



Misurazione degli esiti (Value based medicine) ed altri accidenti

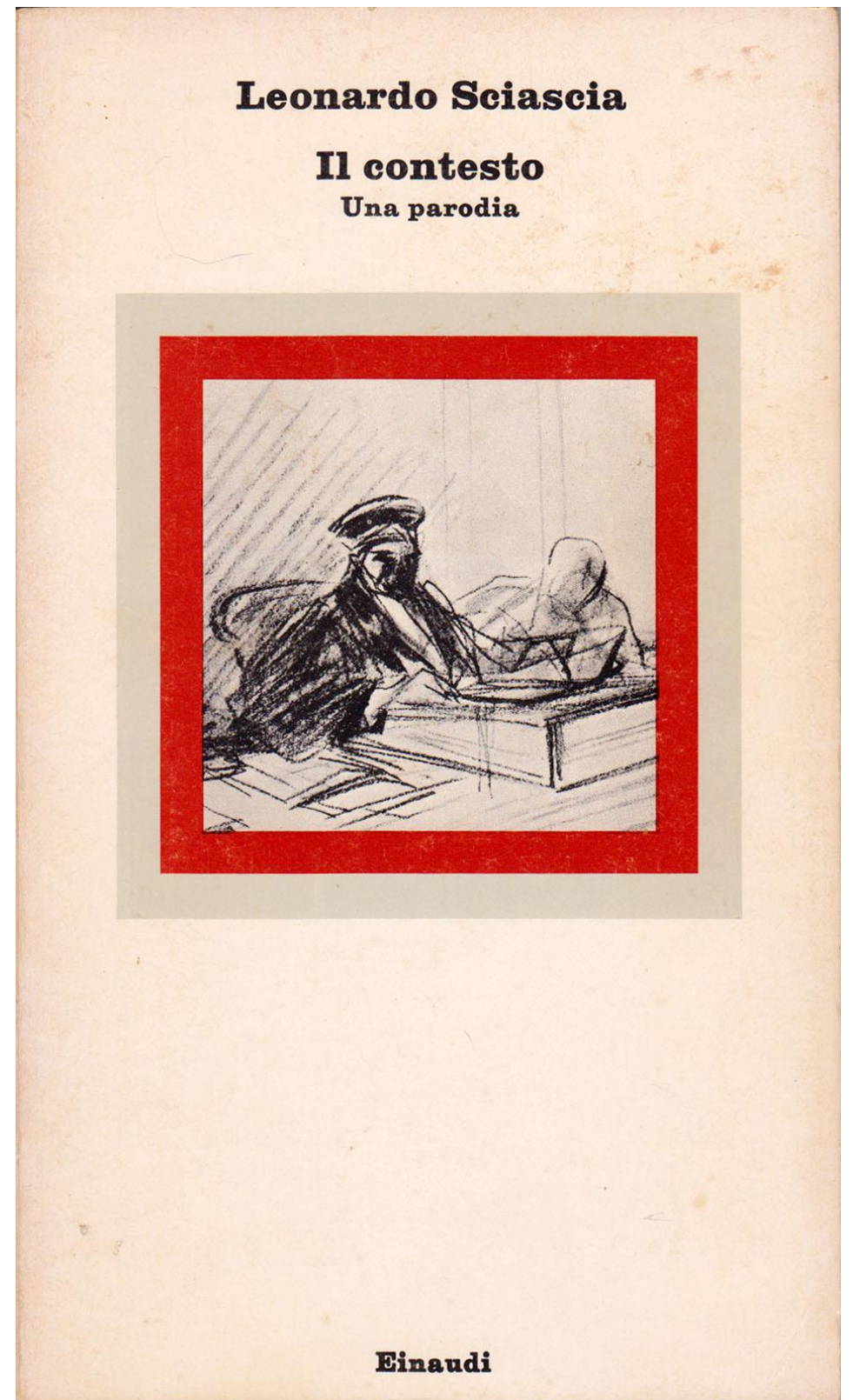
Lorenzo G Mantovani
Università di Milano -Bicocca

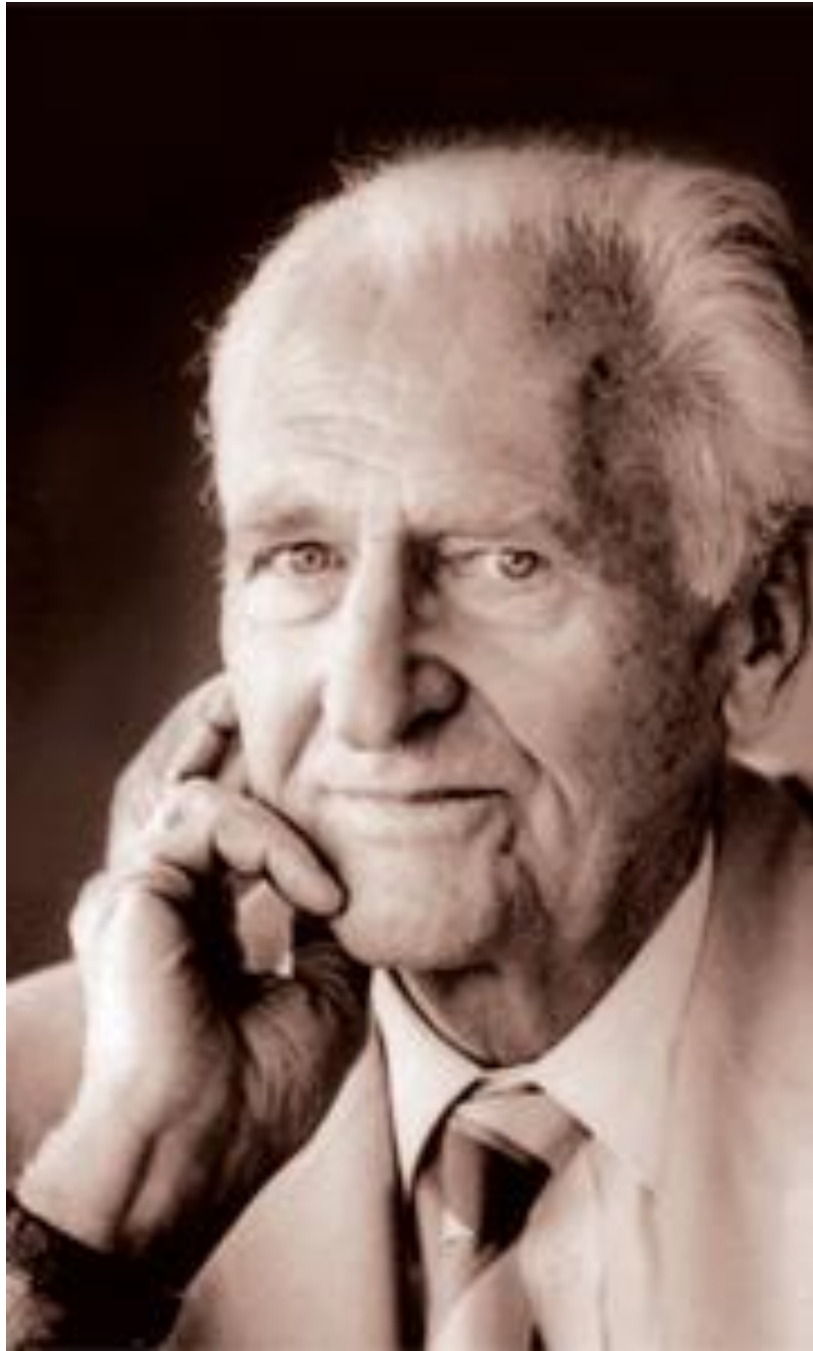
Punti

- Il contesto
- Il valore

Punti

- **Il contesto**
- Il valore



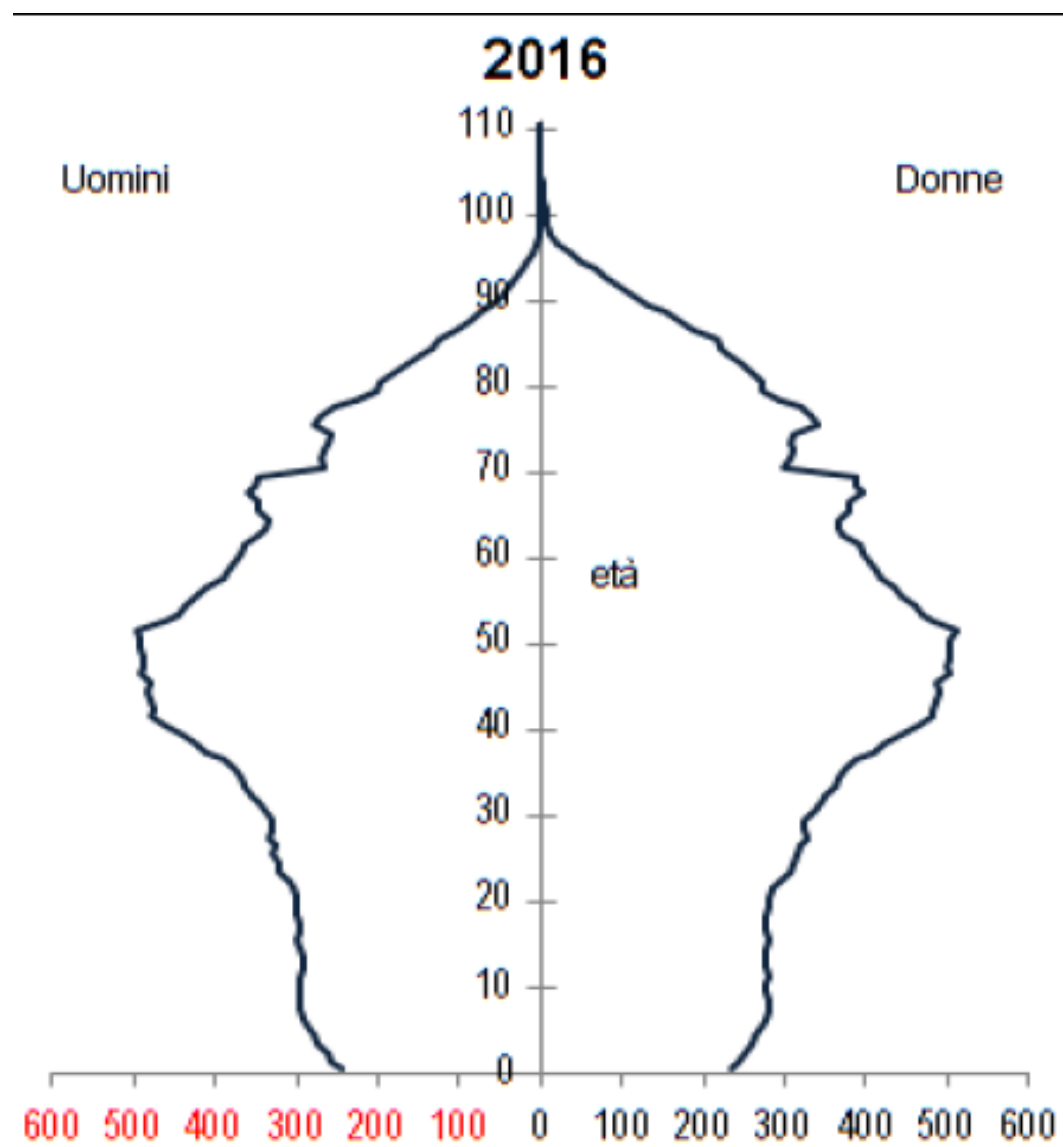


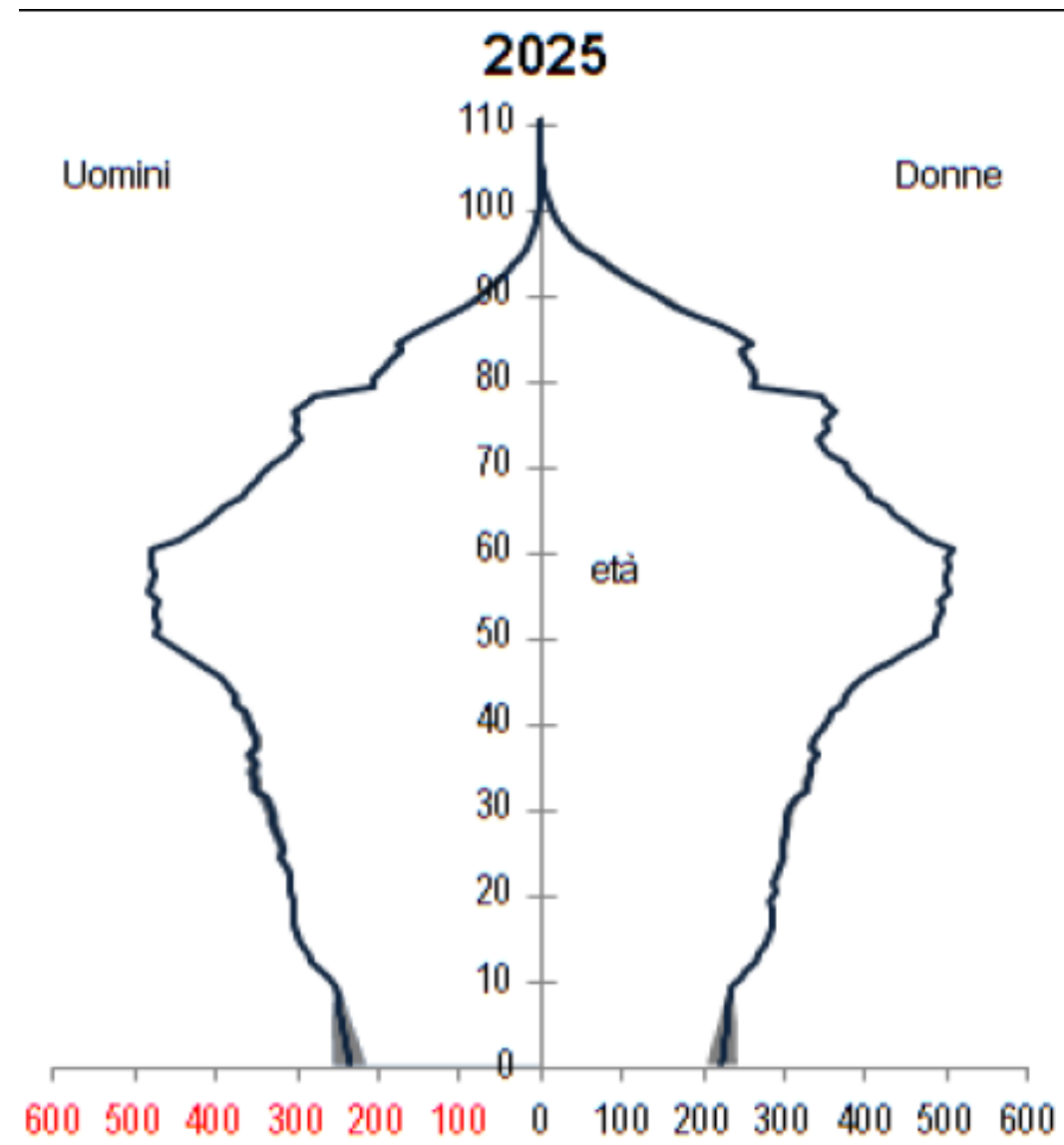
Death in old age is
inevitable, but death
before old age is not

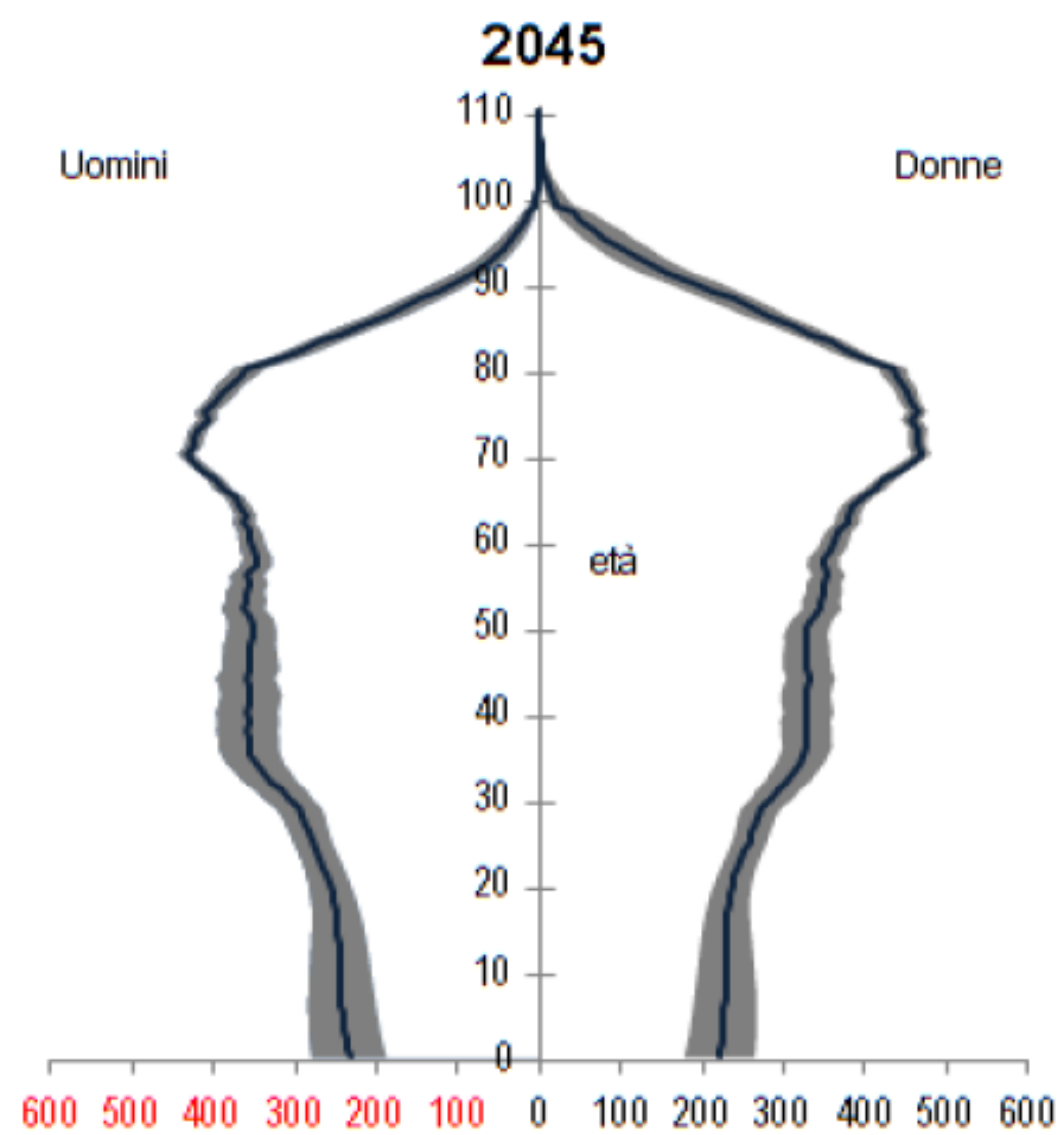
Richard Doll

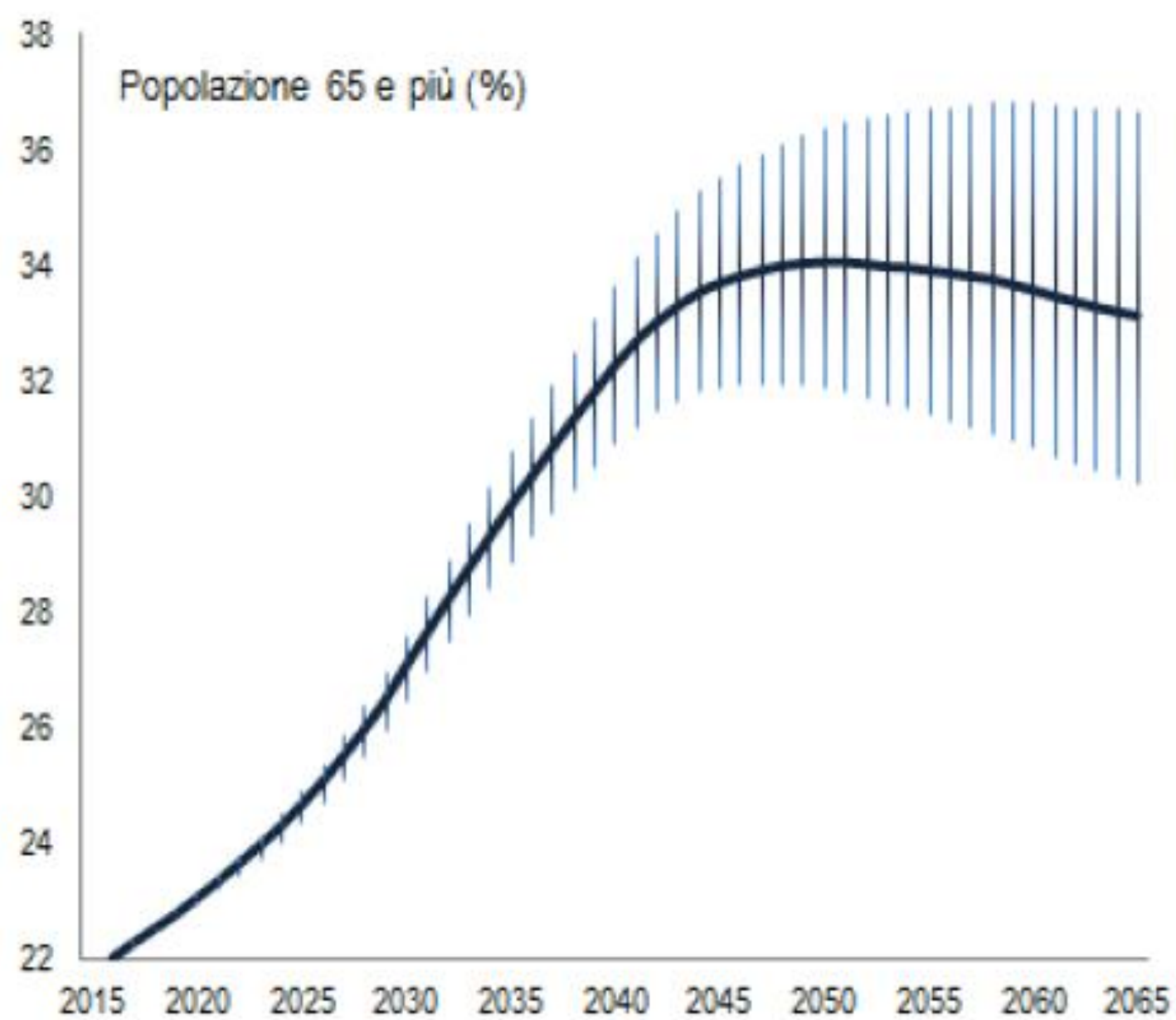
IL FUTURO DEMOGRAFICO DEL PAESE

Previsioni regionali della popolazione residente al 2065







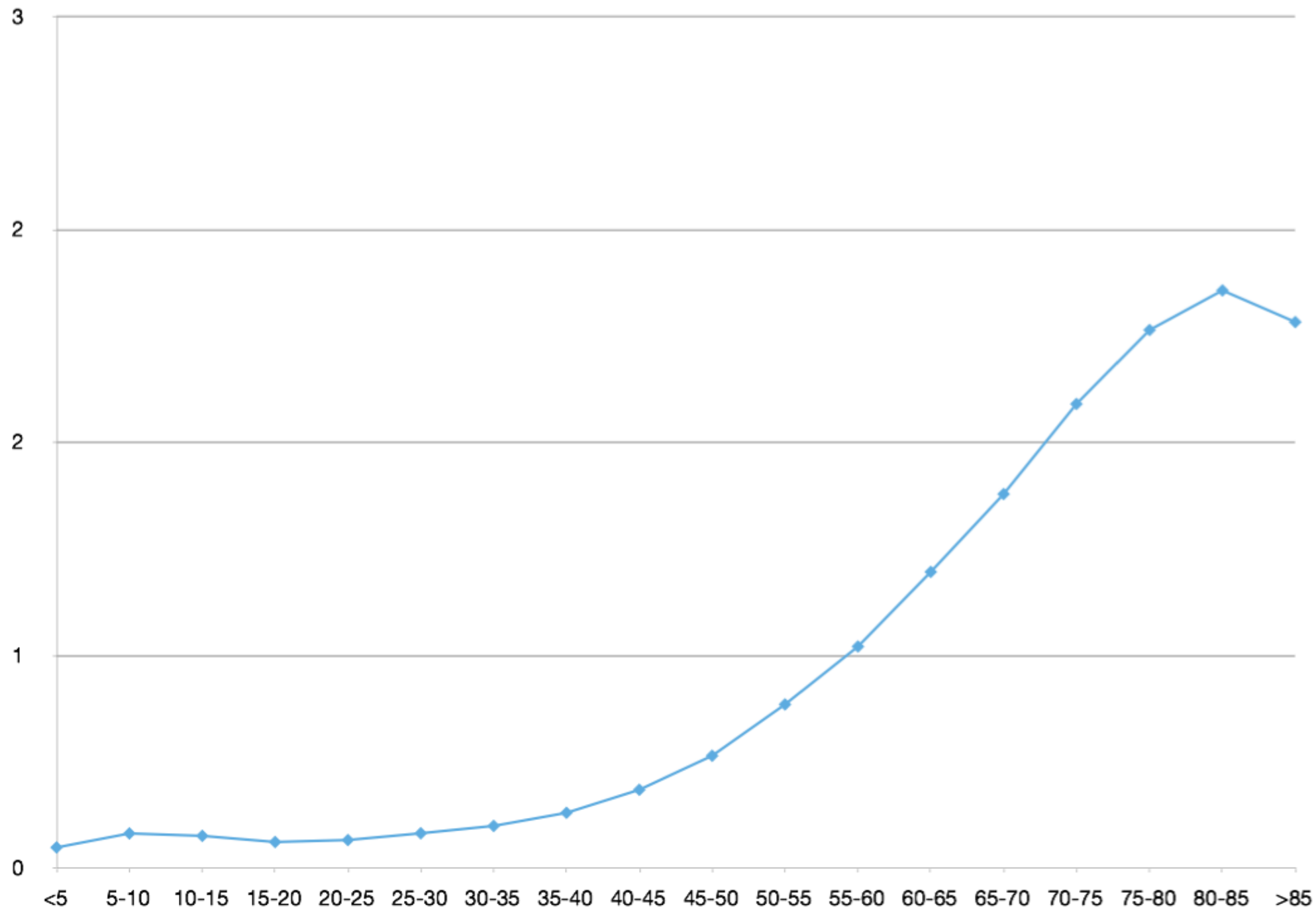




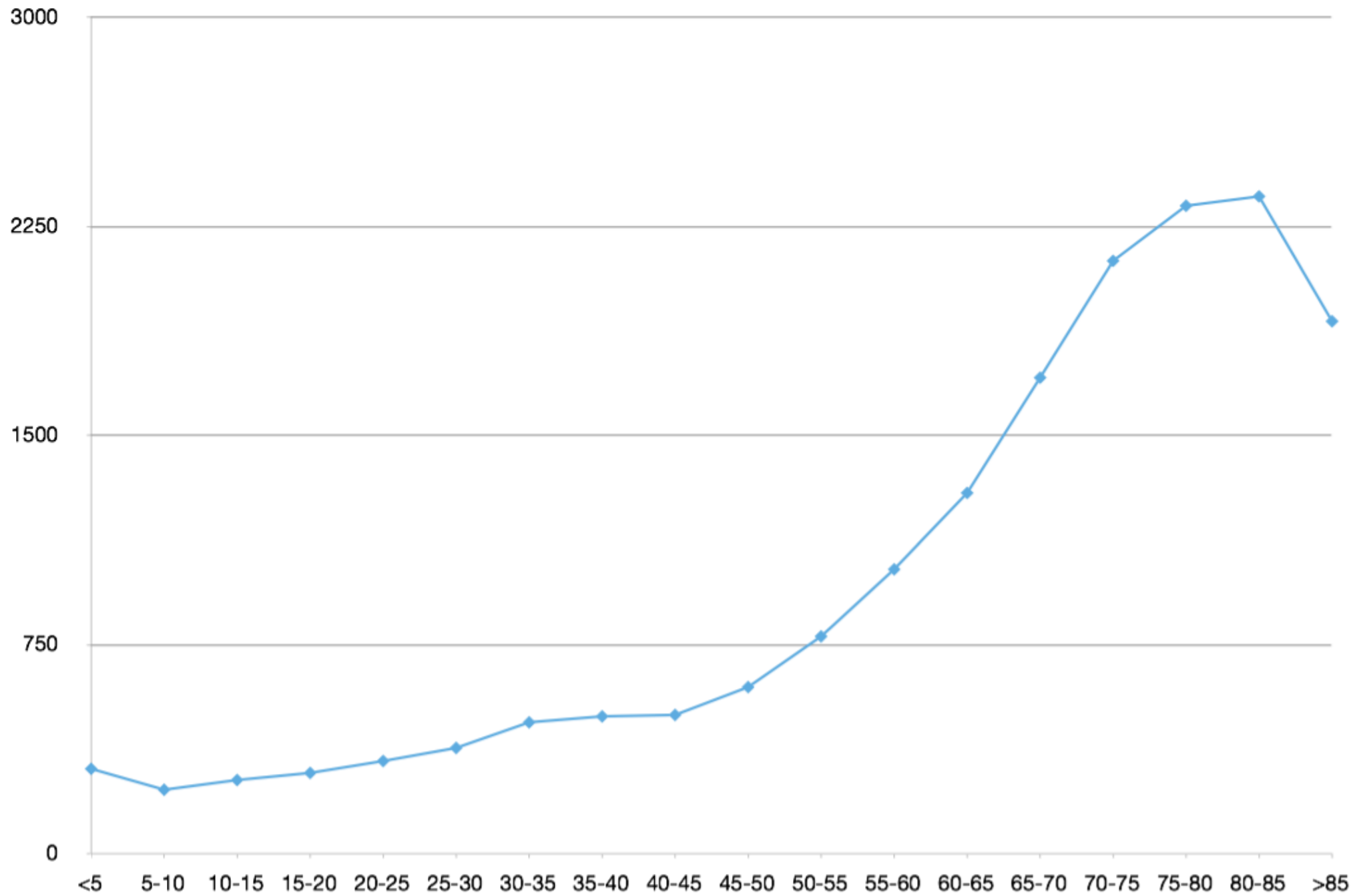
Administrative databases as a tool for identifying healthcare demand and costs in an over-one million population

FABIANA MADOTTO⁽¹⁾, MICHELE A. RIVA⁽¹⁾, CARLA FORNARI^(1, 2), LUCIANA SCALONE⁽¹⁾, ROBERTA CIAMPICHINI⁽³⁾, CHIARA BONAZZI⁽⁴⁾, LORENZO G. MANTOVANI^(1, 3, 5), GIANCARLO CESANA^(1, 2)

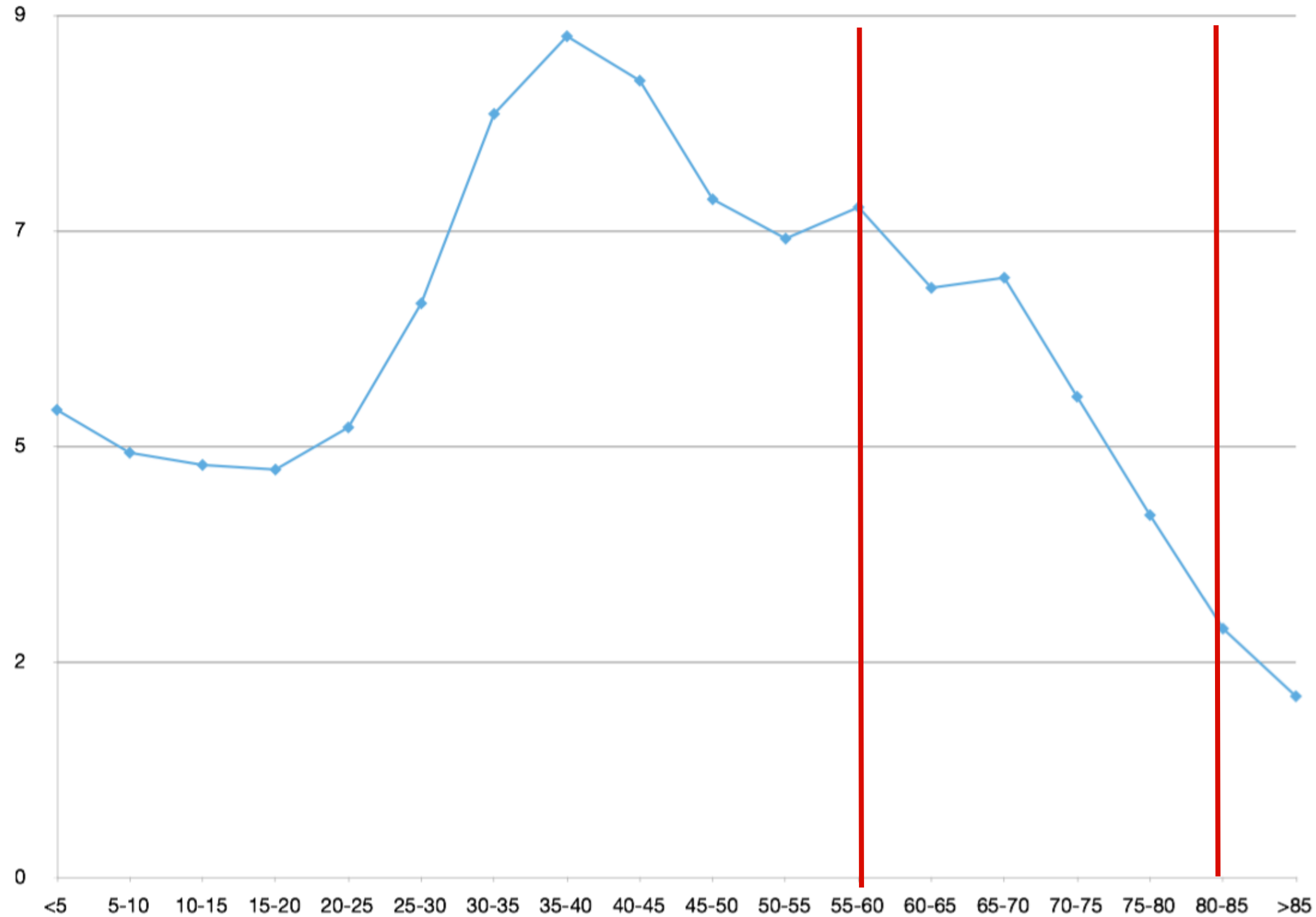
Numero medio di malattie croniche note e curate in funzione dell'età



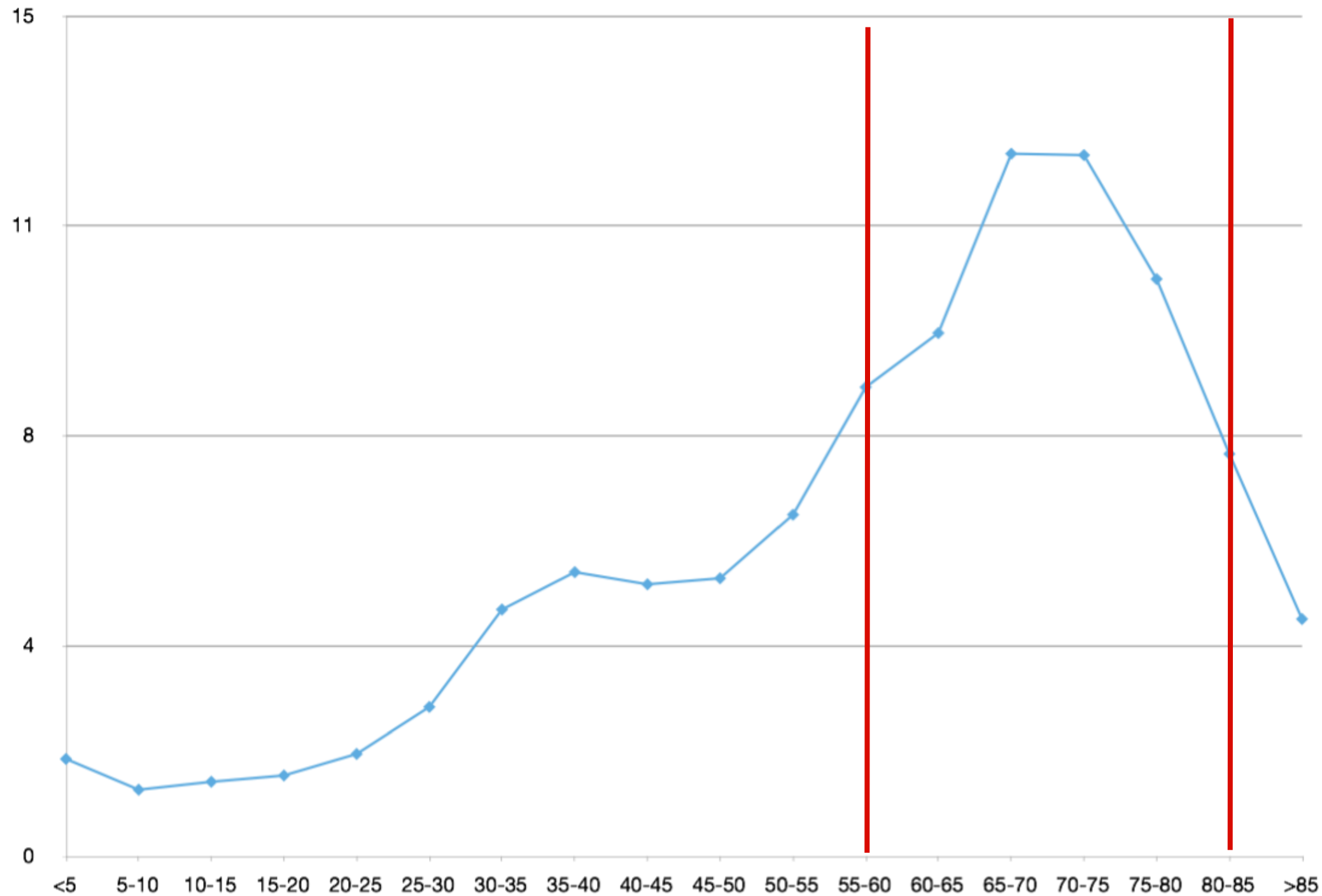
Costi medi annui per paziente in funzione dell'età



Distribuzione per età della popolazione



Distribuzione dei costi totali annui in funzione dell'età



Punti

- Il contesto
- **Il valore**

What Is Value in Health Care?

Michael E. Porter, Ph.D.

In any field, improving performance and accountability depends on having a shared goal that unites the interests and activities of all stakeholders. In health care, however, stakeholders have

Cosa vuol dire VBHC in pratica?

- ...improving performance and accountability

the system. Since value depends on results, not inputs, value in health care is measured by the outcomes achieved, not the volume of services delivered, and value is a central challenge. Nor is value measured by the process of care used; process measurement and improvement are important tactics but are no substitutes for measuring outcomes and costs.

What to measure?



Avedis Donabedian

What to measure?



'Outcomes remain the ultimate validators of the effectiveness and quality of medical care' but they 'must be used with discrimination'



Avedis Donabedian

And outcome measurement should include sufficient measurement of risk factors or initial conditions to allow for risk adjustment.

Principles of Value-Based Health Care Delivery

$$\text{Value} = \frac{\text{Health outcomes that matter to patients}}{\text{Costs of delivering the outcomes}}$$

- Limits on health-care resources mandate that resource-allocation decisions be guided by considerations of cost in relation to expected benefits

In cost-effectiveness analysis, the **ratio of net health-care costs to net health benefits** provides an index by which priorities may be set

Weinstein MC, Stason WB. Foundations of Cost-Effectiveness Analysis for Health and Medical Practices.

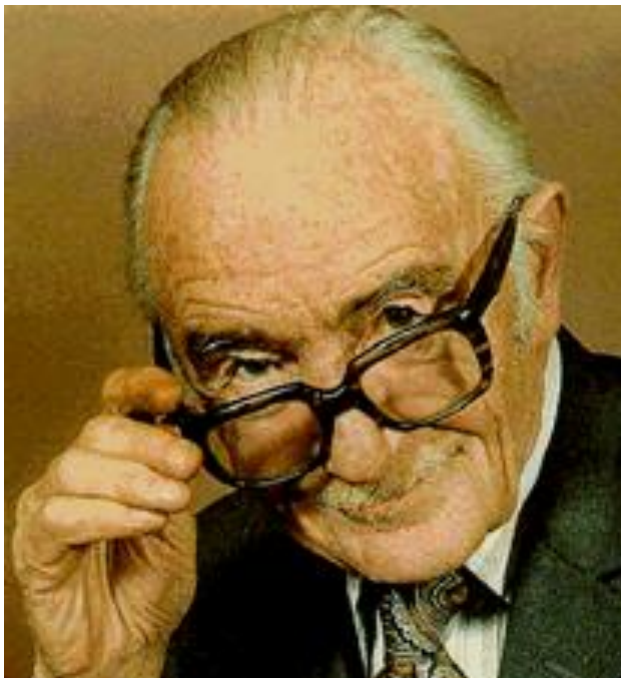
N Engl J Med **1977**; 296:716-721



Principle

“All effective treatments should be given free”

Archie Cochrane 1971



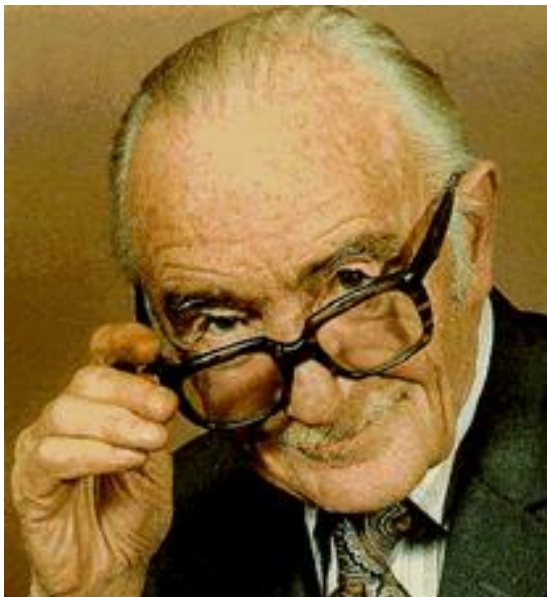
Principles

“All effective treatments should be given free”

Archie Cochrane 1971

“All cost effective treatments should be given
free”

Alan Williams, 1997



Optimising the Clinical Strategy for Autoimmune Liver Diseases:
Principles of Value-Based Medicine

Marco Carbone^{1,2} *, Laura Cristoferi^{1,2} *, Paolo Angelo Cortesi⁴, Matteo Rota², Antonio Ciaccio^{1,2}, Stefano Okolicsanyi^{1,2}, Marta Gemma^{1,2}, Luciana Scalone⁴, Giancarlo Cesana⁴, Luca Fabris^{2,3,5}, Michele Colledan⁶, Stefano Fagiuoli⁷, Gaetano Ideo⁹, Luca Saverio Belli^{2,8}, Luca Maria Munari⁸, Lorenzo Mantovani⁴ and Mario Strazzabosco^{1,2,3}

Division of Gastroenterology, Department of Medicine and Surgery, University of Milan-Bicocca, Milan, Italy¹ International Center for Digestive Health, University of Milan-Bicocca, Milan, Italy², Liver Center & Section of Digestive Diseases, Department of Internal Medicine, Yale University School of Medicine, New Haven, CT, USA³, Research Centre on Public Health (CESP), University of Milan-Bicocca, Milan, Italy⁴, Department of Molecular Medicine, University of Padua School of Medicine, Padua, Italy⁵, Department of Surgery, Papa Giovanni XXIII Hospital, Bergamo⁶, Department of Gastroenterology, Papa Giovanni XXIII Hospital, Bergamo⁷, Department of Hepatology and Gastroenterology, Liver Unit, Niguarda Hospital, Milan, Italy⁸, FADE Foundation, Milan⁹.

Che cosa ci interessa?

“Value” and Transferability

“Value” and Transferability

doi:10.1002/ejhf.919

Sacubitril/valsartan in heart failure with reduced ejection fraction: cost and effectiveness in the Italian context

Lucia S. D'Angiolella^{1,2},
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Daniela Ritrovato³,
Lorenzo G. Mantovani¹, and
Michele Senni⁴

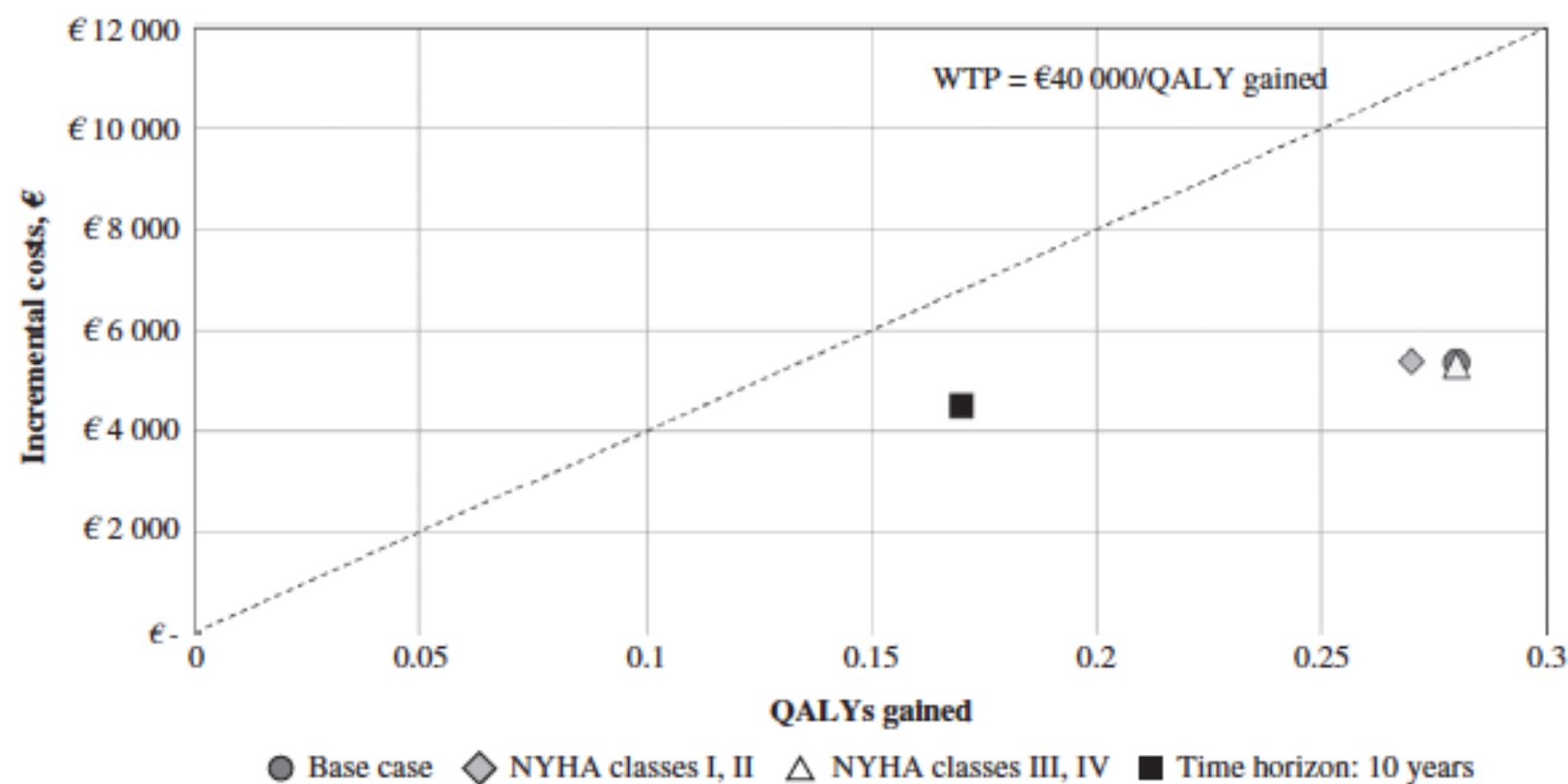


Figure 1 Incremental costs (€) and quality-adjusted life years (QALYs) gained in comparisons of sacubitril/valsartan with enalapril in the base case analysis and in the alternative scenario analyses. The dotted line represents the willingness-to-pay (WTP) threshold. Each scenario under the dotted line has an incremental cost-effectiveness ratio below €40 000 per QALY gained and is considered cost-effective. NYHA, New York Heart Association.

“Value” and Transferability

ORIGINAL ARTICLE

Angiotensin–Neprilysin Inhibition
versus Enalapril in Heart Failure

John J.V. McMurray, M.D., Milton Packer, M.D., Akshay S. Desai, M.D., M.P.H.,
Jianjian Gong, Ph.D., Martin P. Lefkowitz, M.D., Adel R. Rizkala, Pharm.D.,
Jean L. Rouleau, M.D., Victor C. Shi, M.D., Scott D. Solomon, M.D.,
Karl Swedberg, M.D., Ph.D., and Michael R. Zile, M.D.,
for the PARADIGM-HF Investigators and Committees*

Table 1. Characteristics of the Patients at Baseline.*

Characteristic	LCZ696 (N=4187)	Enalapril (N=4212)
Age — yr	63.8±11.5	63.8±11.3
Female sex — no. (%)	879 (21.0)	953 (22.6)

Articles

The Cardiac Insufficiency Bisoprolol Study II (CIBIS-II): a randomised trial

*CIBIS-II Investigators and Committees**

Characteristics	Placebo (n=1320)	Bisoprolol (n=1327)
Demographic		
Mean (range) age (years)	61 (22–80)	61 (26–80)
Sex (M/F)	1062 (80%)/ 258 (20%)	1070 (81%)/ 257 (19%)



THE EFFECT OF SPIRONOLACTONE ON MORBIDITY AND MORTALITY IN PATIENTS WITH SEVERE HEART FAILURE

BERTRAM PITT, M.D., FAIEZ ZANNAD, M.D., WILLEM J. REMME, M.D., ROBERT CODY, M.D., ALAIN CASTAIGNE, M.D.,

TABLE 1. BASE-LINE CHARACTERISTICS OF THE PATIENTS.*

CHARACTERISTIC	PLACEBO GROUP (N=841)	SPIRONOLACTONE GROUP (N=822)
Age — yr	65±12	65±12
White race — %	86	87
Sex — no. (%)		
Male	614 (73)	603 (73)
Female	227 (27)	219 (27)

CHF in an unselected population identified through administrative DB

- Individuals 2122
- Female 1174 (55.3%)
- Age 78_±11
 F: 81_±10 M: 74.2_±11

ORIGINAL ARTICLE

Comparison of Intensive and Moderate Lipid Lowering with Statins after Acute Coronary Syndromes

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JANUARY 5, 2012 VOL. 366 NO. 1

ORIGINAL ARTICLE

Effect of Platelet Inhibition with Cangrelor during PCI on Ischemic Events

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 10, 2009 VOL. 361 NO. 11

Rivaroxaban in Patients with a Recent Acute Coronary Syndrome

The NEW ENGLAND JOURNAL of MEDICINE

ticagrelor in Patients with Acute Coronary Syndromes

Optimal Medical Therapy with or without PCI for Stable Coronary Disease

Table 1. Baseline Clinical and Angiographic Characteristics.*

Characteristic	PCI Group (N=1149)	Medical-Therapy Group (N=1138)
Demographic		
Age — yr	61.5±10.1	61.8±9.7
Sex — no. (%)		
Male	979 (85)	968 (85)
Female	169 (15)	169 (15)



Contents lists available at [ScienceDirect](#)

International Journal of Cardiology

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



Letter to the Editor

Burden of acute myocardial infarction

Lorenzo G. Mantovani ^{a,b}, Carla Fornari ^a, Fabiana Madotto ^a, Michele A. Riva ^a, Luca Merlini ^c,
Marco M. Ferrario ^d, Virginio Chiodini ^a, Alberto Zocchetti ^c, Giovanni Corrao ^e, Giancarlo Cesana ^{a,*}

Epidemiology

Population	Female	Male	Total
N	4416	7633	12049
Age mean (years $\pm$ sd)*	76.627 $\pm$ 11.540	66.779 $\pm$ 12.356	70.389 $\pm$ 12.962
Age class:			
< 40	22 (0.5%)	114 (1.5%)	136 (1.1%)
40 – 49	106 (2.4%)	628 (8.2%)	734 (6.1%)
50 – 59	270 (6.1%)	1515 (19.9%)	1785 (14.8%)
60 – 69	651 (14.7%)	2140 (28.0%)	2791 (23.2%)
70 – 79	1456 (33.0%)	2102 (27.5%)	3558 (29.5%)
80 – 89	1464 (33.2%)	975 (12.8%)	2439 (20.3%)
+ 90	447 (10.1%)	159 (2.1%)	606 (5.0%)
Death*°	1600 (36.2%)	1780 (23.3%)	3380 (28.1%)



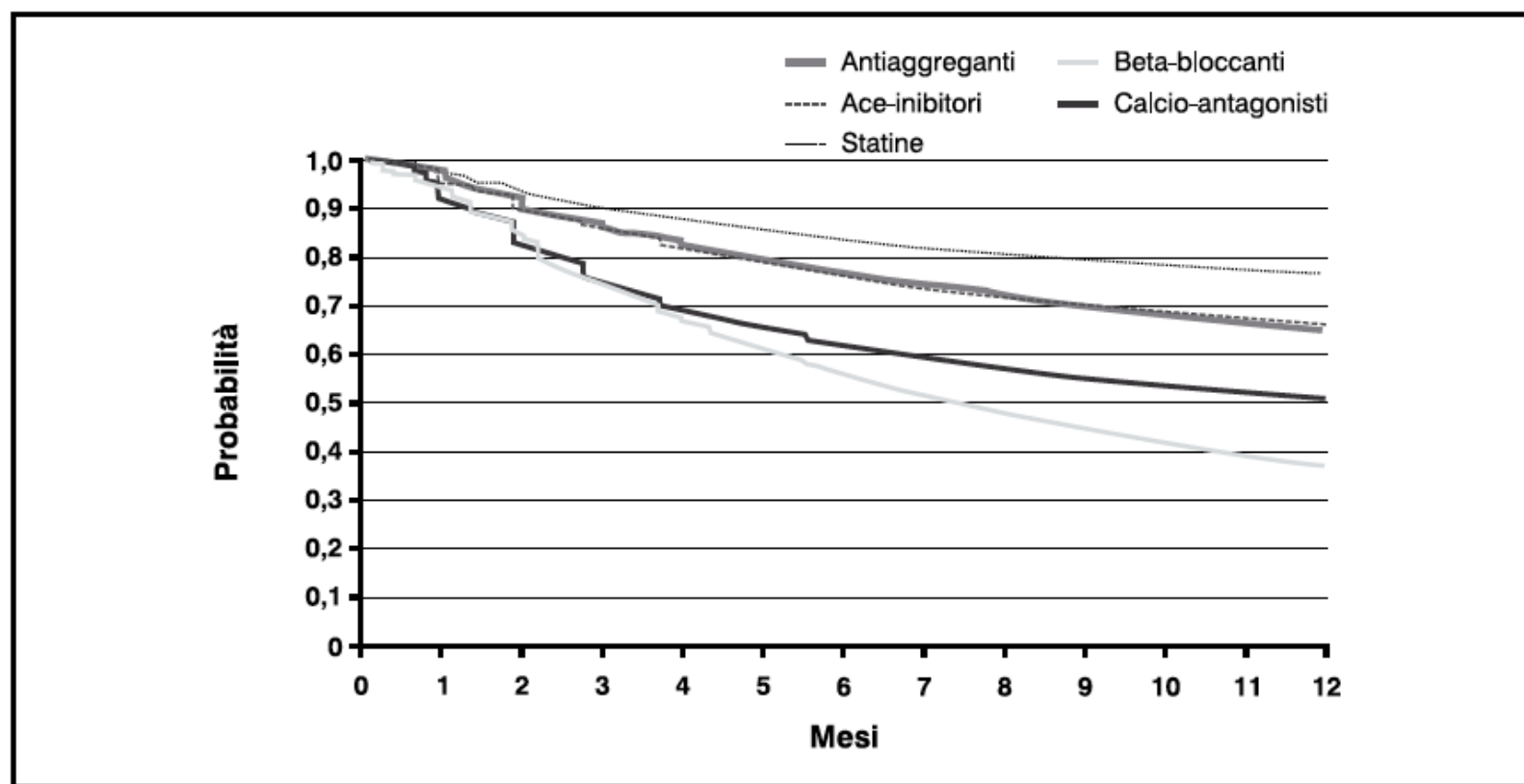


Figura 2
*Persistenza terapeutica
ad alcune classi di
farmaci cardiovascolari*

Quindi? Questo comporta qualcosa?

Hypertension

Adherence to Antihypertensive Medications and Cardiovascular Morbidity Among Newly Diagnosed Hypertensive Patients

Giampiero Mazzaglia, MD, PhD; Ettore Ambrosioni, MD, PhD; Marianna Alacqua, MD;
Alessandro Filippi, MD; Emiliano Sessa, DSc; Vincenzo Immordino, MD; Claudio Borghi, MD;
Ovidio Brignoli, MD; Achille P. Caputi, MD; Claudio Cricelli, MD; Lorenzo G. Mantovani, MSc, DSc

Hypertension

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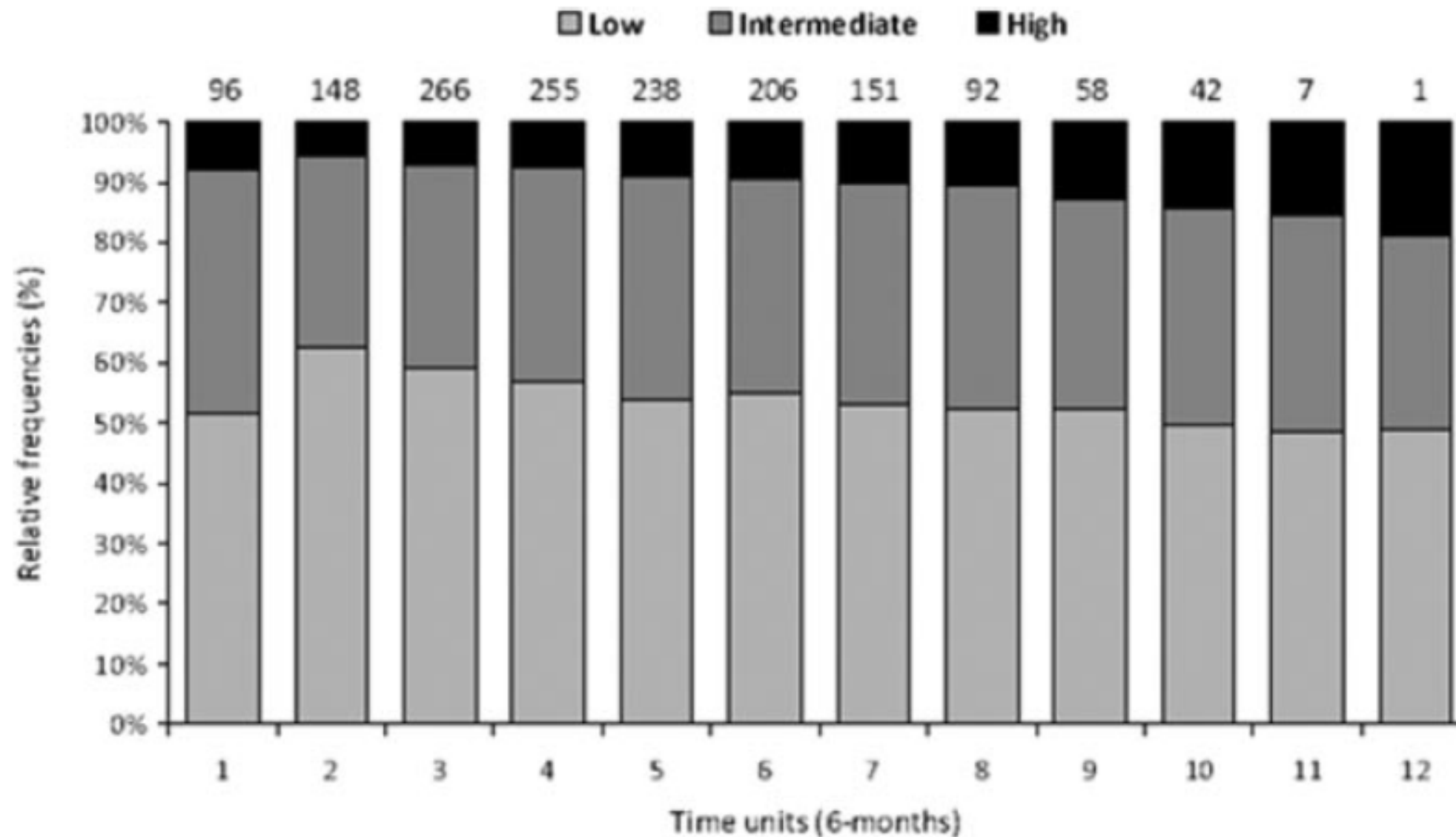


Table 3. Multivariable Analysis of the Association of Patient Characteristics With First-Ever Acute Cardiovascular Event Estimated by Cox Proportional-Hazards Models

Adherence Within 6 mo After Diagnosis	HR* (95% CI)	<i>P</i>
Model 1†		
Low (PDC <40%)	1.00	<0.001§
Intermediate (PDC, 40% to 79%)	0.87 (0.73–1.03)	0.117
High (PDC ≥80%)	0.50 (0.35–0.69)	<0.001
Model 2†		
Low (PDC <40%)	1.00	<0.001§
Intermediate (PDC, 40% to 79%)	0.86 (0.71–1.03)	0.109
High (PDC ≥80%)	0.62 (0.40–0.96)	0.032

A total of 659 CVEs were considered in the models.

RESEARCH ARTICLE

Quality of Vitamin K Antagonist Control and 1-Year Outcomes in Patients with Atrial Fibrillation: A Global Perspective from the GARFIELD-AF Registry

Sylvia Haas^{1*}, Hugo ten Cate², Gabriele Accetta³, Pantep Angchaisuksiri⁴, Jean-Pierre Bassand^{3,5}, A. John Camm⁶, Ramon Corbalan⁷, Harald Darius⁸, David A. Fitzmaurice⁹, Samuel Z. Goldhaber¹⁰, Shinya Goto¹¹, Barry Jacobson¹², Gloria Kayani³, Lorenzo G. Mantovani¹³, Frank Misselwitz¹⁴, Karen Pieper¹⁵, Sebastian M. Schellong¹⁶, Janina Stepinska¹⁷, Alexander G. G. Turpie¹⁸, Martin van Eickels¹⁴, Ajay K. Kakkar^{3,19}, for the GARFIELD-AF Investigators[†]



Table 1. Baseline characteristics of patients according to proportion of time in therapeutic range.

	TTR<65% (N = 5851; 58.9%)		TTR≥65% (N = 4083; 41.1%)		Total (N = 9934; 100%)	
Age, mean (SD), years	70.7 (10.6)		71.9 (9.7)		71.2 (10.2)	
Age group, n/N, %						
65–74 years	2029/5851	34.7	1430/4083	35.0	3459/9934	34.8
≥75 years	2343/5851	40.0	1786/4083	43.7	4129/9934	41.6
Women, n/N, %	2649/5851	45.3	1791/4083	43.9	4440/9934	44.7

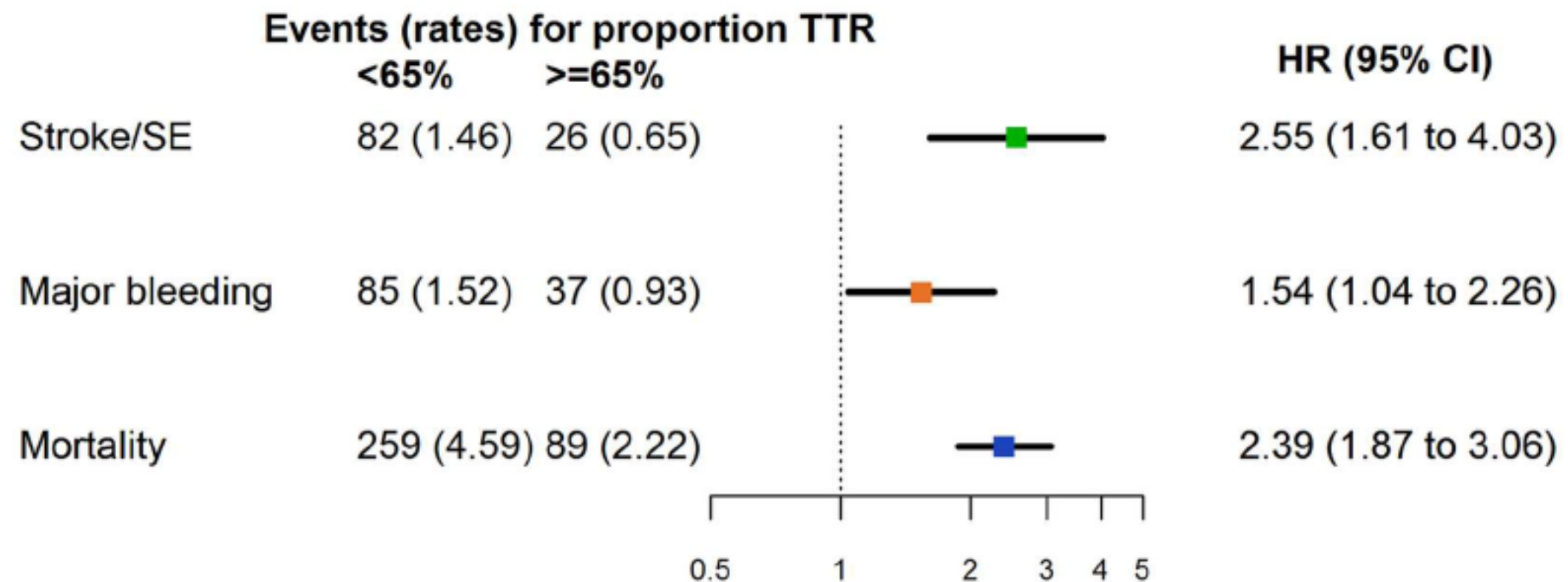


Fig 1. Incidence rates and adjusted hazard ratios for 1-year clinical outcomes according to proportion of time in therapeutic range. Reference group: TTR_≥65%. Incidence rates are per 100 person-years. CI,

Sì!

- Se il paziente non prende il farmaco ... il farmaco non funziona
- Se il paziente non raggiunge il range terapeutico ... il farmaco non funziona (o peggio)

...Cronico...

Administrative databases as a tool for identifying healthcare demand and costs in an over-one million population

TABLE 2

FABIANA MADOTTO⁽¹⁾, MICHELE A. RIVA⁽¹⁾, CARLA FORNARI^(1,2), LUCIANA SCALONE⁽¹⁾, ROBERTA CIAMPICHINI⁽³⁾, CHIARA BONAZZI⁽⁴⁾, LORENZO G. MANTOVANI^(1,3,5), GIANCARLO CESANA^(1,2)

DEMOGRAPHIC CHARACTERISTICS AND COSTS OF “PEOPLE AFFECTED BY MORE THAN ONE CHRONIC DISEASE” SEGMENT, STRATIFIED BY THE NUMBER OF CONCOMITANT CHRONIC CONDITIONS					
N. OF CDS ^A	SUBJECTS N (%)	MALE %	AGE Q _{0.5} (Q _{0.25} -Q _{0.75}) ^B	TOTAL COST MILLION EURO (%)	PER-CAPITA COST (EURO) MEAN ± SE ^C
2	66 887 (50.04)	43.38	65 (54 - 73)	127.75	1 909.97 ± 20.31
3	31 709 (23.72)	46.81	68 (60 - 75)	99.52	3 138.40 ± 34.16
4	16 283 (12.18)	50.77	70 (62 - 76)	76.97	4 727.08 ± 60.49
5	9 220 (6.90)	54.74	71 (63 - 77)	59.94	6 501.49 ± 96.46
6	4 798 (3.59)	57.71	72 (65 - 78)	40.86	8 516.21 ± 157.88
7	2 486 (1.86)	57.12	73 (66 - 78)	25.77	10 365.71 ± 269.31
8	1 258 (0.94)	58.66	73 (67 - 79)	15.20	12 083.39 ± 354.84
9 or more	1 029 (0.77)	61.42	74 (67 - 78)	16.12	15 666.25 ± 480.05
Segment	133 670	46.93	67 (58 - 75)	462.13	3 457.28 ± 19.81



Two-year outcomes of patients with newly diagnosed atrial fibrillation: results from GARFIELD-AF

Jean-Pierre Bassand^{1,2*}, Gabriele Accetta², Alan John Camm³, Frank Cools⁴, David A. Fitzmaurice⁵, Keith A.A. Fox⁶, Samuel Z. Goldhaber⁷, Shinya Goto⁸, Sylvia Haas⁹, Werner Hacke¹⁰, Gloria Kayani², Lorenzo G. Mantovani¹¹, Frank Misselwitz¹², Hugo ten Cate¹³, Alexander G.G. Turpie¹⁴, and Freek W.A. Verheugt^{15,16}, and Ajay K. Kakkar^{2,17}, for the GARFIELD-AF Investigators†

Table 1 Baseline characteristics of all patients

Variable	Value	%
Female, <i>n/n</i> (%)	7518/17 162	43.8
Age, mean (SD) (years)	69.8 (11.4)	<i>n/a</i>
Medical history, <i>n/n</i> (%)		
Congestive heart failure	3532/17 160	20.6
Coronary artery disease	3416/17 160	19.9
Acute coronary syndromes	1614/17 157	9.4
Carotid occlusive disease	507/17 148	3.0
Pulmonary embolism or deep vein thrombosis	478/17 150	2.8
Coronary artery bypass graft	503/16 654	3.0
Stroke/transient ischaemic attack	2186/17 160	12.7
Systemic embolism	109/17 150	0.6
History of bleeding	497/17 149	2.9
History of hypertension	13 396/17 160	78.1
Hypercholesterolaemia	6875/17 153	40.1
Diabetes	3750/17 160	21.9
Cirrhosis	94/17 148	0.5
Chronic kidney disease, <i>n/n</i> (%)		
None or mild (Grades I and II)	15 399/17 159	89.7
Moderate to severe (Grades III to V)	1760/17 159	10.3

...MultiCronico...

“Value” and Transferability

Complication

VS

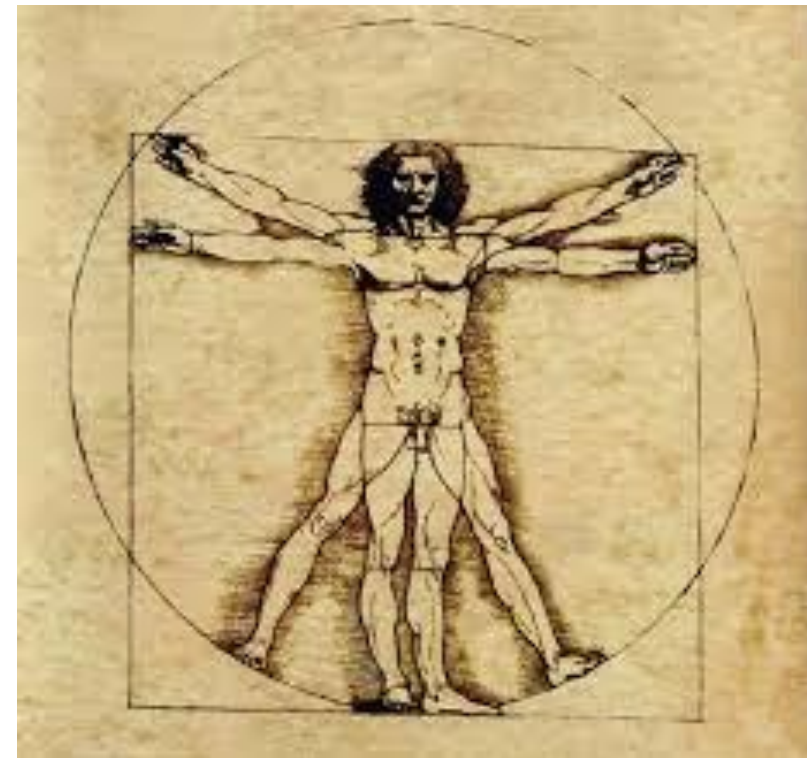
Complexity

Complication vs Complexity

- Complicated systems have many moving parts, but they operate in patterned ways.”



- “Complex systems are imbued with features that may operate in patterned ways but whose interactions are continually changing”



Proposed model of integrated care to improve health outcomes for individuals with multimorbidities

Tara Sampalli

Roy A Fox

Robert Dickson

Jonathan Fox

Integrated Chronic Care Service,
Primary Health Care, Capital Health,
Nova Scotia, Canada

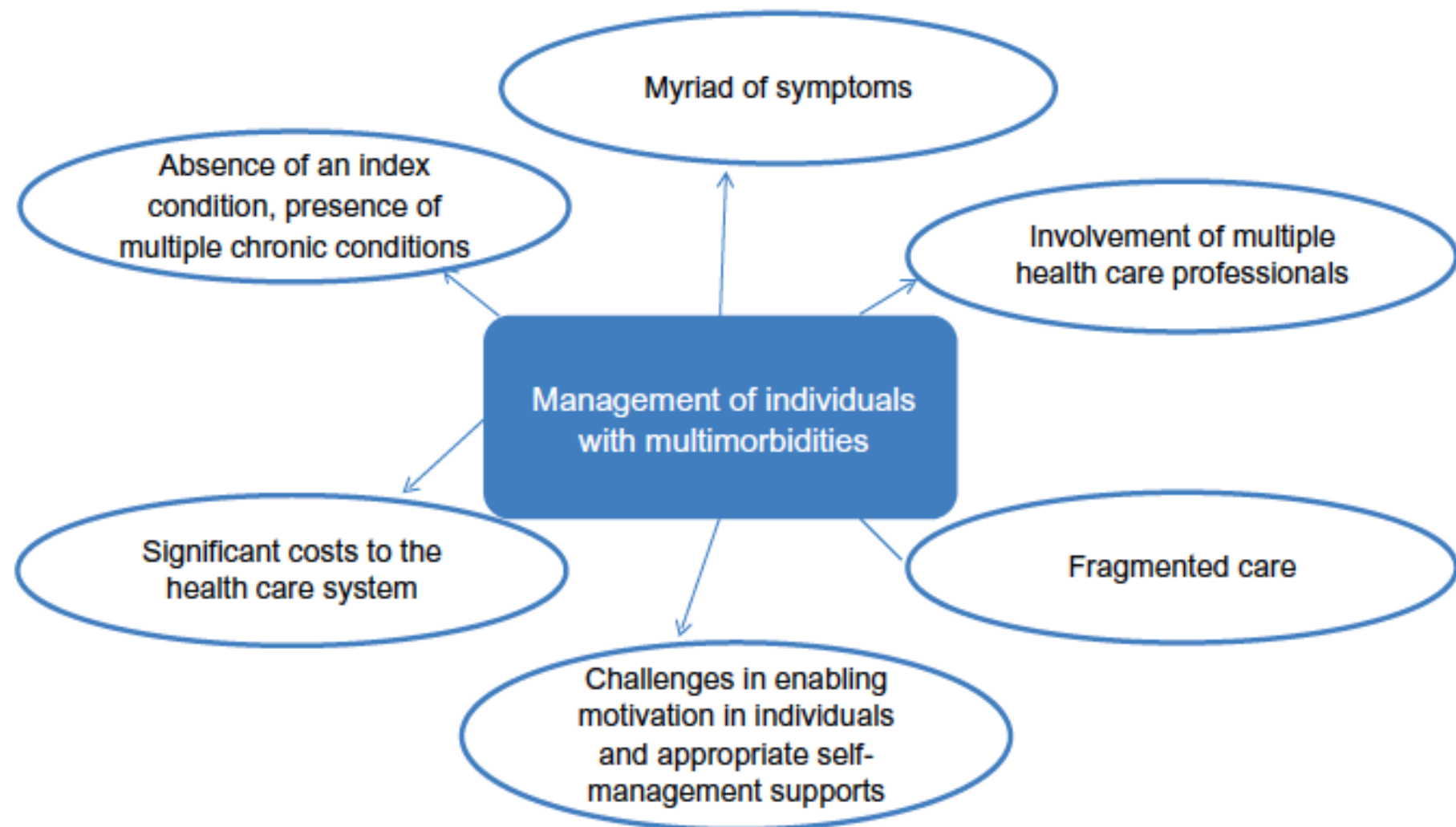


Figure 1 Challenges of managing multimorbidity.

“ The decision maker has a choice between optimal decisions for an imaginary simplified world or decisions that are "good enough, that satisfy", for a world approximating the complex real one more closely.”

Herbert A Simon, Nobel Laureate 1978





You can observe a lot by just watching.

(Yogi Berra)

izquotes.com

Lorenzo Pietro “Yogi” Berra

Per ogni problema complesso,
c'è sempre una soluzione semplice.

George Bernard Shaw

Per ogni problema complesso,
c'è sempre una soluzione semplice.
Che è sbagliata.

George Bernard Shaw

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