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ISPOR ITALY - ROME CHAPTER

Resource utilization: the value of anti-HCV treatment screening

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* A Marcellusi, R Viti, L Kondili, S Rosato, S Vella, FS Mennini, on behalf of PITER collaboration study group

Background

- **Are DDA Cost Effective?**

Cost Effectiveness Analysis of The Use of Daclatasvir for the Treatment of Hepatitis C Virus (**Hcv**) Genotypes 3 in Cirrhotic Patients Within the Italian National Health Service.

Restelli U, Bonfanti M, Alberti A, Lazzarin A, Nappi C, Croce D.

Value Health. 2015 Nov;18(7):A587. doi: 10.1016/j.jval.2015.09.1498. Epub 2015 Oct 20. No abstract available.

PMID: 26533297 Free Article

Similar articles

Cost Analysis of Residual Viremia Detected by Two Real-Time Pcr Assays For Response-Guided (Dual Or Triple) Therapy of **Hcv** Genotype 1 Infection.

Paolini D, Lunghi G, Aghemo A, Dionisi M, Colombo M, Torresani E.

Value Health. 2015 Nov;18(7):A587. doi: 10.1016/j.jval.2015.09.1501. Epub 2015 Oct 20. No abstract available.

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Budget impact analysis of sofosbuvir-based regimens for the treatment of HIV/**HCV**-coinfected patients in northern **Italy**: a multicenter regional simulation.

Cenderello G, Artioli S, Viscoli C, Pasa A, Giacomini M, Giannini B, Dentone C, Nicolini LA, Cassola G, Di Biagio A.

Clinicoecon Outcomes Res. 2015 Dec 31;8:15-21. doi: 10.2147/CEOR.S93641. eCollection 2016.

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Similar articles

The optimal timing of **hepatitis C** therapy in liver transplant-eligible patients: **Cost**-effectiveness analysis of new opportunities.

Cortesi PA, Belli LS, Facchetti R, Mazzarelli C, Perricone G, De Nicola S, Cesana G, Duvoux C, Mantovani LG, Strazzabosco M; European Liver and Intestine Transplant Association (ELITA).

J Viral Hepat. 2018 Feb 6. doi: 10.1111/jvh.12877. [Epub ahead of print]

PMID: 29406608

- **Is early treatment an effective cost intervention?**

Modeling **cost**-effectiveness and health gains of a "universal" versus "prioritized" **hepatitis C** virus treatment policy in a real-life cohort.

Kondili LA, Romano F, Rolli FR, Ruggeri M, Rosato S, Brunetto MR, Zignego AL, Ciancio A, Di Leo A, Raimondo G, Ferrari C, Taliani G, Borgia G, Santantonio TA, Blanc P, Gaeta GB, Gasbarrini A, Chessa L, Erne EM, Villa E, Ieluzzi D, Russo FP, Andreone P, Vinci M, Coppola C, Chemello L, Madonia S, Verucchi G, Persico M, Zuin M, Puoti M, Alberti A, Nardone G, Massari M, Montalto G, Foti G, Rumi MG, Quaranta MG, Cicchetti A, Craxì A, Vella S; PITER Collaborating Group.

Hepatology. 2017 Dec;66(6):1814-1825. doi: 10.1002/hep.29399. Epub 2017 Oct 30.

Health policy model: long-term predictive results associated with the management of **hepatitis C** virus-induced diseases in **Italy**.

Mennini FS, Marcellusi A, Andreoni M, Gasbarrini A, Salomone S, Craxì A.

Clinicoecon Outcomes Res. 2014 Jun 19;6:303-10. doi: 10.2147/CEOR.S62092. eCollection 2014.

PMID: 24971024 Free PMC Article

Early Treatment in **HCV**: Is it a **Cost**-Utility Option from the Italian Perspective?

Marcellusi A, Viti R, Damele F, Cammà C, Taliani G, Mennini FS.

Clin Drug Investig. 2016 Aug;36(8):661-72. doi: 10.1007/s40261-016-0414-y.

PMID: 27234943

But.....

Does the investment that the NHS has made in the last few years for the purchase of the DAA provide for a return on investment?

After how long will we get acceptable economic returns?

PharmacoEconomics
https://doi.org/10.1007/s40273-018-0733-3

ORIGINAL RESEARCH ARTICLE

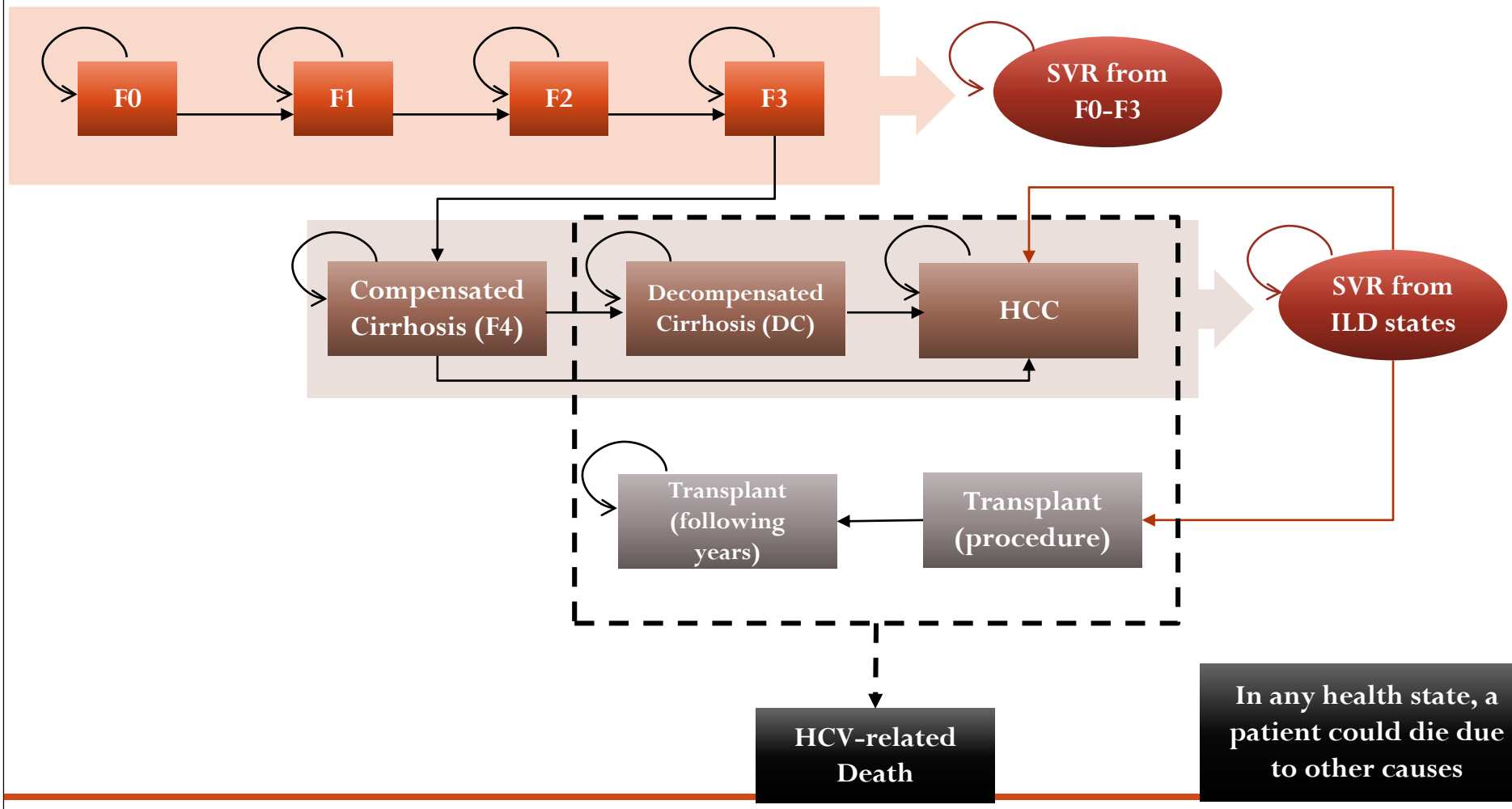
Economic Consequences of Investing in Anti-HCV Antiviral Treatment from the Italian NHS Perspective: A Real-World-Based Analysis of PITER Data

Andrea Marcellusi[1,2] · Raffaella Viti[1] · Loreta A. Kondili[3] · Stefano Rosato[3] · Stefano Vella[3] · Francesco Saverio Mennini[1,2] on behalf of PITER Collaborating group available at www.progettopiter.it

Methodology

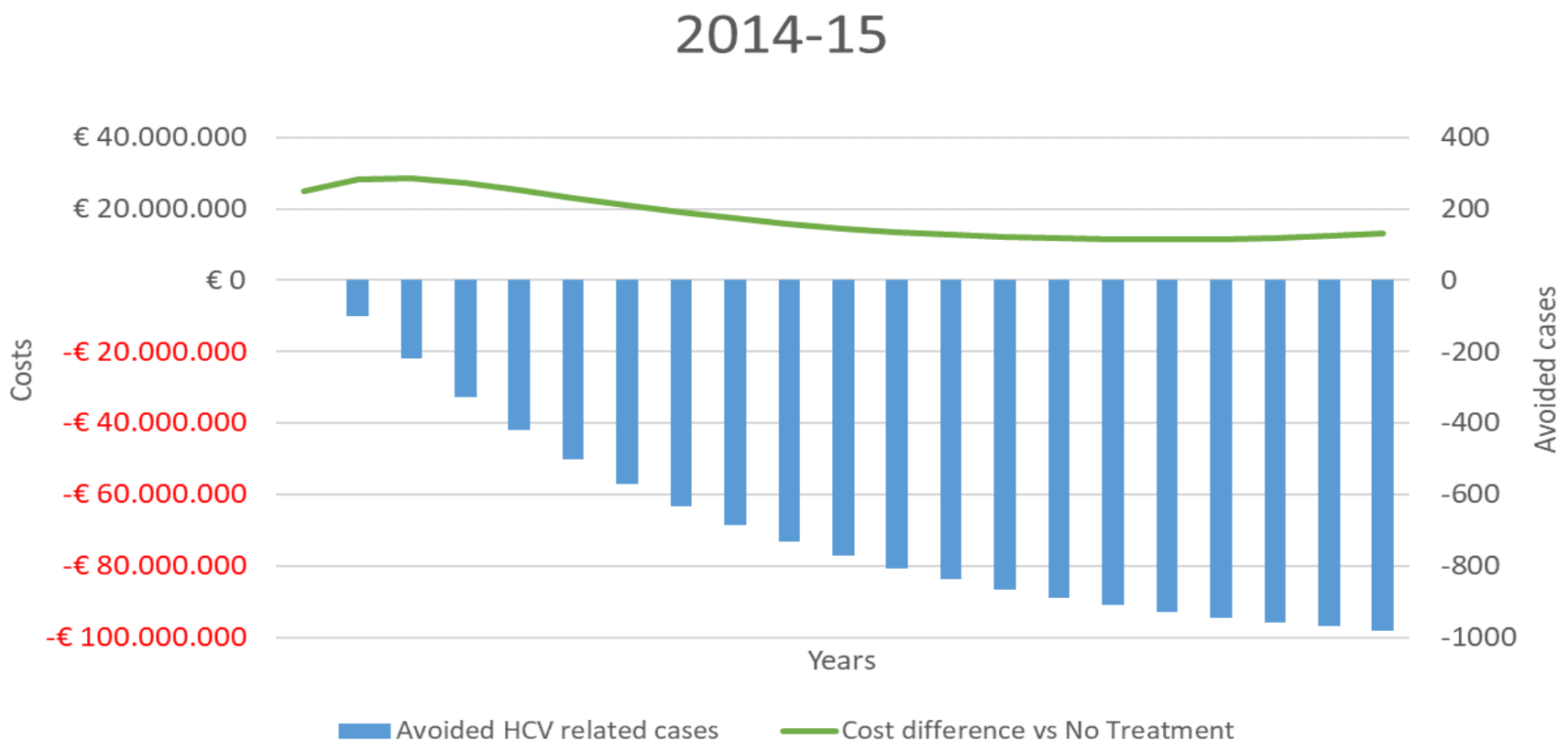
The model simulated the cost incurred by the NHS for the period 2014/2015, 2016 and 2017 in terms of direct medical costs based on the stratification of fibrosis and genotypes from the largest real database of patients treated with HCV.

Method: projection



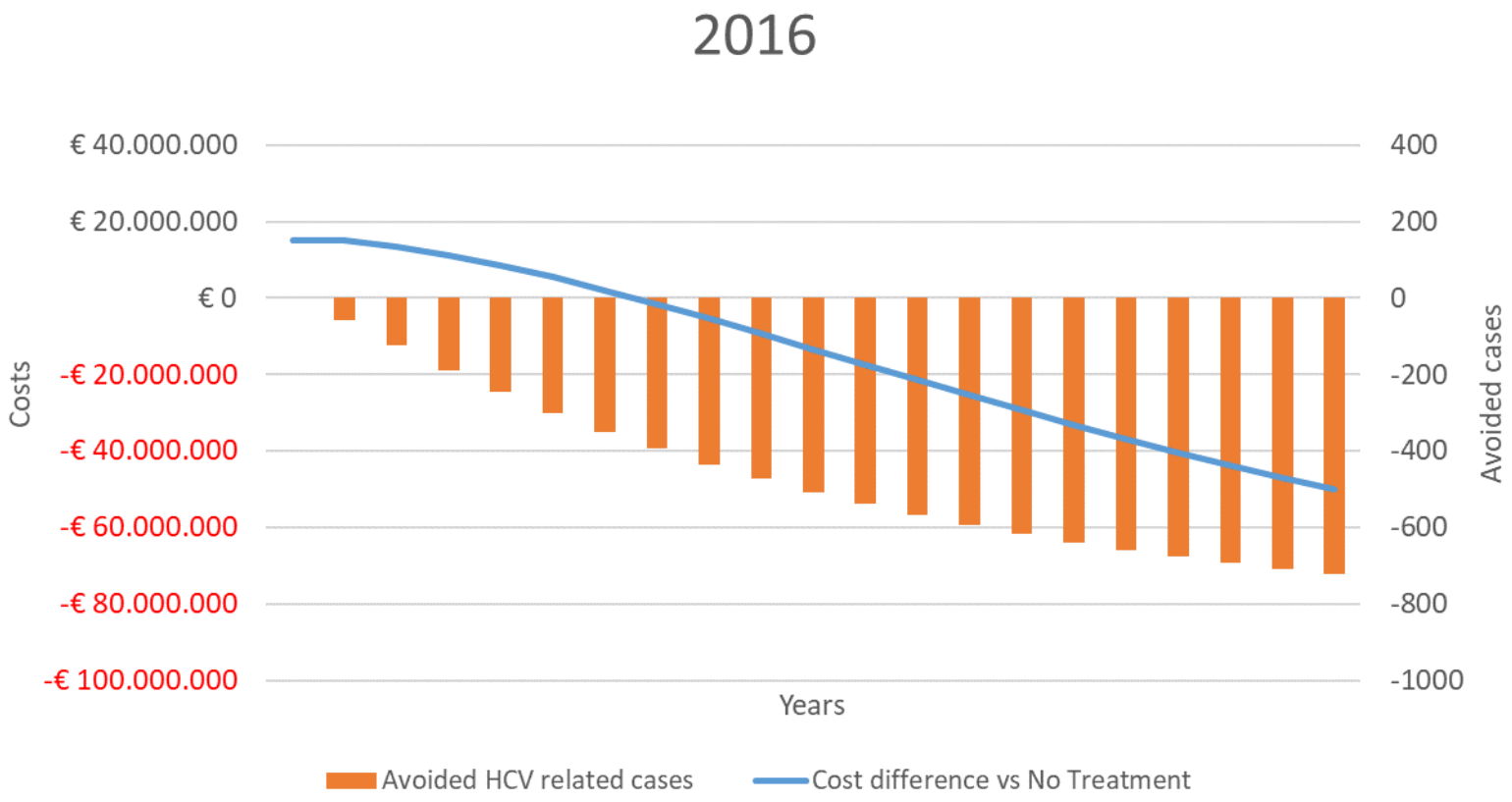
Results:

- Standardization for 1,000 treated patients



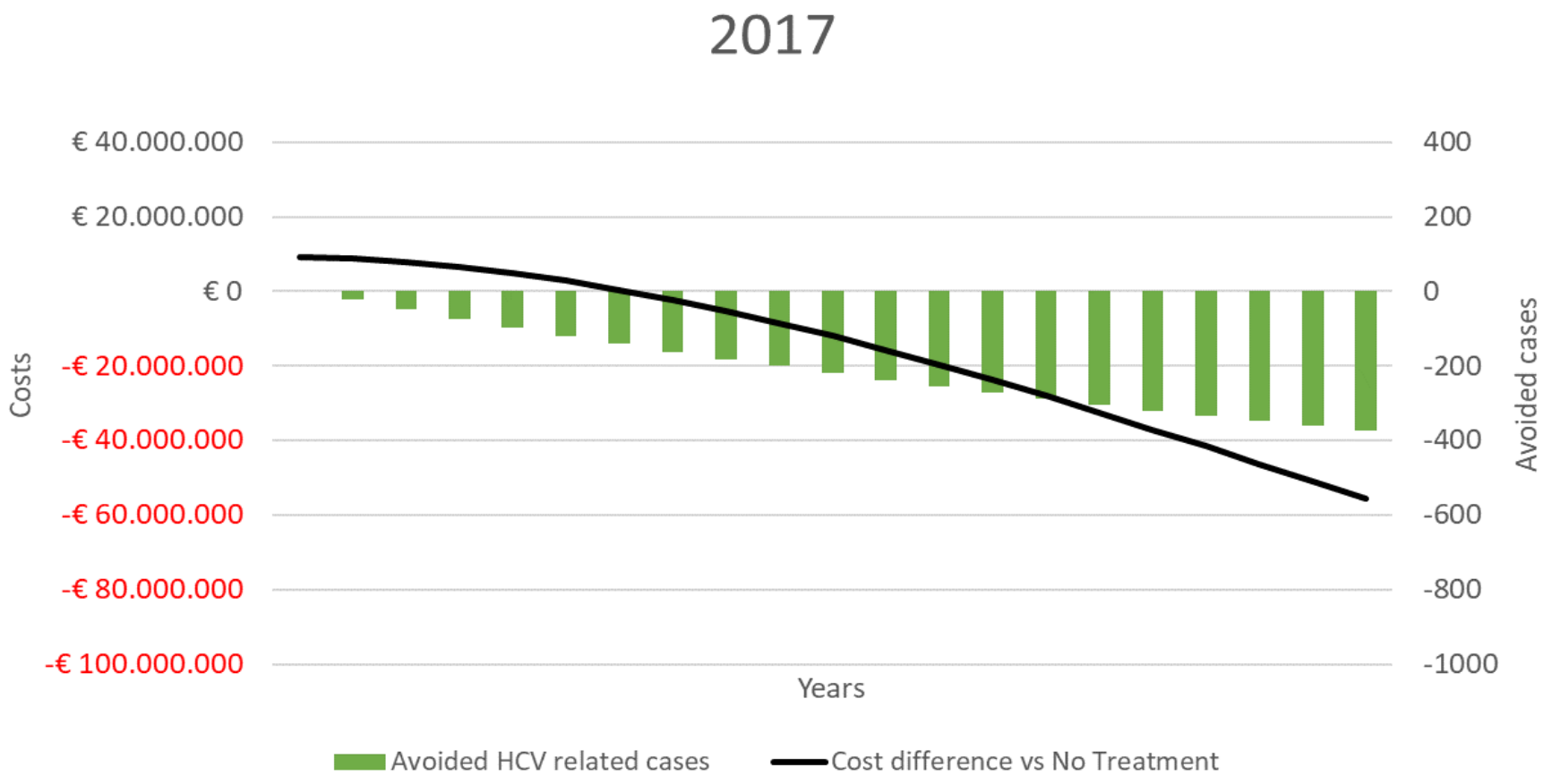
Results:

- Standardization for 1,000 treated patients



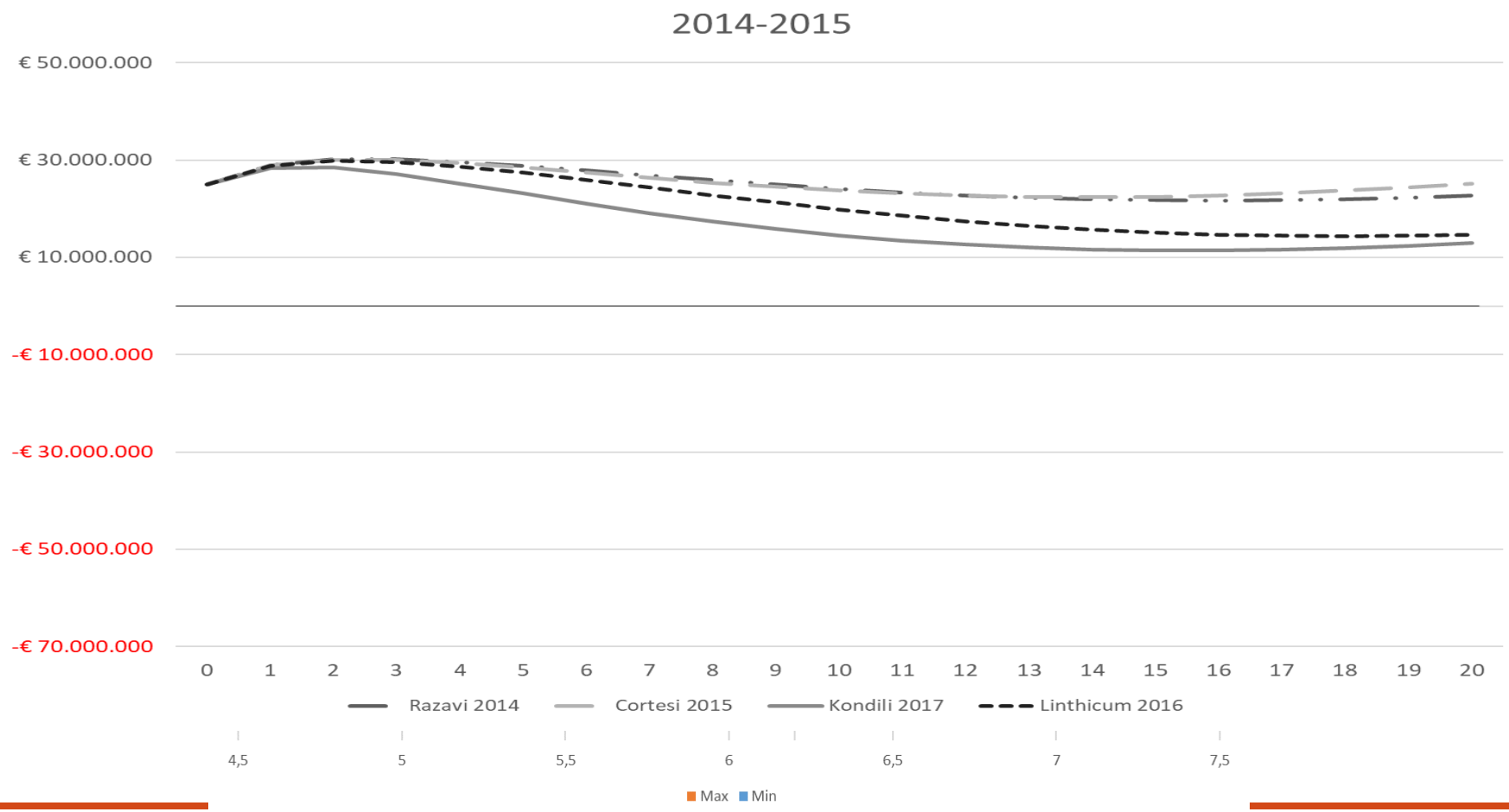
Results:

- Standardization for 1,000 treated patients



Results: sensitivity analysis

- Are we doing something wrong?



Results: sensitivity analysis

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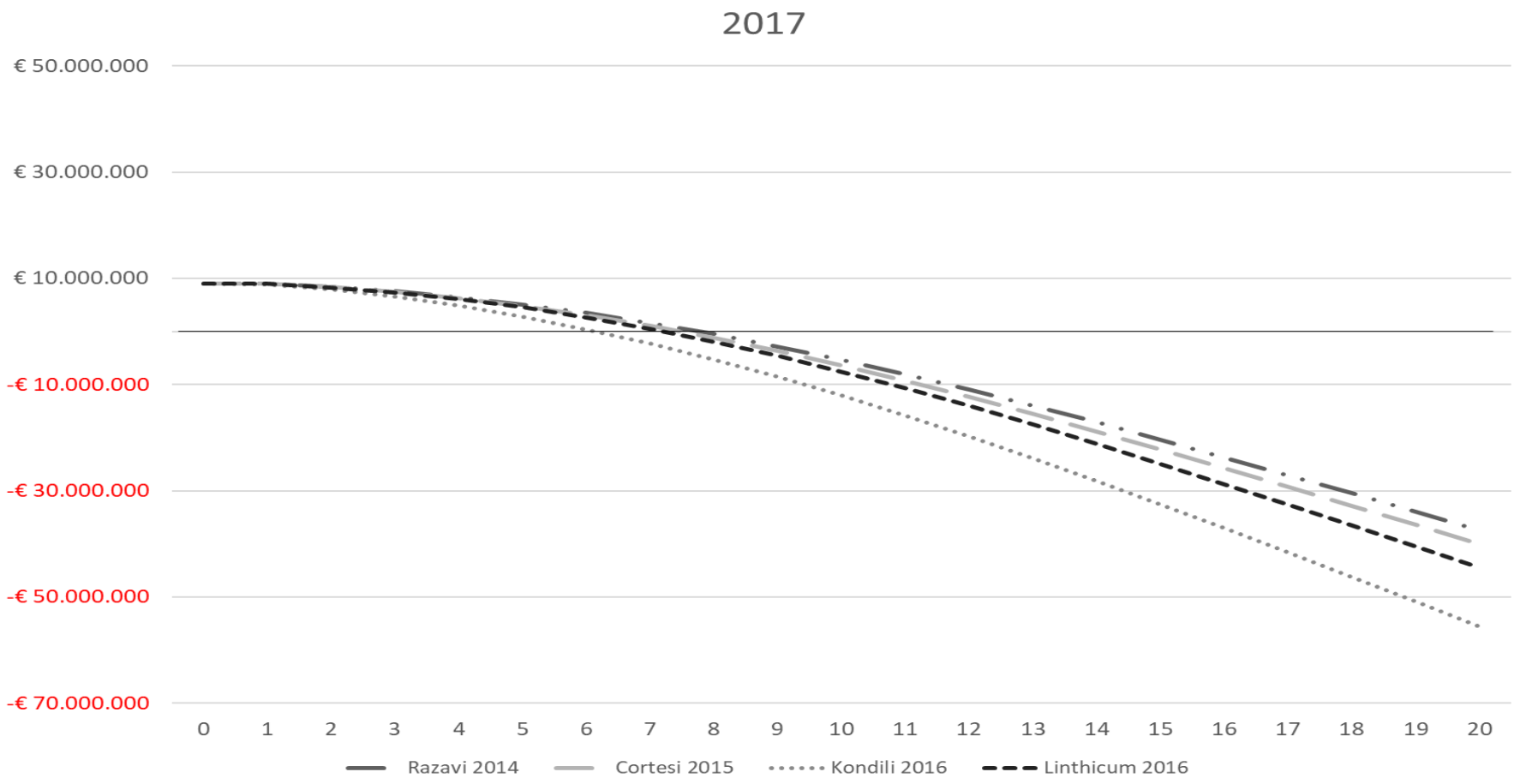

Comments

- With reference to patients treated in 2016 and 2017 (years in which patients were treated in less compromised disease states), the clinical events avoided made it possible to obtain a return on the initial investments for the purchase of the DAAs estimated respectively in 6, 6 and 6.2 years.

- A growing trend is evident that the estimated return on investment of the national health system in this study will continue in the future, leading to lower investments and faster returns.

(cfr. Marcellusi, Mennini et al., 2015; Lanini et al., 2018).

EASL 2019 (Vienna)

Screening strategies for hepatitis C virus elimination in Italy

I. Gamkrelidze[1], L. Kondili[2], A. Marcellusi[3], S. Robbins[1], S. Blach[1], A. Craxi[4], M. Puoti [5], H. Razavi[1], F.S. Mennini[3]

[1] Center for Disease Analysis Foundation, Lafayette, United States; [2] Istituto Superiore di Sanità, Rome, Italy; [3] University of Rome Tor Vergata, Rome, Italy; [4] University of Palermo, Palermo, Italy; [5] Niguarda Hospital, Milan, Italy

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PITER Piattaforma Italiana per lo studio della Terapia delle Epatiti viRali.

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JUST 12 COUNTRIES WORLDWIDE ON TRACK TO ELIMINATE HEPATITIS C INFECTION BY 2030, WITH UNITED KINGDOM, ITALY AND SPAIN AMONG THOSE JOINING THE LIST

June 16, 2018 *by Kimberly Murphy*

New data on the world's hepatitis C epidemic, presented at this week's Global Hepatitis Summit in Toronto, Canada (14-17 June) shows that only 12 countries in the world are on track to meet the WHO elimination targets that 194 countries globally signed up to in 2016. The data is presented by Dr Homie Razavi and his team from the Polaris Observatory, Center for Disease Analysis Foundation (CDAF), Lafayette, CO, USA.

Since the last global update in 2017, Italy, Spain, Switzerland, the UK and Mongolia have all been added to the list, thanks to the number of patients they treated in 2017, plus the lifting of treatment restrictions to include all patients with hepatitis C regardless of their degree of liver damage. These

Italy in 2018 ranks among the 12 countries that have positively set out to eliminate the HCV.But to do this we have to find the "submerged" and treat them

Elimination scenarios: 4 screening strategies vs status quo

- Universal screening
- Screening in birth cohorts 1948–77
- Screening in birth cohorts 1958–77

- Graduated birth cohorts screening

- birth years 1968–1987 beginning in 2020 to identify young populations at risk for transmitting HCV,
- expanding to 1948–1967 beginning in 2023 to identify older populations before their disease advances

Parameters used for screening scenarios

GHSS elimination	<2020	2020-2022	2023-2025	% PWID*	Screening Cost (per person, €)
Screening 1948–1977	Risk	1948–1977	1948–1977	8.2%	18
Screening 1958–1977	Risk	1958–1977	1958–1977	12.1%	20
Screening Graduato	Risk	1968-1977	1948-1967	9.7%	19
Screening Universale	Risk	Tutta la popolazione	Tutta la popolazione	6.2%	17

GHSS — Global Health Sector Strategy; PWID — Persons who inject drugs; Risk — risk-based screening assumes that those offered a test are approximately 5 times more likely to be infected than the general population PWID prevalence –United Nations Office on Drugs and Crime

For PWID the model considered a cost of 50 euros (5 times higher than the general population)

Results

Scenario		Cost (€ millions), 2018–2031	QALYs Gained, 2018–2031	ICER Relative to Status Quo (€/QALY)	ICER relative to previous least costly scenario (€/QALY)
Status quo		5,463	–	–	
GHSS Targets	Graduated Screening	5,974	144,000	3,552	3,552
	Screening 1948-1977	6,081	142,000	4,349	*
	Screening 1958-1977	6,083	128,000	4,831	*
	Universal Screening	6,441	145,000	6,758	562,855

ICER — incremental cost-effectiveness ratio; QALY — quality-adjusted life year;
GHSS — Global Health Sector Strategy;
The cost-effectiveness threshold was set at €25,000
* Strongly dominated scenario (costlier and less effective than another scenario)

Conclusion

Graduated screening is the most cost-effective strategy, producing an ICER of € 3,552 per QALY.

Universal screening is cost-effective compared to the status quo (ICER of € 6.758 per QALY) but not compared to graduated screening.

Conclusion

In Italy, the implementation of a graduated screening, starting with the 1968–87 birth cohorts, to follow later with the screening of the oldest birth cohorts 1948–67 is the strategy most cost effective in achieving the elimination goals.

This screening strategy could be considered to support Italy's path towards the elimination of HCV.

Comments

DAAs could reduce the weight of HCV over the next two decades.

The break-even point analysis, discounted in terms of time, has shown that the current investment for the treatment of AADs is **largely cost saving**.

Final remarks

Investing means improving health but also having an economic return in the medium to long term.

Statistical models are the only method for projecting future costs, but they are useless if they are not confirmed by real data.

Future real-world analyzes of the total number of patients treated in Italy to date are confirming the validity of the investment.

This study can be a useful tool for public decision makers to understand how the epidemiological profiles of HCV influence the economic weight of HCV.

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THANKS

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