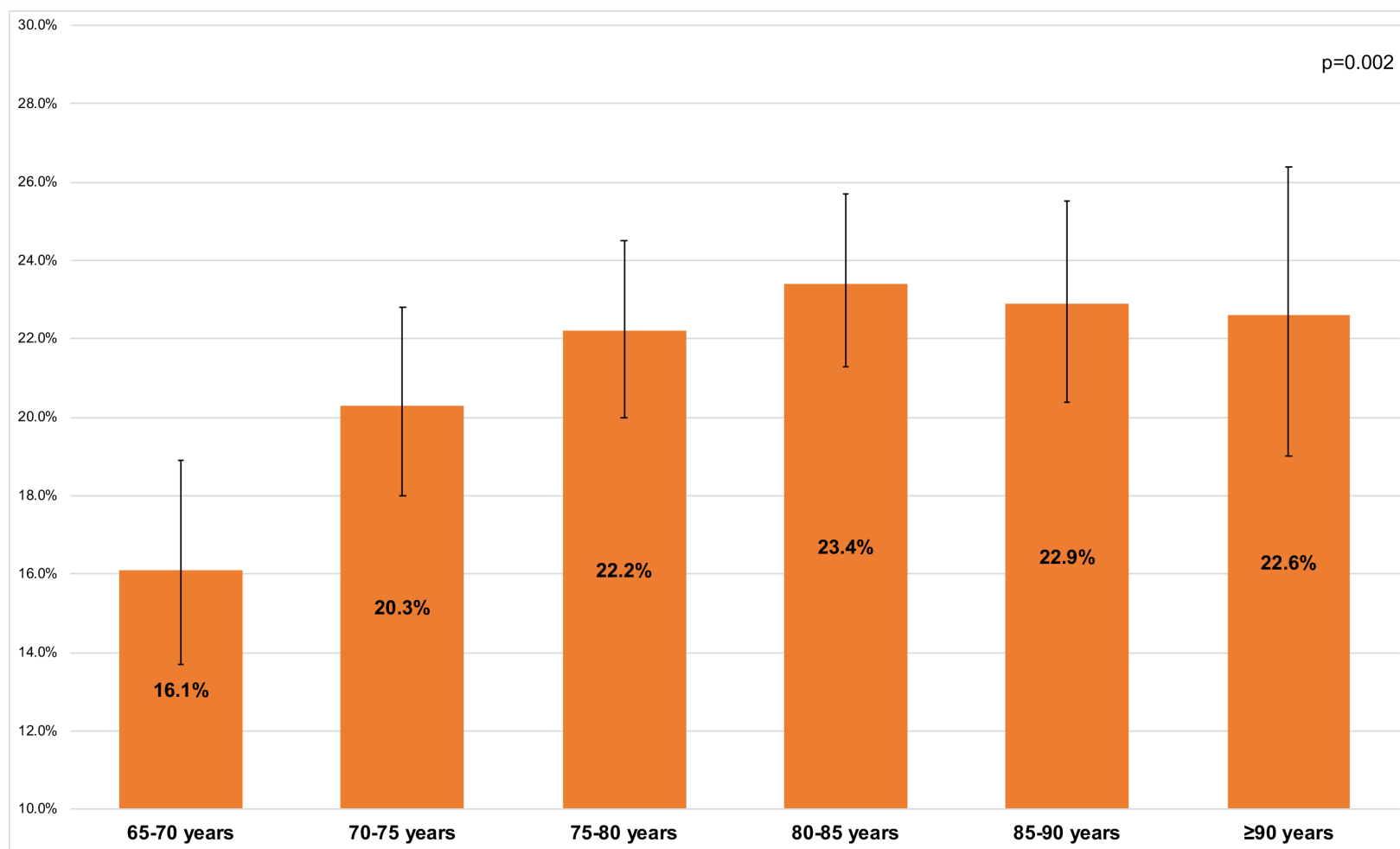
## BASELINE CHARACTERISTICS ACCORDING TO A DIAGNOSIS OF COPD AT ADMISSION

|                                                | Non-COPD<br>N= 4744 | COPD<br>N= 1302         | p      |
|------------------------------------------------|---------------------|-------------------------|--------|
| <b>Age, years</b> median [IQR]                 | 79 [72-84]          | <b>80 [75-85]</b>       | <0.001 |
| <b>Age classes, n (%)</b>                      |                     |                         | <0.001 |
| 65-70 years                                    | 693 (14.6)          | <b>135 (10.4)</b>       |        |
| 70-80 years                                    | 1883 (39.7)         | <b>509 (39.1)</b>       |        |
| ≥80 years                                      | 2168 (45.7)         | <b>658 (50.5)</b>       |        |
| <b>Male sex, n (%)</b>                         | 2129 (44.9)         | 794 (61.0)              | <0.001 |
| <b>BMI, kg/m<sup>2</sup></b> median [IQR] 4202 | 25.3 [22.8-28.4]    | 25.7 [22.6-28.9]        | 0.066  |
| <b>GDS, median [IQR]</b> 3931*                 | 1 [0-2]             | 1 [0-2]                 | 0.003  |
| <b>SBT, median [IQR]</b> 4233*                 | 6 [2-13]            | 8 [2-14]                | 0.001  |
| <b>Education, years</b> median [IQR] 5523      | 5 [5-9]             | 5 [5-8]                 | 0.011  |
| <b>Low income job, n (%)</b> 5605              | 3380 (77.0)         | 976 (80.3)              | 0.016  |
| <b>Barthel index, median [IQR]</b> 4611*       | 95 [77-100]         | <b>88 [60-100]</b>      | <0.001 |
| <b>CIRS IC, median [IQR]</b> 4646*             | 3 [2-4]             | 4 [2-5]                 | <0.001 |
| <b>CIRS IS, median [IQR]</b> 4646*             | 1.61 [1.38-1.85]    | <b>1.77 [1.54-2.00]</b> | <0.001 |
| <b>Smoking habit, n (%)</b> 4588               | 1401 (39.3)         | <b>685 (67.0)</b>       | <0.001 |
| <b>Alcohol habit, n (%)</b> 4561               | 1408 (39.7)         | 513 (50.6)              | <0.001 |
| <b>Polypharmacy, n (%)</b> 5985                | 2605 (55.6)         | <b>950 (73.3)</b>       | <0.001 |
| <b>Hypertension, n (%)</b>                     | 3412 (71.9)         | 974 (74.8)              | 0.039  |
| <b>Hypercholesterolemia, n (%)</b>             | 343 (7.2)           | 82 (6.3)                | 0.244  |
| <b>Heart failure, n (%)</b>                    | 628 (13.2)          | 308 (23.7)              | <0.001 |
| <b>CAD, n (%)</b>                              | 931 (19.6)          | 377 (29.0)              | <0.001 |
| <b>PAD, n (%)</b>                              | 143 (3.0)           | 72 (5.5)                | <0.001 |
| <b>Stroke/TIA, n (%)</b>                       | 456 (9.6)           | 149 (11.4)              | 0.051  |
| <b>Atrial fibrillation, n (%)</b>              | 968 (20.4)          | 347 (26.7)              | <0.001 |
| <b>Diabetes mellitus, n (%)</b>                | 1283 (27.0)         | 382 (29.3)              | 0.101  |
| <b>CKD, n (%)</b>                              | 893 (18.8)          | 329 (25.3)              | <0.001 |
| <b>Cancer, n (%)</b>                           | 680 (14.3)          | 153 (11.8)              | 0.017  |

## COPD PREVALENCE

From 2008 to 2016 a  
total of 6046 patients  
were enlisted in REPOSI.  
Of them **1302 (21.5%)**  
had a diagnosis of  
**COPD** at admission.

## COPD PREVALENCE ACCORDING TO AGE



\*Marco Proietti on behalf of REPOSI Investigator

## PHARMACOLOGICAL TREATMENT

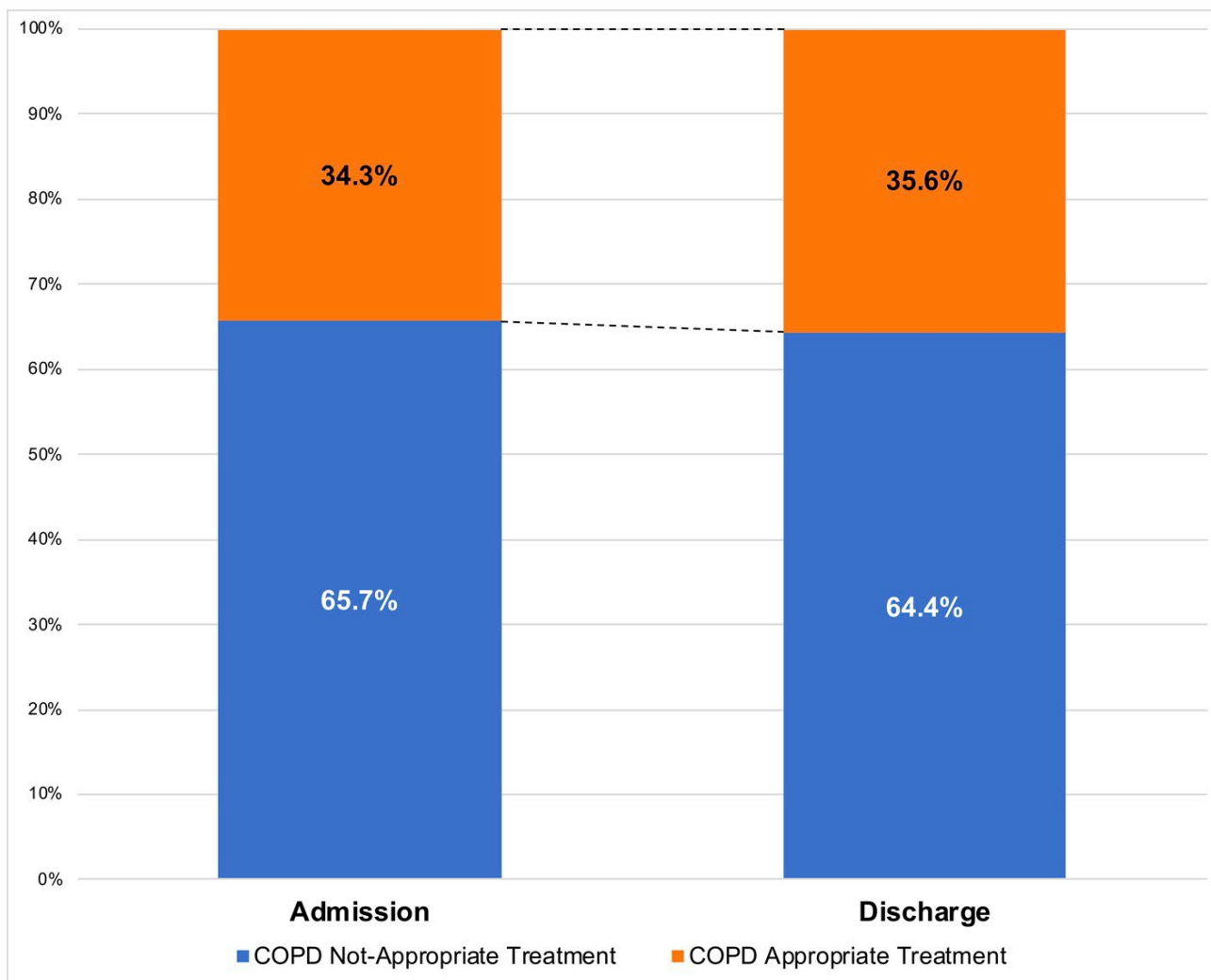
### DISTRIBUTION OF COPD PHARMACOLOGICAL TREATMENTS AT HOSPITAL ADMISSION AND DISCHARGE

|                                 | Admission  | Discharge  |
|---------------------------------|------------|------------|
| <b>Any LABA, n (%)</b>          | 301 (23.1) | 298 (22.9) |
| <b>Any LAMA, n (%)</b>          | 315 (24.2) | 358 (27.5) |
| <b>LABA + ICS, n (%)</b>        | 280 (21.5) | 270 (20.7) |
| <b>LABA + LAMA, n (%)</b>       | 154 (11.8) | 174 (13.4) |
| <b>LABA + LAMA + ICS, n (%)</b> | 144 (11.1) | 161 (12.4) |

**Legend:** ICS= Inhaled corticosteroid; LABA= Long acting beta agonist; LAMA= Long acting muscarinic antagonist

# PHARMACOLOGICAL TREATMENT

## DISTRIBUTION OF APPROPRIATE COPD TREATMENT AT ADMISSION AND DISCHARGE



# PHARMACOLOGICAL TREATMENT

## MULTIVARIABLE LOGISTIC REGRESSION ANALYSIS TO COPD APPROPRIATE TREATMENT AT ADMISSION AND A DISCHARGE

|                               | Admission |           |        |
|-------------------------------|-----------|-----------|--------|
|                               | OR        | 95% CI    | p      |
| Polypharmacy                  | 3.28      | 2.24-4.81 | <0.001 |
| History of acute exacerbation | 2.65      | 1.44-4.88 | 0.002  |
|                               | Discharge |           |        |
|                               | OR        | 95% CI    | p      |
| Smoking habit                 | 1.45      | 1.08-1.94 | 0.012  |
| Polypharmacy                  | 6.76      | 4.15-11.0 | <0.001 |

**Legend:** CI= Confidence interval; COPD= Chronic obstructive pulmonary disease; OR= Odds ratio.

## PHARMACOLOGICAL TREATMENT

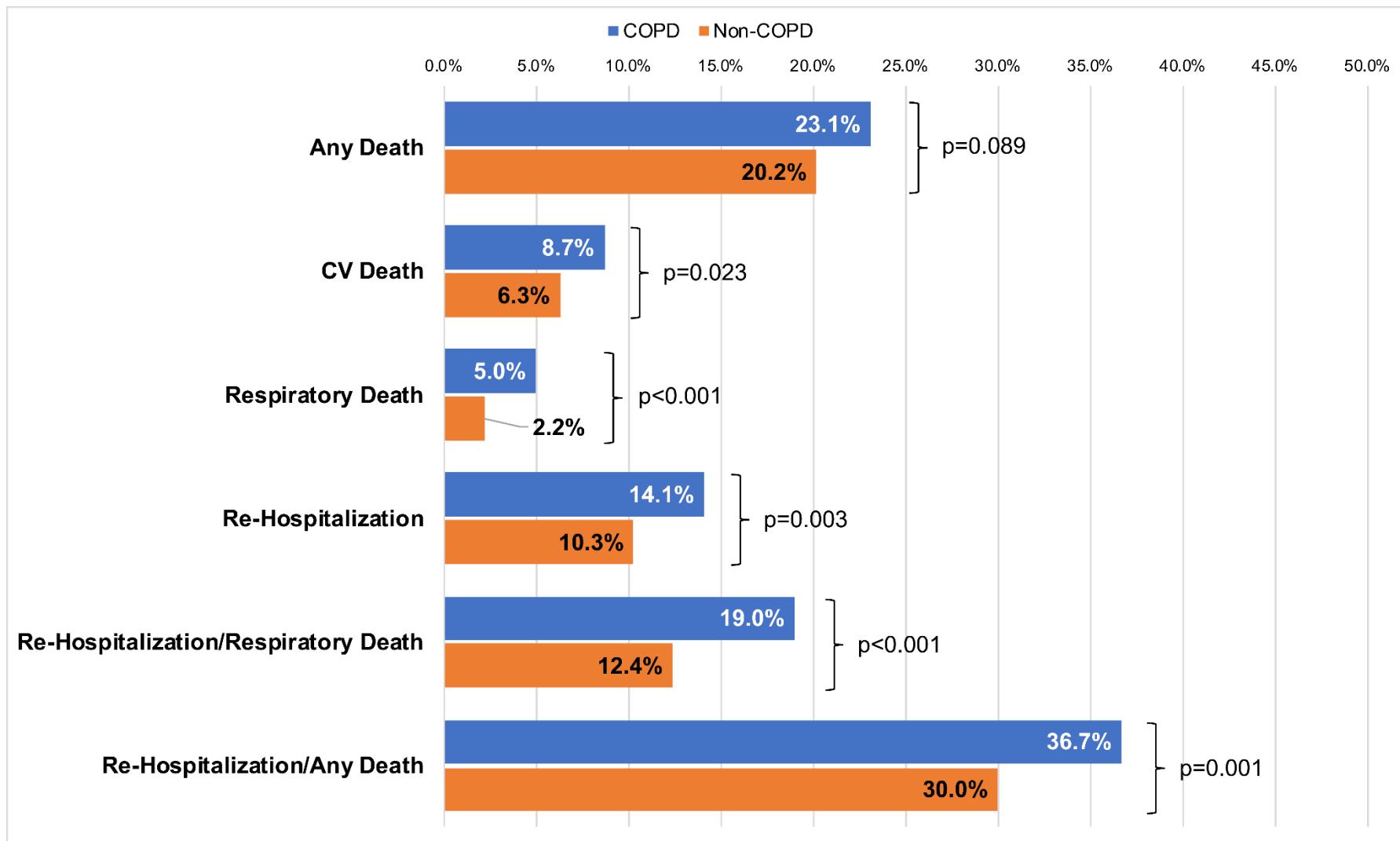
### DISTRIBUTION OF OTHER MEDICATIONS AT ADMISSION ACCORDING TO THE DIAGNOSIS OR NOT OF COPD

|                                           | Non-COPD    | COPD              | p      |
|-------------------------------------------|-------------|-------------------|--------|
|                                           | N= 4744     | N= 1302           |        |
| <b>PPI, n (%)</b>                         | 2127 (44.8) | <b>708 (54.4)</b> | <0.001 |
| <b>Antiplatelet drugs, n (%)</b>          | 1873 (39.5) | <b>610 (46.9)</b> | <0.001 |
| <b>Calcium-channel blockers, n (%)</b>    | 973 (20.5)  | <b>278 (21.4)</b> | 0.507  |
| <b>Diuretics, n (%)</b>                   | 1856 (39.1) | <b>738 (56.7)</b> | <0.001 |
| <b>Digoxin, n (%)</b>                     | 264 (5.6)   | <b>135 (10.4)</b> | <0.001 |
| <b>ACE Inhibitors, n (%)</b>              | 1417 (29.9) | <b>392 (30.1)</b> | 0.868  |
| <b>ARBs, n (%)</b>                        | 1044 (22.0) | <b>264 (20.3)</b> | 0.179  |
| <b>Statins, n (%)</b>                     | 1097 (23.1) | <b>304 (23.3)</b> | 0.865  |
| <b>Non-Selective beta-blockers, n (%)</b> | 475 (10.0)  | <b>93 (7.1)</b>   | 0.002  |
| <b>Selective beta-blockers, n (%)</b>     | 1079 (22.7) | <b>244 (18.7)</b> | 0.002  |
| <b>Any OAC, n (%)</b>                     | 604 (12.7)  | <b>198 (15.2)</b> | 0.020  |

**Legend:** ACE= Angiotensin Converting Enzyme; ARB= Angiotensin receptor blockers; COPD= Chronic obstructive pulmonary disease; OAC= Oral anticoagulant; PPI= Proton-pump inhibitors.

# MAJOR CLINICAL OUTCOMES

## DISTRIBUTION OF OUTCOMES ACCORDING TO THE DIAGNOSIS OF COPD AT ADMISSION



## MAJOR CLINICAL OUTCOMES

### LOGISTIC REGRESSION ANALYSIS FOR THE ASSOCIATION OF DIAGNOSIS OF COPD AT ADMISSION ON MAJOR CLINICAL OUTCOMES

|                                     | Univariate |           |        | Multivariate* |                  |       |
|-------------------------------------|------------|-----------|--------|---------------|------------------|-------|
|                                     | OR         | 95% CI    | p      | OR            | 95% CI           | p     |
| Any death                           | 1.19       | 0.97-1.44 | 0.089  | <b>1.33</b>   | <b>0.98-1.81</b> | 0.071 |
| CV death                            | 1.42       | 1.05-1.91 | 0.023  | 1.66          | 1.04-2.67        | 0.034 |
| Respiratory death                   | 2.39       | 1.57-3.66 | <0.001 | <b>2.14</b>   | <b>1.00-4.59</b> | 0.051 |
| Rehospitalization                   | 1.44       | 1.13-1.83 | 0.004  | <b>1.50</b>   | <b>1.08-2.09</b> | 0.016 |
| Rehospitalization/respiratory death | 1.65       | 1.33-2.06 | <0.001 | 1.60          | 1.17-2.18        | 0.003 |
| Re-hospitalization/any death        | 1.35       | 1.14-1.61 | 0.001  | 1.51          | 1.17-1.95        | 0.001 |

**Legend:** \*Adjusted for age, sex, SBT, GDS, Barthel index, low income, smoking habit, alcohol habit, hypertension, hypercholesterolemia, heart failure, coronary artery disease, peripheral artery disease, stroke/TIA, atrial fibrillation, diabetes mellitus, CKD, cancer, use of any LABA at discharge, use of any LAMA at discharge, use of any ICS at discharge; CV= Cardiovascular; OR= odds ratio; CI= confidence interval.

\*Marco Proietti on behalf of REPOSI Investigator

## MAJOR CLINICAL OUTCOMES

### LOGISTIC REGRESSION ANALYSIS FOR THE ASSOCIATION OF APPROPRIATE VS NOT-APPROPRIATE TREATMENT OF COPD AT DISCHARGE ON MAJOR CLINICAL OUTCOMES

|                                      | Univariate |           |        | Multivariate* |                  |              |
|--------------------------------------|------------|-----------|--------|---------------|------------------|--------------|
|                                      | OR         | 95% CI    | p      | OR            | 95% CI           | p            |
| Any death                            | 0.37       | 0.25-0.57 | <0.001 | <b>0.12</b>   | <b>0.02-0.90</b> | <b>0.040</b> |
| CV death                             | 0.25       | 0.11-0.52 | <0.001 | -             | -                | -            |
| Respiratory death                    | 0.90       | 0.44-1.82 | 0.772  | -             | -                | -            |
| Re-hospitalization                   | 1.10       | 0.71-1.69 | 0.662  | -             | -                | -            |
| Re-hospitalization/respiratory death | 1.06       | 0.72-1.56 | 0.768  | -             | -                | -            |
| Re-hospitalization/any death         | 0.53       | 0.38-0.74 | <0.001 | -             | -                | -            |

**Legend:** \*Adjusted for age, sex, SBT, GDS, Barthel index, low income, smoking habit, alcohol habit, hypertension, hypercholesterolemia, heart failure, coronary artery disease, peripheral artery disease, stroke/TIA, atrial fibrillation, diabetes mellitus, CKD, cancer, use of any LABA at discharge, use of any LAMA at discharge, use of any ICS at discharge; CV= Cardiovascular; OR= odds ratio; CI= confidence interval.

**\*Marco Proietti on behalf of REPOSI Investigator**

## CONCLUSIONS

- **COPD is highly prevalent among elderly patients acutely hospitalized in internal medicine and geriatric wards** and characterized by a poor clinical and impaired functional status.
- Older hospitalized patients are often treated with a **low level of therapeutic appropriateness**.
- Clinical factors usually associated (in the general population as well as in COPD patients) with a **worse clinical status** (such as polypharmacy, a history of acute exacerbation and smoking habit), **were directly associated with therapeutic appropriateness**.
- **COPD is associated with an increased risk of major clinical events, while therapeutic appropriateness is associated with a reduced risk of all-cause death.**
- Educational interventions are warranted to increase appropriateness with the goal to improve patients' quality of life and reduce the impact of major clinical events.

# INTERCheck WEB

<http://www.intercheckweb.it>

**INTERCheck WEB**

Drugs Aging. 2013;30(10):821-8

**STRUMENTO PER LA VALUTAZIONE DELL'APPROPRIATEZZA PRESCRITTIVA.**

INTERCheck è stato realizzato con l'obiettivo di migliorare l'appropriatezza prescrittiva nel paziente anziano attraverso un approccio di valutazione delle terapie che tiene in considerazione diversi aspetti della farmacologia geriatrica:

- Interazioni tra farmaci (secondo il database delle interazioni realizzato ed aggiornato dall'IRCCS - Istituto di Ricerche Farmacologiche Mario Negri).
- Farmaci inappropriati secondo differenti criteri delle letterature (Beers 2012, START/STOPP, indicatori AIFA sull'appropriatezza prescrittiva).
- Valutazione del carico anticolinergico (secondo l'Anticholinergic Cognitive Burden scale).
- Dosaggio dei farmaci in soggetti con alterata funzionalità renale.
- GerontoNet ADR Risk Score, per l'identificazione dei pazienti maggior rischio di effetti indesiderati da farmaco.

Sito ottimizzato per Internet Explorer 11, Firefox 23.0 e Google Chrome 29.0, con risoluzione minima 1024x768.

QUETIAPINA: nessuna nota.

| Principio Interagente | Rilevanza clinica (Documentazione) | Possibili effetti                                                                                              | Meccanismo                                             | Comportamento clinico                                                                                                                                                                                     | Ulteriori Problematiche                                                                                                                                                                                                                                                                                                                                                                                     | Stampa                   |
|-----------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Alfuzosina            | D (2)                              | Aumento del rischio di cardiotoxicità (prolungamento dell'intervallo QT, torsione di punta, arresto cardiaco). | Effetto additivo sul prolungamento dell'intervallo QT. | La cosomministrazione dovrebbe essere evitata; in caso contrario può essere opportuno effettuare controlli periodici dell'elettrocardiogramma (soprattutto prima e durante le prime fasi di trattamento). | Considerare la presenza di ulteriori fattori di rischio per il prolungamento dell'intervallo QT cardiaco, quali: età avanzata, elevati dosaggi di farmaco, sesso femminile, scompensi elettrolitici (bassi livelli ematici K, Ca, Mg), presenza di patologie cardiache (ipertrofia cardiaca, insufficienza cardiaca, cardiomiopatie, bradicardia, fibrillazione atriale) e sindrome congenita del QT lungo. | <input type="checkbox"/> |

PAROXETINA: nessuna nota.

| Principio Interagente | Rilevanza clinica (Documentazione) | Possibili effetti                                                                                                                                                                                            | Meccanismo                                                                                                                            | Comportamento clinico       | Ulteriori Problematiche                                                                                                                                                                    | Stampa                   |
|-----------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Destrometorfano       | D (2)                              | Aumento del rischio di sindrome serotoninergica (ipertensione arteriosa, ipertermia, miocloni, deficit cognitivi) e di tossicità da destrometorfano (nausea, vomito, offuscamento del visus, allucinazioni). | Inibizione del metabolismo del destrometorfano (mediato dal citocromo P450 2D6) causata dalla paroxetina (potente inibitore del 2D6). | Evitare cosomministrazione. | Considerando persistente rischio di sindrome serotoninergica attendere almeno 5 sue vite medie di eliminazione dell'agente interferente, prima di iniziare la terapia con destrometorfano. | <input type="checkbox"/> |





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- patologie cardiovascolari e renali
- rigetto dei trapianti d'organo
- malattie pediatriche
- malattie rare
- dipendenza dalle droghe
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***Insanity: doing the same thing over and over again  
and expecting different results.***

Albert Einstein

***Grazie per l'attenzione .***