DO NEW CANCER DRUGS OFFER GOOD VALUE FOR MONEY? THE PERSPECTIVE OF ONCOLOGISTS, PAYERS, PATIENTS, AND GENERAL POPULATION.

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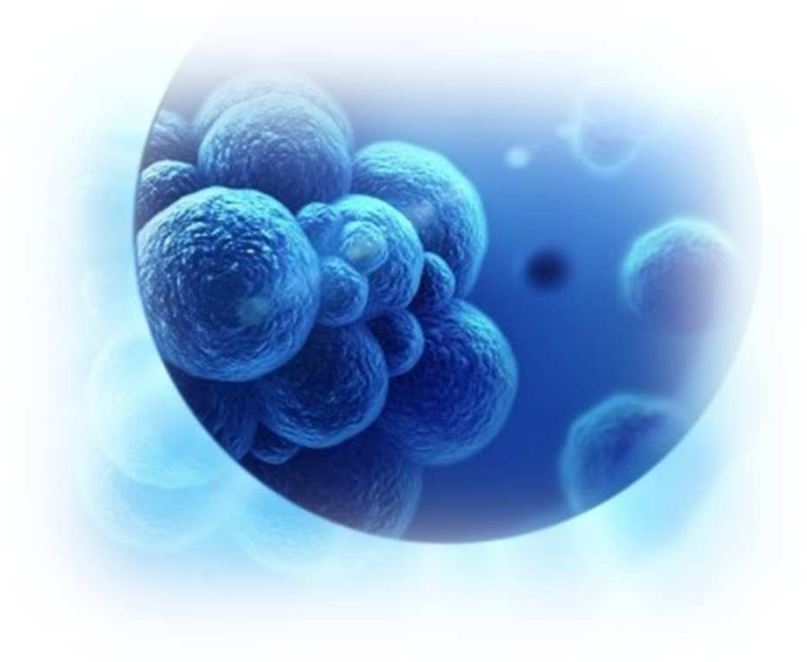
Outcomes'10

Lilly

BACKGROUND

Up to 170 million years of healthy life lost[1] and 8.2 million deaths in 2012.[2]



Cancer is one of the leading causes of mortality and morbidity worldwide.

1. Soerjomataram I et al. Global burden of cancer in 2008: a systematic analysis of disability-adjusted life-years in 12 world regions. Lancet. 2012 Nov 24;380(9856):1840-50.

2. Ferlay J et al. F. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2013. Available from: http://globocan.iarc.fr.

BACKGROUND

New cancer drugs

Prolong survival

Improve Quality of life

BACKGROUND

Can the National Health System afford these new cancer drugs?

Cost-effectiveness of new cancer treatments

BACKGROUND

Ratio per QALY gained most frequently used

£20,000-£30,000/QALY for the UK[1]

$50,000/QALY for the US[2]

Some economists as well the World Health Organization have argued for a threshold of two to three times the per capita annual income[3]

$110,000-160,000/QALY for the US

Others have proposed a threshold on the basis of increases in health care pending over time and the health gains associated with those increases[3]

$200,000-300,000/QALY for the US

It is challenging to stablish a single threshold to represent society's willingness to pay for QALYs gained.

1. National Institute for Health and Clinical Excellence. Guide to the methods of technology appraisal. NICE: London, 2008.
2. Neumann PJ et al. Are pharmaceuticals cost-effective? A review of the evidence? Health Aff (Millwood). 2000;19: 92–109.
3. Neumann PJ. Updating cost-effectiveness-The Curious resilence of the $50,000 per QALY Threshold. N Engl J Med. 2014; 371;9

BACKGROUND

Previous studies have stablished the implicit ICERs that **ONCOLOGISTS** considered to determine if new treatments were efficient:

- ***$300,000/QALY (Nadler 2006, US[1])***
- ***$245,972/QALY for the life-prolonging scenario and $119,082/QALY for treatments that improve QoL but do not prolong survival (Kozminski 2011, US[2])***
- ***$100,000/QALY to $192,308/QALY (Ubel 2012, US and Canada[3])***
- ***$150,000/QALY for the life-prolonging scenario and $60,000/QALY for the QoL-enhancing scenario (Greenberg 2013, Israel[4])***

None included the perspective of other agents, that may have some influence in the decision-making process and that also represent the interests of the society as a whole.

1. Nadler E, Eckert B, Neumann P. Do oncologists believe new cancer drugs offer good value? Oncologist. 2006;11(2):90-5.
2. Kozminski MA, Neumann PJ, Nadler ES, Jankovic A, Ubel PA. How long and how well: oncologists' attitudes toward the relative value of life-prolonging v. quality of life-enhancing treatments. Med Decis Making. 2011;31(3):380-5.
3. Ubel PA, Berry SR; Nadler E, Bell CM, Kozminski MA, et al. In a Survey, marked inconsistency in how oncologists judged value of high-cost cancer drugs in relation to gains in survival. Health Aff (Millwood). 2012;31(4):709-17
4. Greenberg D, Hammerman A, Vinker S, Shani A, Yermiahu, Y et al. Which is more valuable, longer survival or better quality of life? Israeli oncologists' and family physicians' attitudes toward the relative value of new cancer and congestive heart failure interventions. Value Health. 2013;16(5):842-7.

AIM

To determine the value of the life-prolonging versus the QoL-enhancing outcomes attributable to new cancer drugs

To analyze oncologists', health policy makers', patients', and general population´ point of view

METHODS

Study participants

Oncologists and health policy makers were identified amongst hospital departments and national health organizations web sites directories.

Contact with patients was made through local cancer associations and the Spanish cancer federation.

For the general population, a convenience sample was used. Employees in technological companies, research institutes, universities and governmental institutions were invited to take part in the study, assuring that participants were able to understand the questionnaire.

A total of 425 oncologists, 140 health policy makers, 210 patients and 420 individuals from the general population were invited to participate.

METHODS

Electronic questionnaire

Life prolonging

Imagine that a new treatment for lung metastasis has an additional cost of €50,000 per year compared to standard treatment, having both of them the same safety profile. Standard treatment would provide a 1-year survival without changing the health related quality of life. Indicate the minimum survival benefit that the new treatment should provide in order to be funded by the National Health System.

○ 1 day

○ 1 month

○ 2 - 4 months

○ 4 - 6 months

○ 9 - 12 months

○ More than 12 months

METHODS

Electronic questionnaire

Quality of life-enhancing

Imagine that a new treatment for lung metastasis improves the quality of life by two fold compared with standard treatment, but both of them provide the same survival (1 year). Indicate the additional cost that the new treatment should have in order to be funded by the National Health System.

STANDARD TREATMENT

Quality of life (in a scale that ranged from 0 to 100): 40

Survival: 1 year
Cost: €25,000/year

Double improvement of quality of life

NEW TREATMENT

Quality of life (in a scale that ranged from 0 to 100): 40

Survival: 1 year
Additional cost: €/year?

○	○	○	○	○	○	○	○
€0	To €2,000/year	To €4,000/year	To €6,000/year	To €10,000/year	To €20,000/year	To €50,000/year	More than €50,000/year

RESULTS

Sociodemographic characteristics

	Oncologists (n=53)	Health policy makers (n=25)	Patients (n=60)	General population (n=50)
Response rate	12.5%	17.9%	28.6%	11.9%
Age (year ± SD)	46 ± 9	43 ± 11	49 ± 9	37 ± 10
Gender (female)	47%	56%	95%	52%
Employment status				
Employed	---	---	56.7%	88.0%
Unemployed	---	---	18.3%	10.0%
Retired	---	---	6.7%	0.0%
Disabled	---	---	6.7%	0.0%
Housewife	---	---	8.3%	0.0%
Student	---	---	0.0%	2.0%
Others	---	---	3.3%	0.0%
Estimated per capita annual income				
<€9,5007year	---	---	21.6%	18.0%
€9,500-16,000/year	---	---	30.0%	38.0%
€16,000-30,000/year	---	---	36.6%	34.0%
>30,000/year	---	---	11.8%	10.0%
Time since beginning of practice (oncologist, health …)				
1-5 years	0.0%	36.0%	---	---
6-10 years	0.0%	12.0%	---	---
11-15 years	35.8%	16.0%	---	---
16-20 years	22.6%	8.0%	---	---
21-25 years	20.7%	8.0%	---	---
26-30 years	17.0%	16.0%	---	---
> 30 years	3.8%	4.0%	---	---

RESULTS

Life prolonging

Indicate the minimum survival benefit that the new treatment should provide in order to be funded by the National Health System.

STANDARD TREATMENT

Cost: €25,000

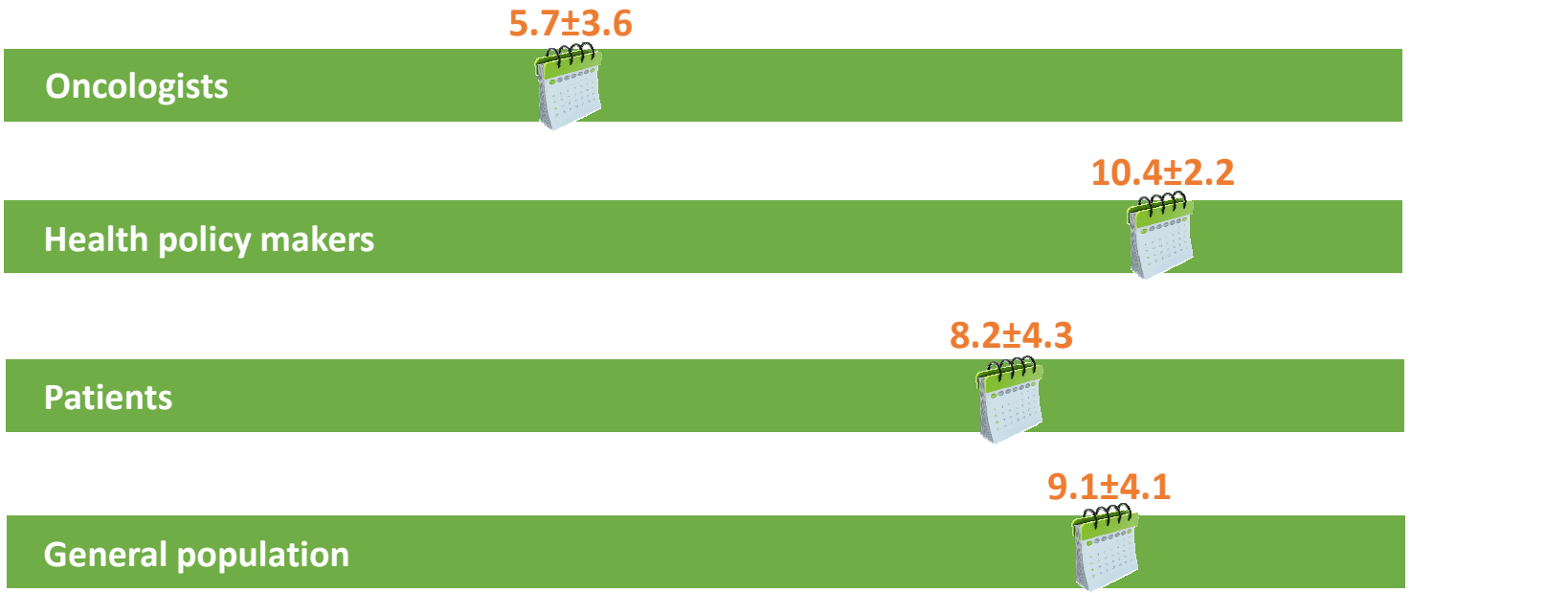
Survival: 1 year

Additional cost: +€50.000

NEW TREATMENT

Cost: €75,000

Additional survival?

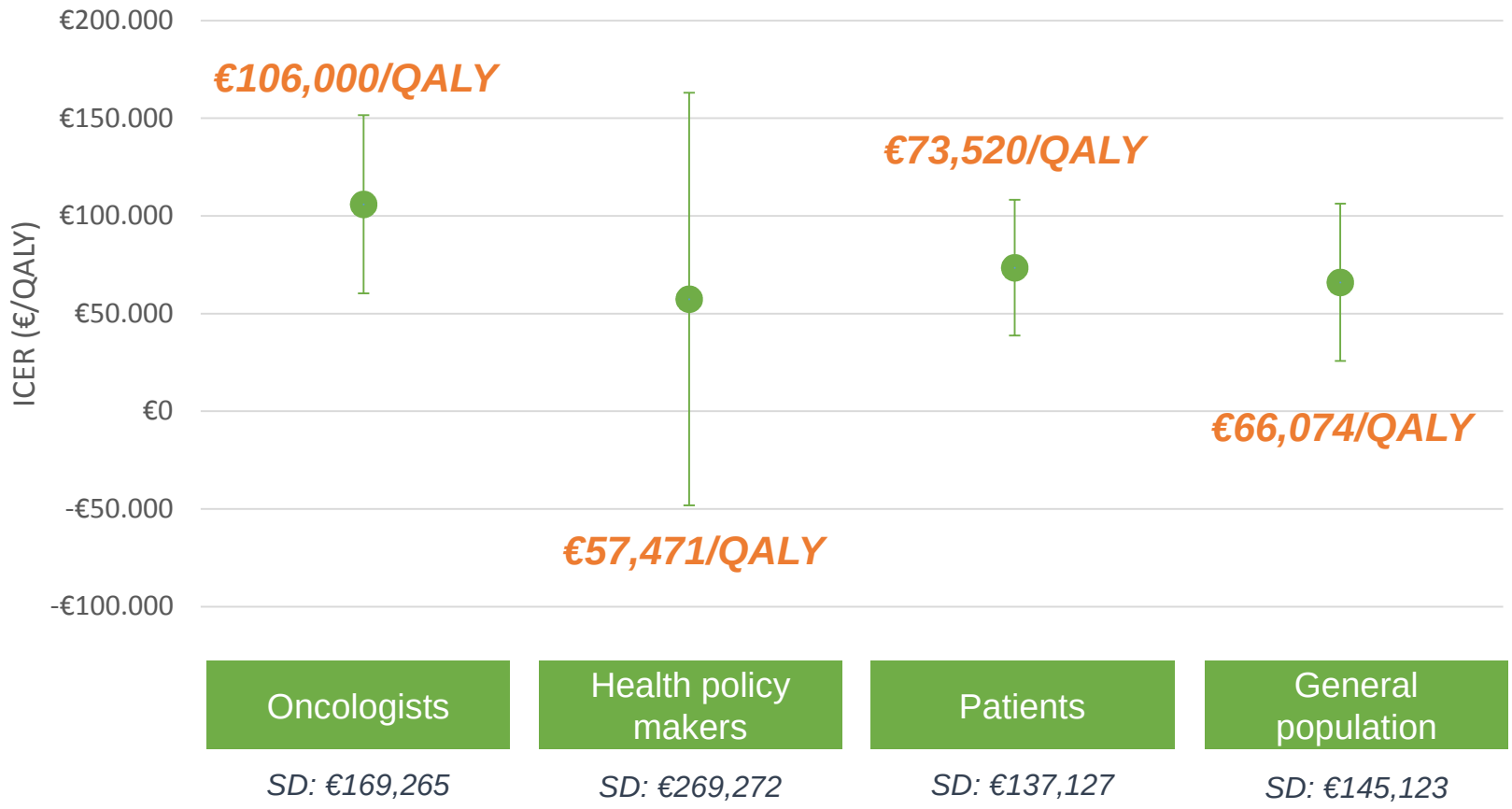


Mean survival benefit (months)

RESULTS

Life prolonging

$$\text{ICER} = \frac{\Delta\ cost\ of\ drug\ x\ 12}{Number\ of\ months\ of\ additional\ survival}$$

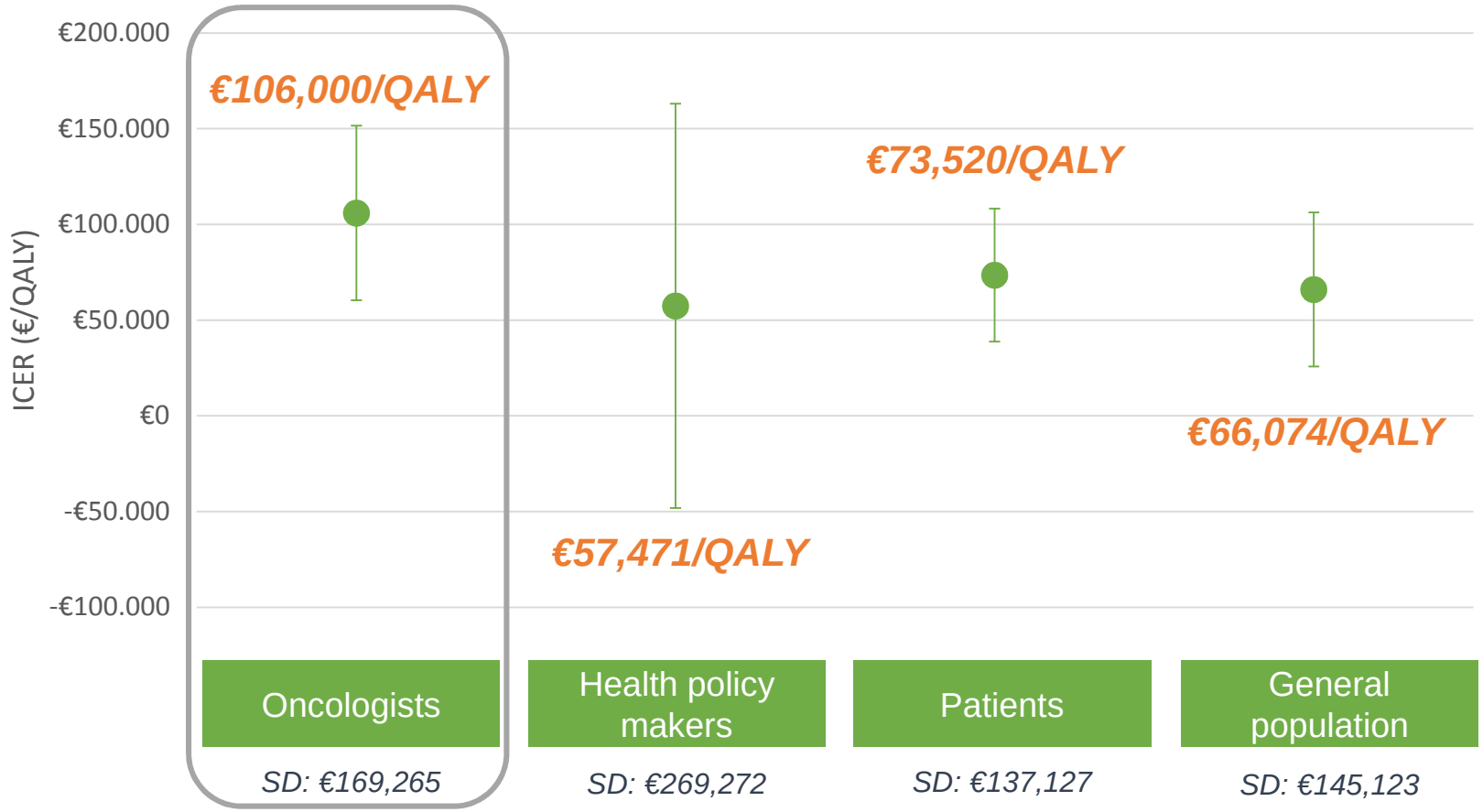


RESULTS

Life prolonging

$$\text{ICER} = \frac{\Delta\ cost\ of\ drug\ x\ 12}{Number\ of\ months\ of\ additional\ survival}$$

Oncologists were the ones that valued the most the gains in survival

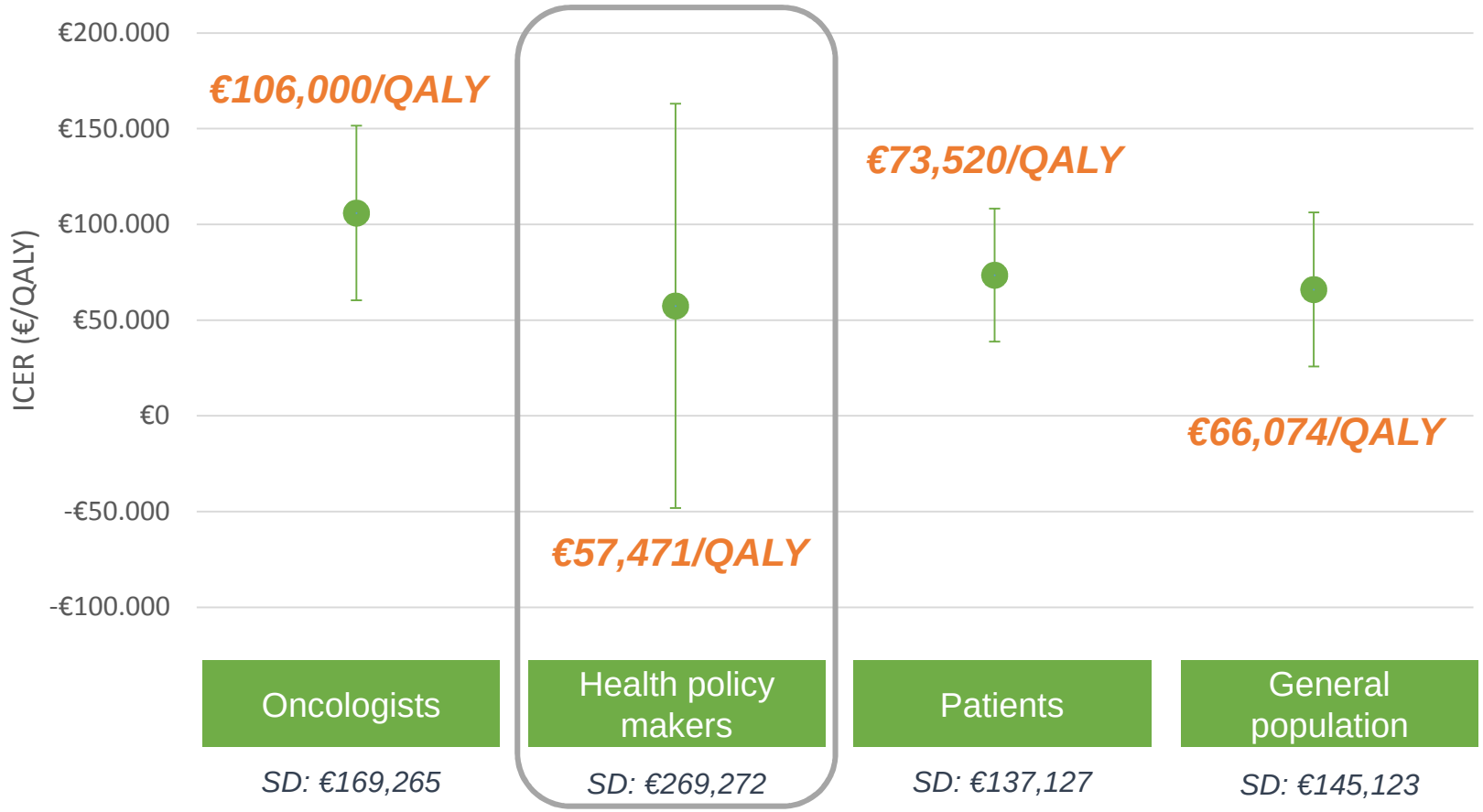


RESULTS

Life prolonging

$$\text{ICER} = \frac{\Delta\ cost\ of\ drug\ x\ 12}{Number\ of\ months\ of\ additional\ survival}$$

Health policy makers were less prone to pay for survival gains



RESULTS

Quality of life-enhancing

Indicate the additional cost that the new treatment should have in order to be funded by the National Health System.

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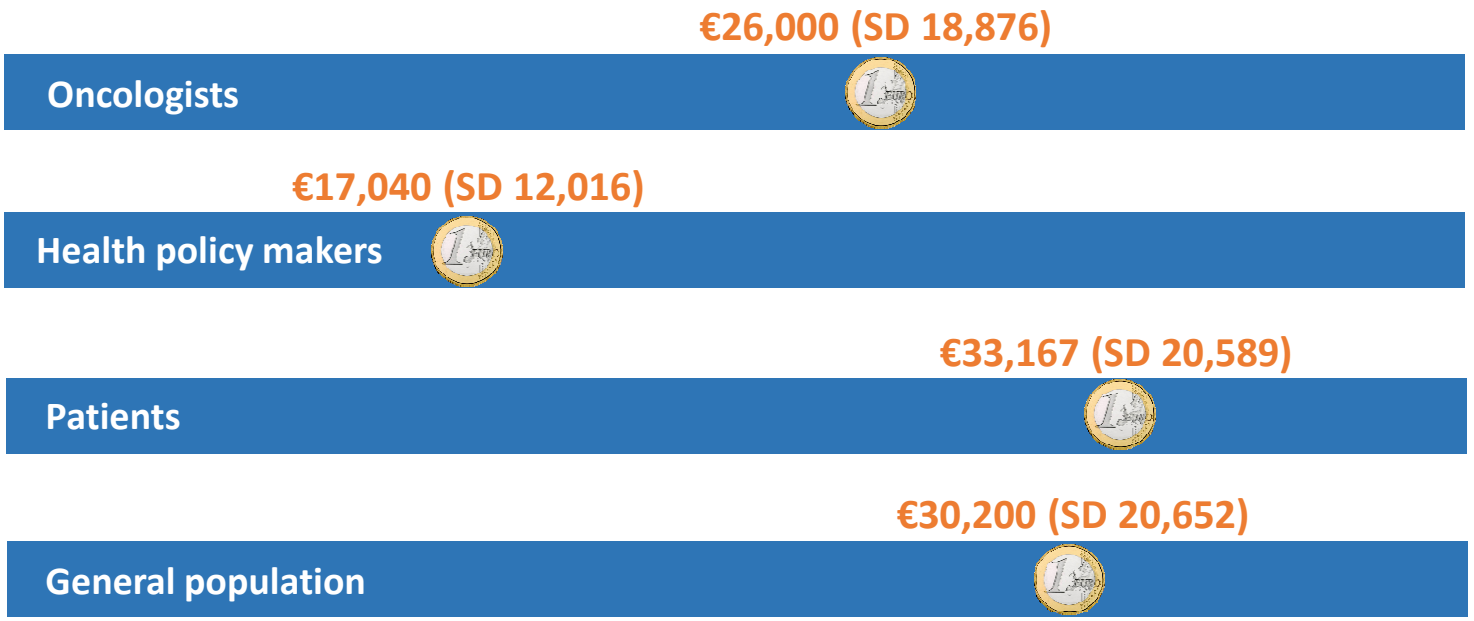
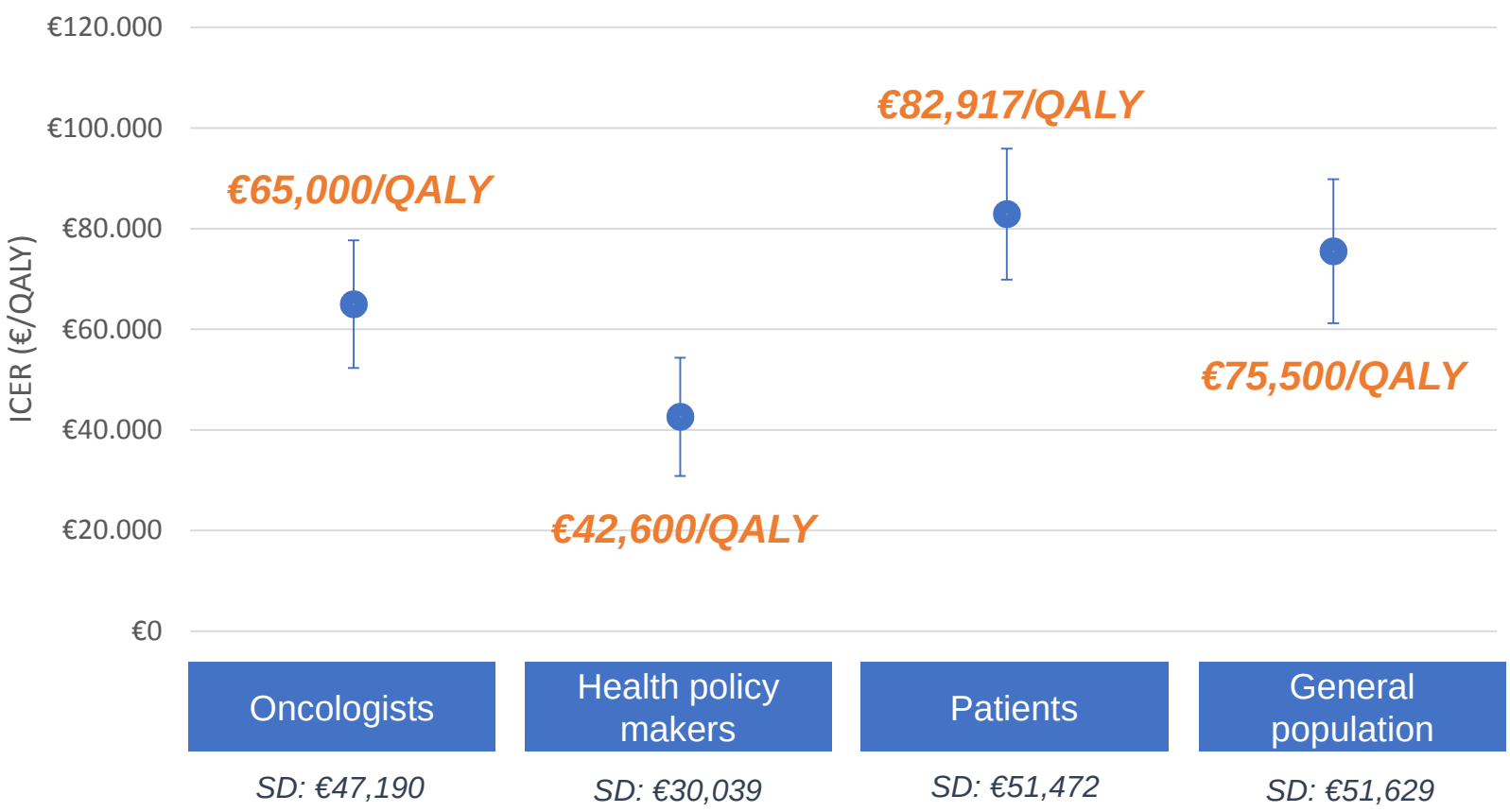


RESULTS

Quality of life-enhancing

$$\text{ICER} = \frac{\Delta\, cost\ of\ drug}{\Delta\, QALY}$$

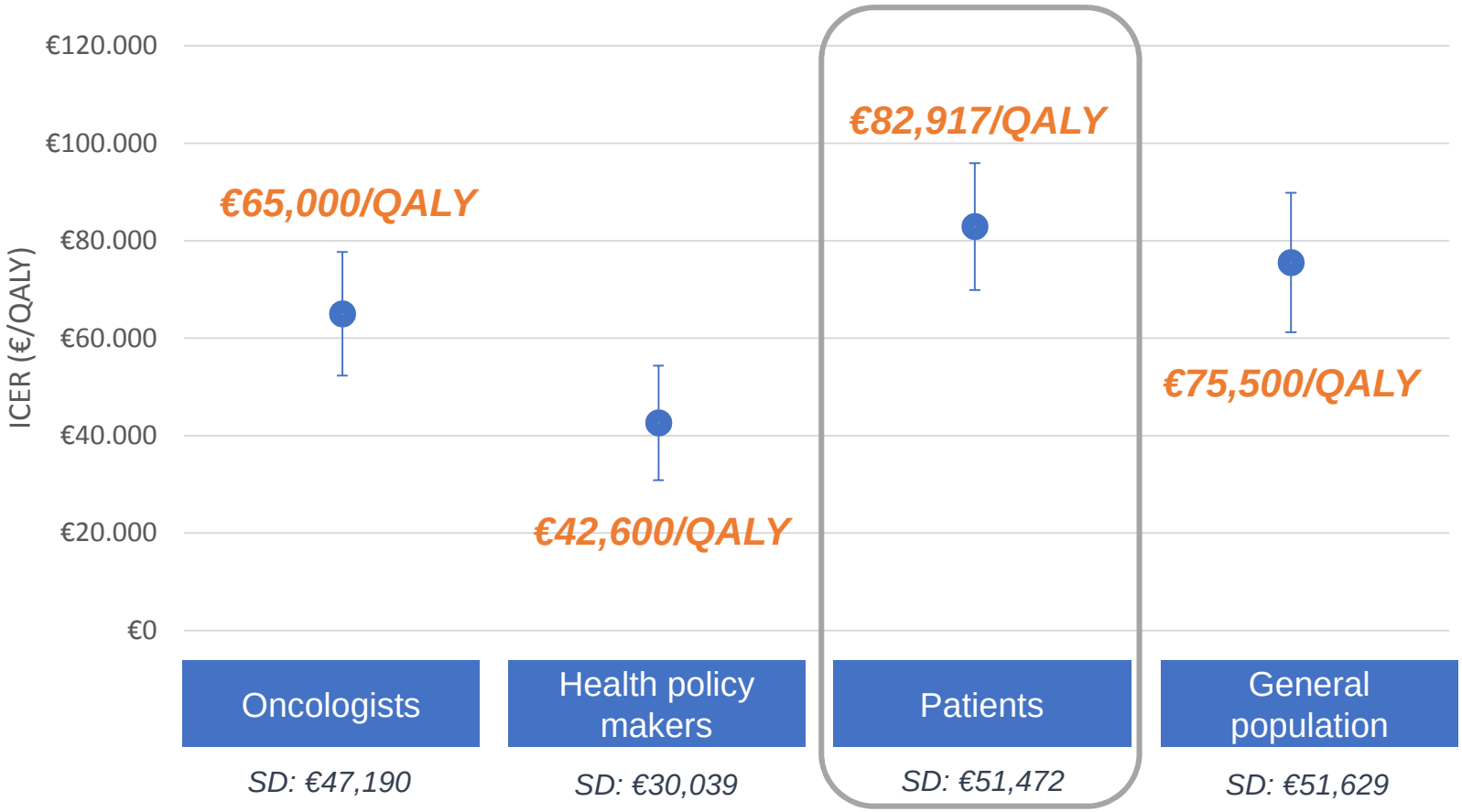


RESULTS

Quality of life-enhancing

$$\text{ICER} = \frac{\Delta\, cost\ of\ drug}{\Delta\, QALY}$$

Patients assigned a higher value for money to the treatment that enhanced the quality of life

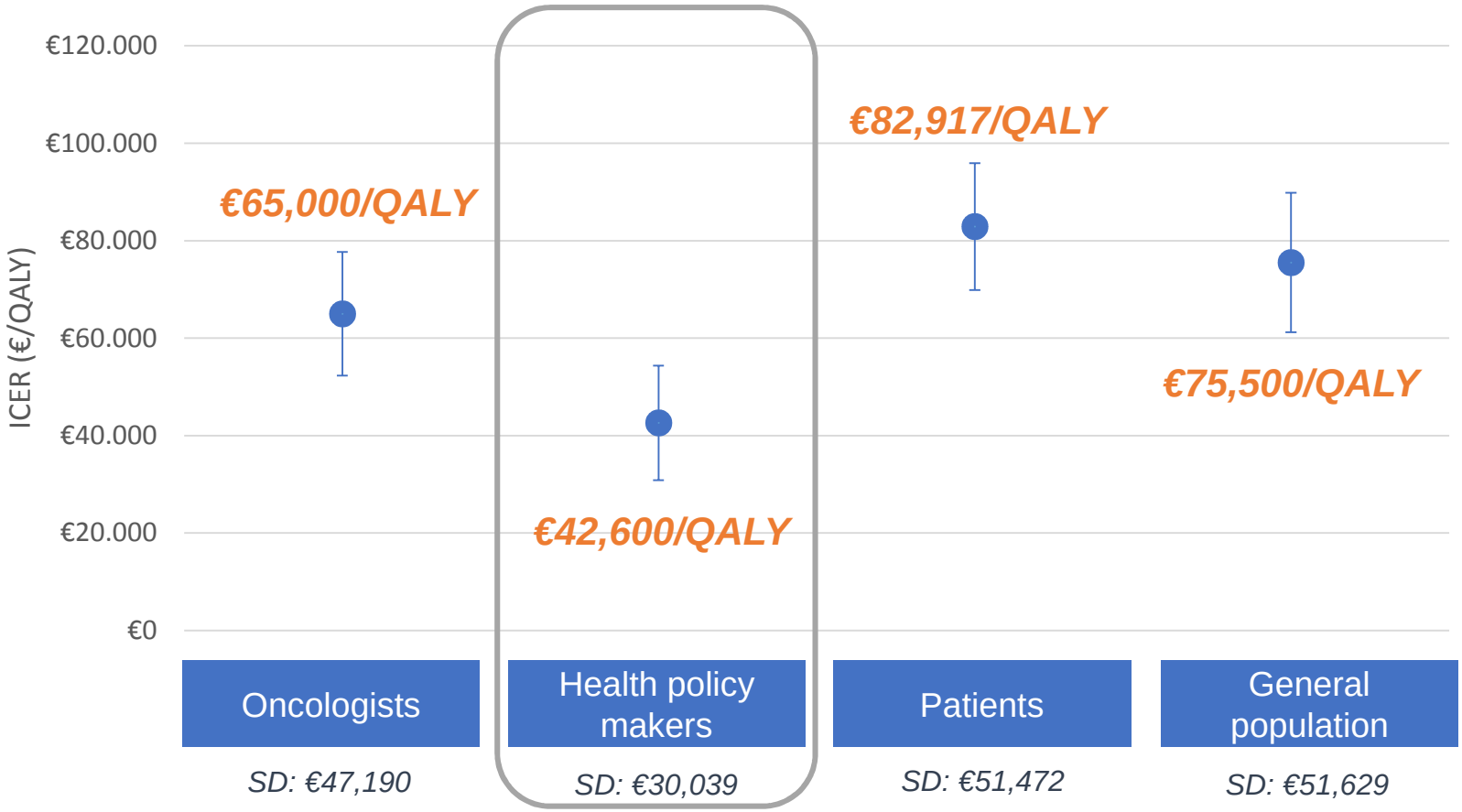


RESULTS

Quality of life-enhancing

$$\text{ICER} = \frac{\Delta\ cost\ of\ drug}{\Delta\ QALY}$$

Health policy makers were less prone to pay for improvements on quality of life



Conclusions

1. This study explored the **implicit ICER suggested by oncologists, health policy makers, patients and general population** attributable to new treatments for cancer.

2. The greater ICERs obtained may indicate that **actual reimbursement and access decisions may not be properly reflecting the society's willingness to pay** for health benefits.

3. **Oncologists** and **health policy makers** placed **higher value per QALY on survival gains** versus quality of life improvements.

4. **Patients** and **general population valued the most an improvement in the quality of life** than a survival gain.

5. **Health policy makers were less willing to pay for therapeutic improvements** compared to the rest of the participants.

Thank you for your attention

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