Avons nous les moyens de nous payer l'immunothérapie?

» A. Vergnenègre, C Chouaïd

CHU Limoges

U707

Liens d'intérêt

Participation à des boards, Consultant, Voyages pour des congrès scientifiques, Actions de formation Subventions pour des essais cliniques

- Amgen
- Astra Zeneca
- BMS
- Boehringer
- Lilly
- MSD
- Roche
- Teva

Epidémiologie UE CBP

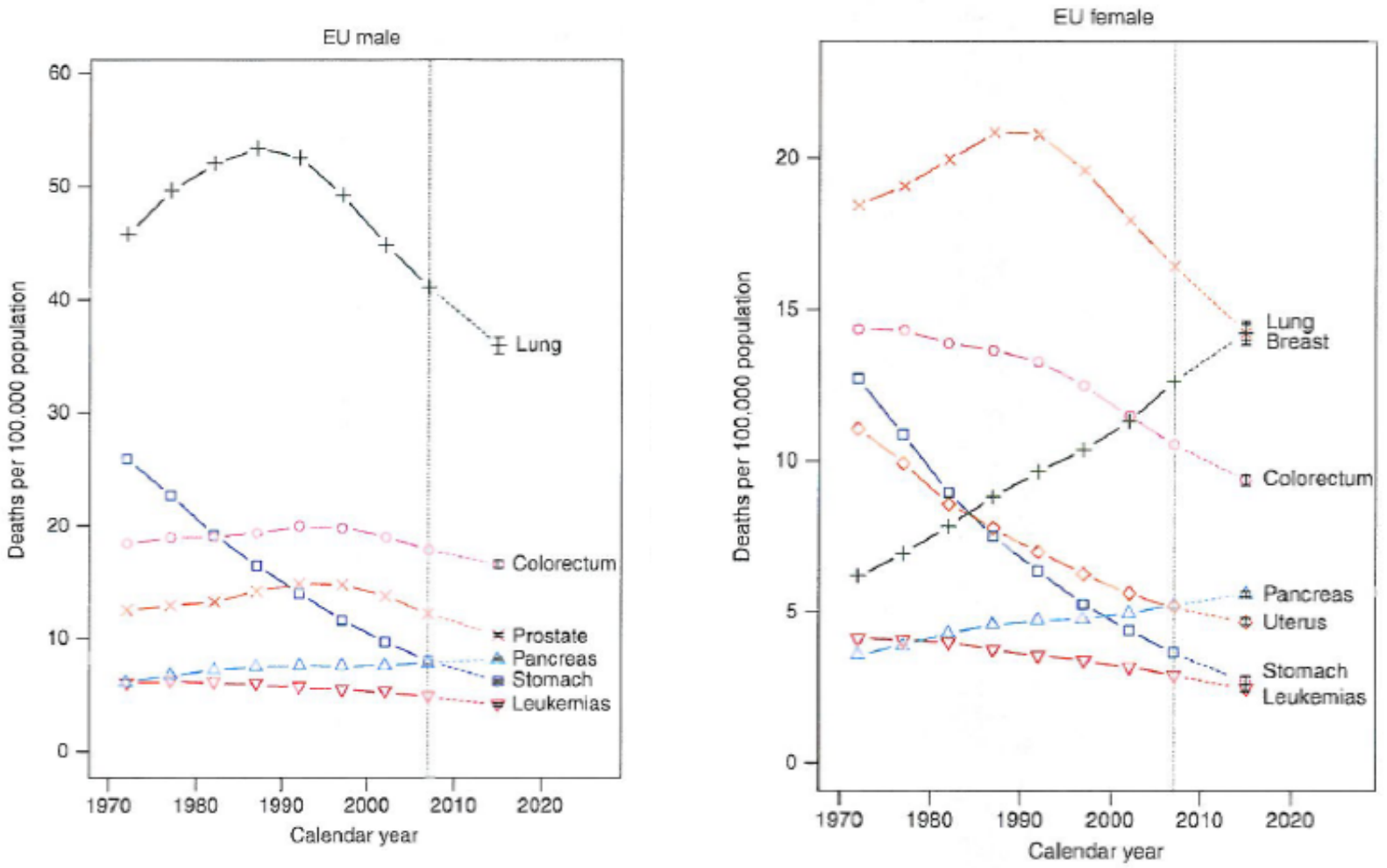
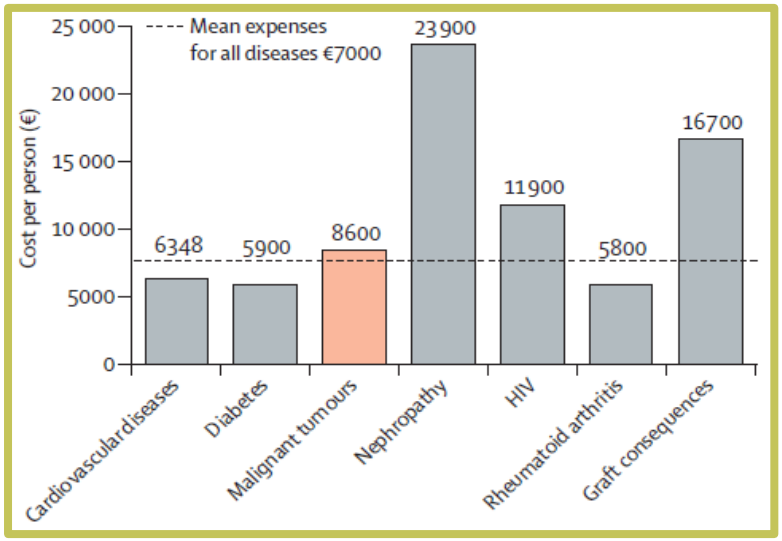
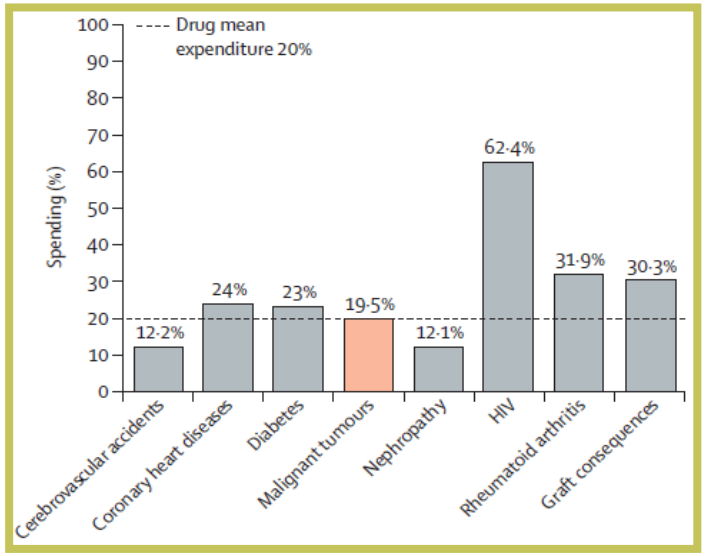


Figure 3. Age-standardised (world population) EU male and female cancer mortality rate trends in quinquennia from 1970–1974 to 2005–2009 and predicted rates for 2015 with 95% prediction intervals (PIs). Men: stomach (squares), colorectum (circles), pancreas (triangles), lung (crosses), prostate (xs) and leukaemias (inverted triangles). Women: stomach (squares), colorectum (circles), pancreas (triangles), lung (crosses), breast (xs), uterus (diamonds) and leukaemias (inverted triangles).

Le contexte



Le coût du cancer en France

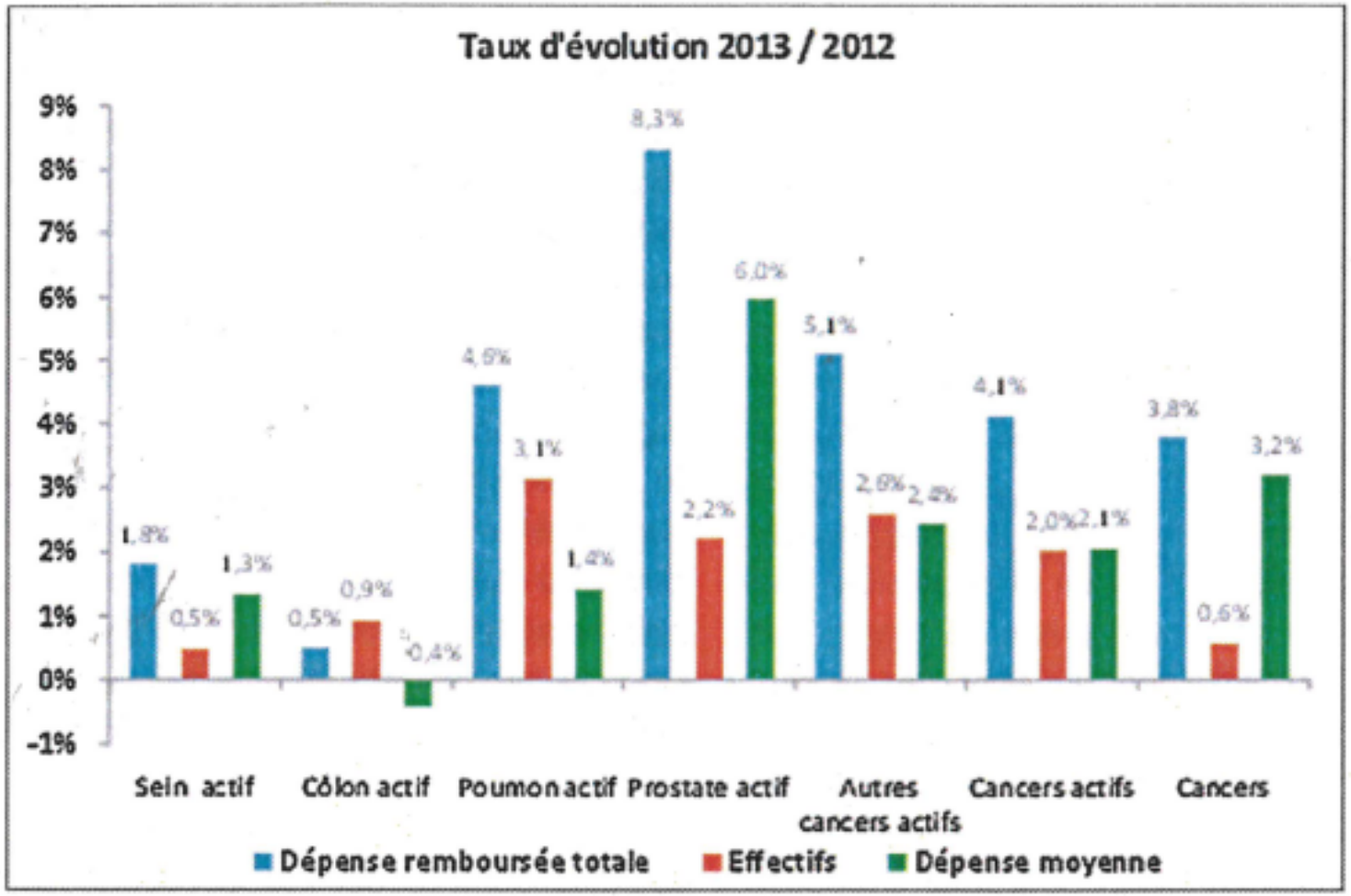


La part des médicaments dans le coût
des maladies chroniques en France

The Lancet Oncology Commission 2014

FIGURE 2

Évolution des dépenses attribuables au cancer et des effectifs (2012-2013 et 2013-2014), selon le type de cancer, pour les bénéficiaires du régime général d'assurance maladie



Tuppin et al , Bull Cancer 2017;104:524-37

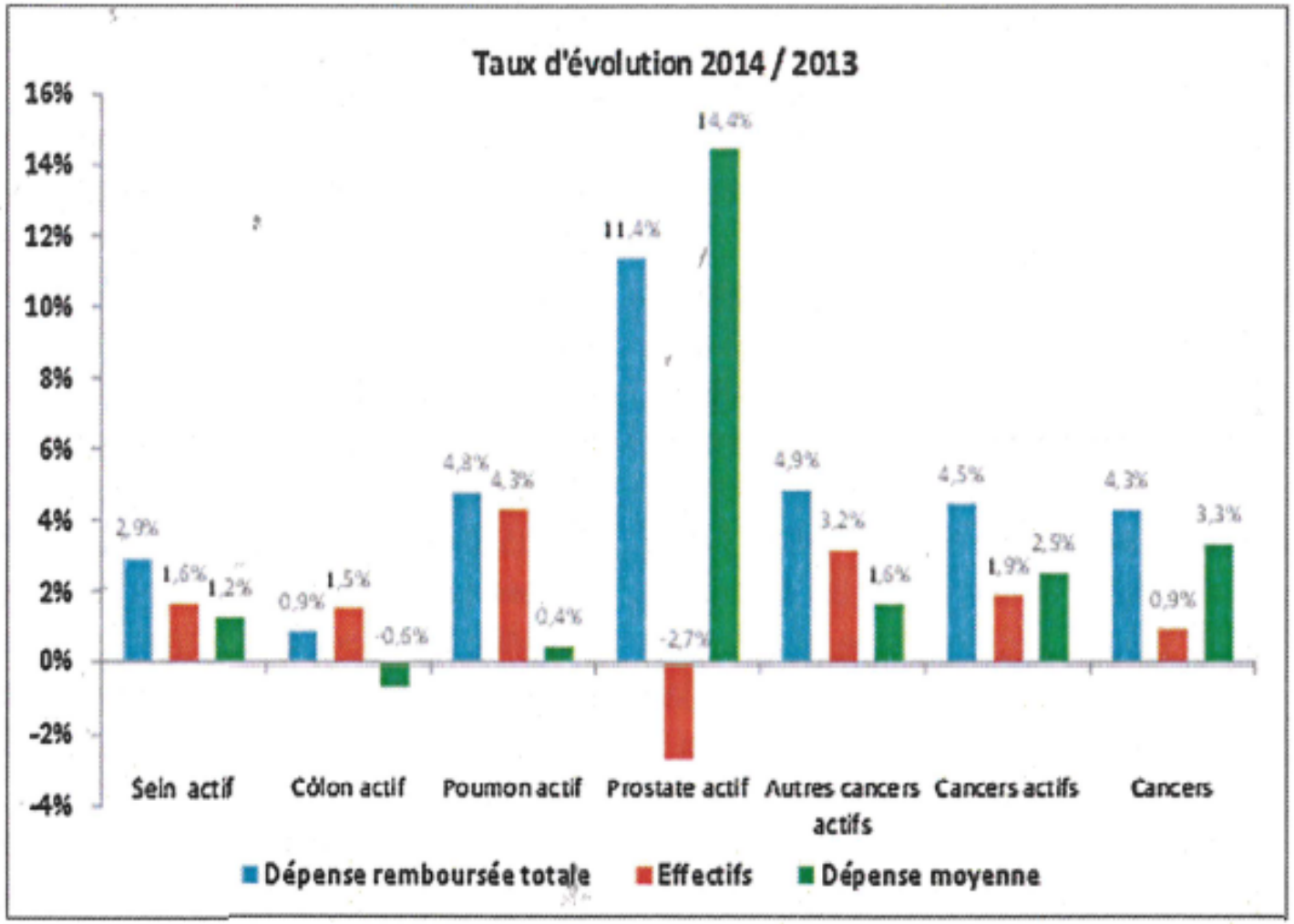


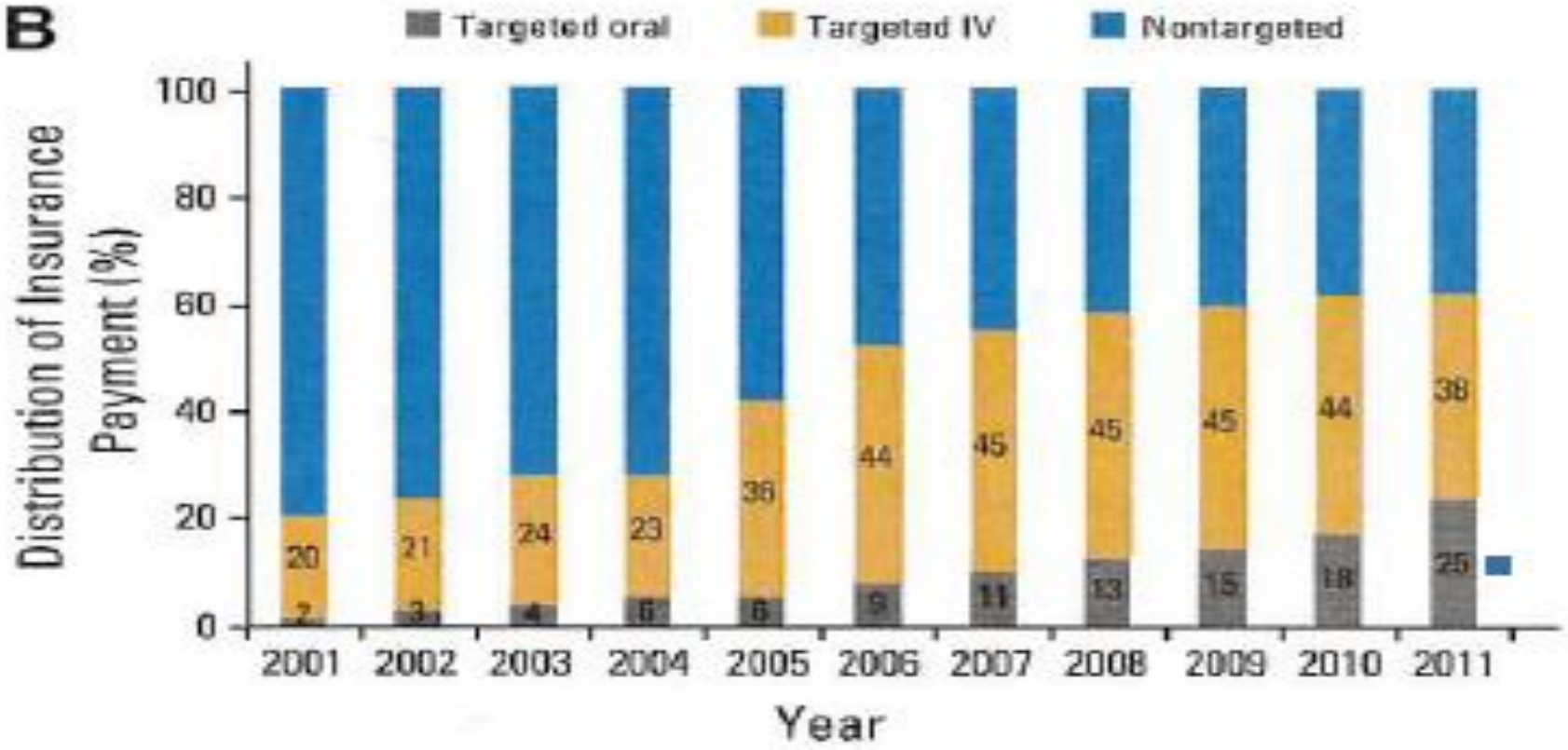
FIGURE 2

Évolution des dépenses attribuables au cancer et des effectifs (2012-2013 et 2013-2014), selon le type de cancer, pour les bénéficiaires du régime général d'assurance maladie

Tuppin et al , Bull Cancer 2017;104:524-37

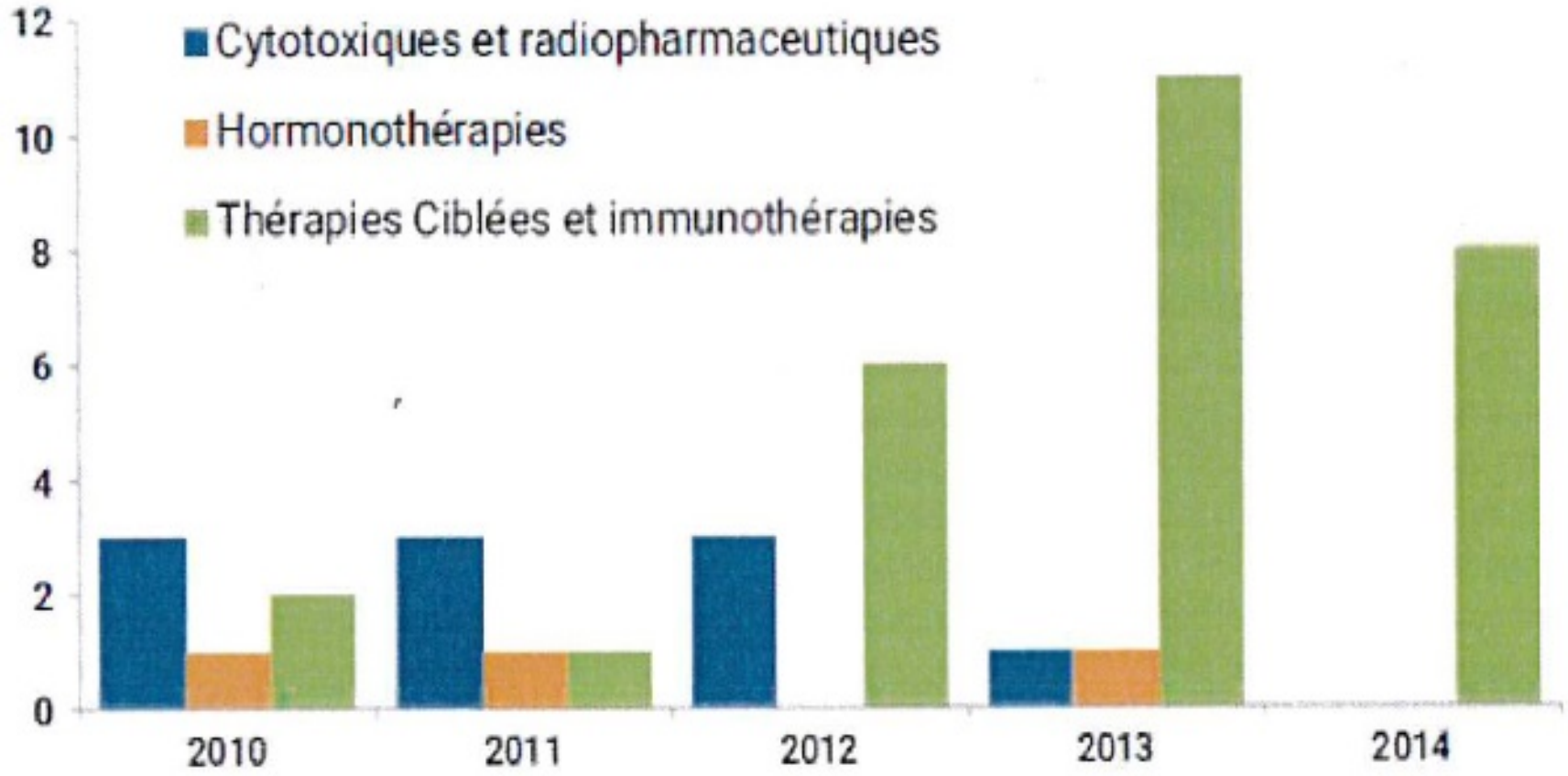
Les innovations thérapeutiques

- Distribution of (A) patients and (B) insurance payments by type of chemotherapy agent from 2001 to 2011. Analysis conducted using life-link health plan claims database from January 2001 to september 2011. IV,intravenous.



Shih, JCO 2015:19:2190-6

Figure : classes des molécules mises sur le marché pour la première fois sur la période 2010-2014.



Source : INCa (la chimiothérapie orale du cancer en 2014 – note d'analyse, décembre 2015).

Accessibilité des nouvelles drogues en Europe

LUNG CANCER : Formulary and cost				
Country:	Erlotinib	Gefitinib	Afatinib	Crizotinib
Austria				
Belgium				
Cyprus				
Denmark				
Finland				
France				
Germany				
Greece				
Holland				
Iceland				
Ireland				
Israel				
Italy				
Luxembourg				
Norway				
Portugal				
Spain				
Sweden				
Switzerland				
Turkey				
United Kingdom				

	Free
	<25% cost
	25–50% cost
	Discount >50% and <100%
	Full cost
	Not available
	Missing data

Cherny et al, Ann Oncol 2016;27:1423-43

L'accès au marché du médicament
En 2015

AMM

Rapport bénéfice/risque

CHMP (EMA)
Commission d'AMM
(ANSM)

Avis de Transparence

ASMR
SMR

Commission de la Transparence
(HAS)

Evaluation médico-économique

Avis

CEESP
(HAS)

Nouveauté

Accord conventionnel

Prix

CEPS
(Interministériel, payeurs)

JO

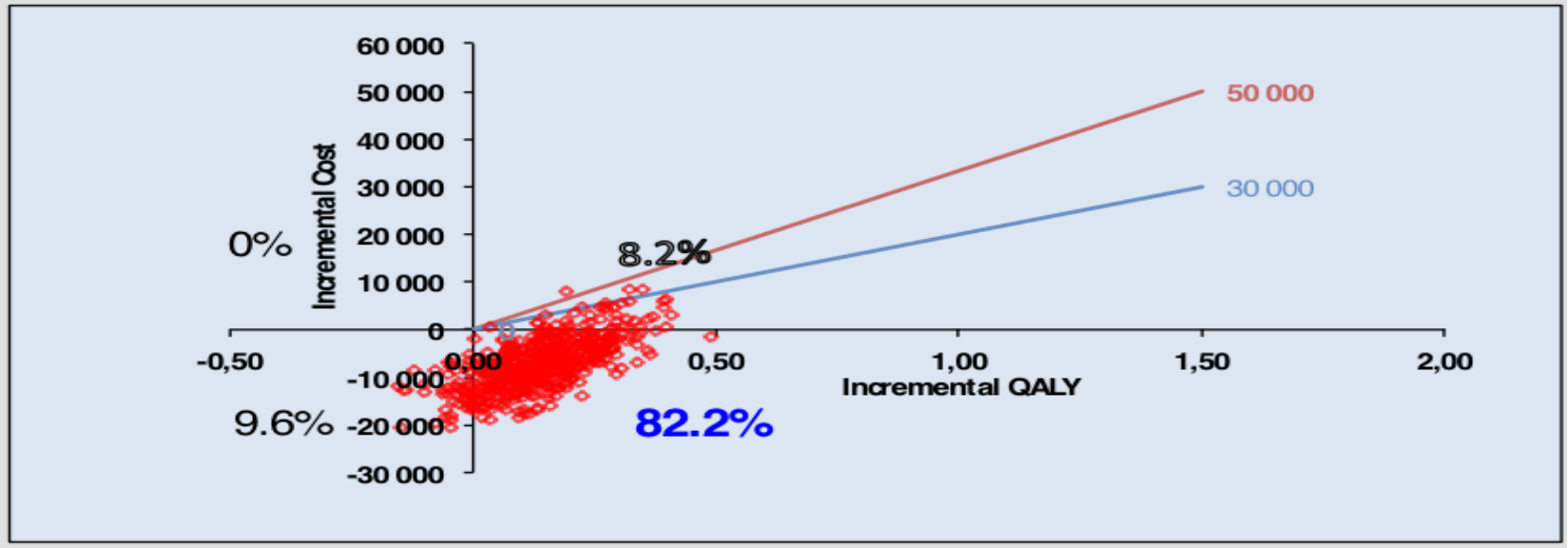
Ins. Sec. Soc / Coll
Prix & Tx de rbt

Ministère de la Santé
(DSS, CEPS, UNCAM)

Incremental cost/utility ratio according to the 3 countries

	France	Italy	Spain
Cost difference	-9,498	-7,806	-7,466
Utility difference	0,117	0,117	0,117
ICER	negative	negative	negative

Results: scatter plot of ICER, probability to be under € 30000 = 90,2%



erlotinib *versus* chemo first line

Corrélation bénéfices, autorisations, prix des drogues en cancérologie

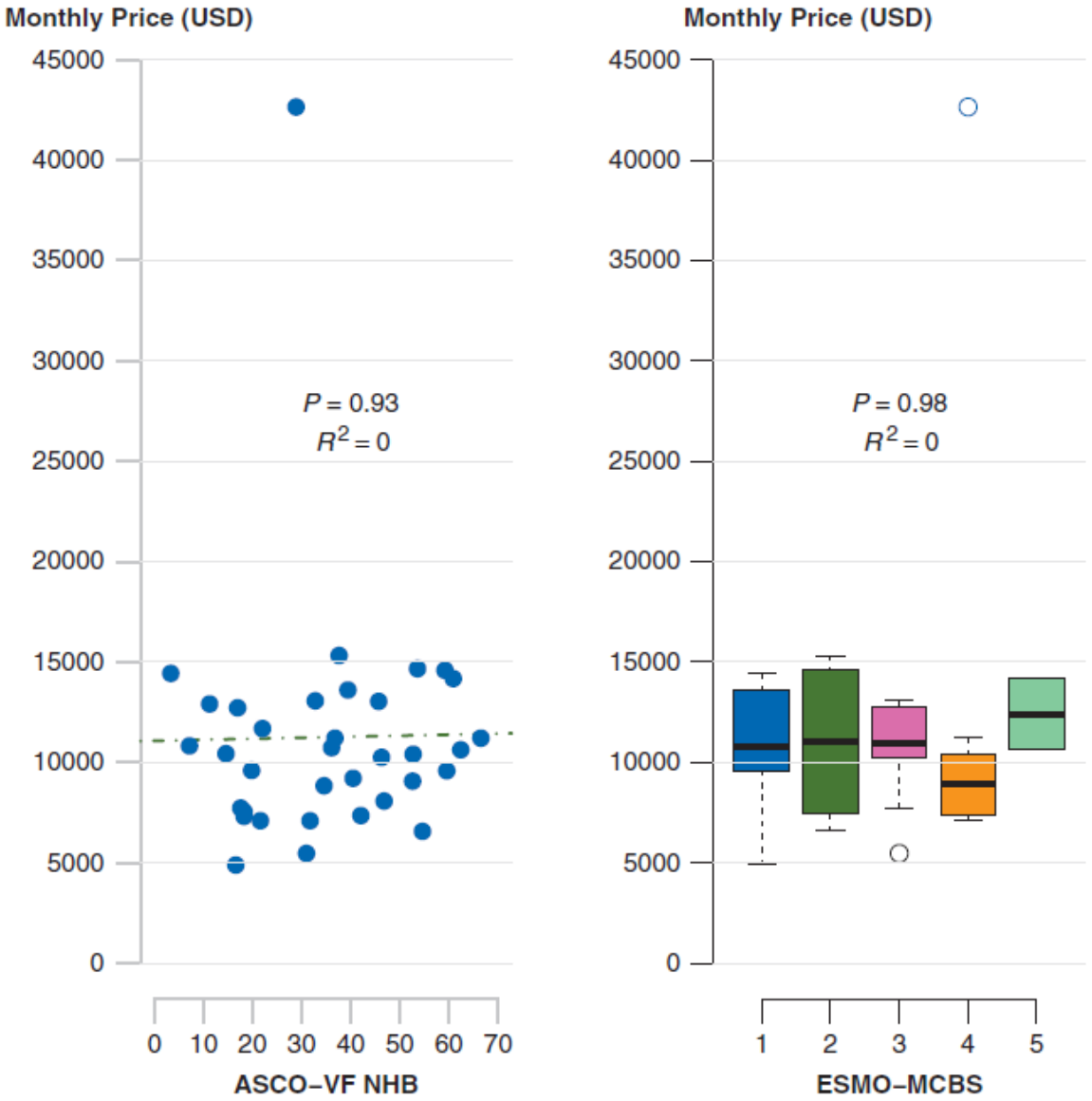
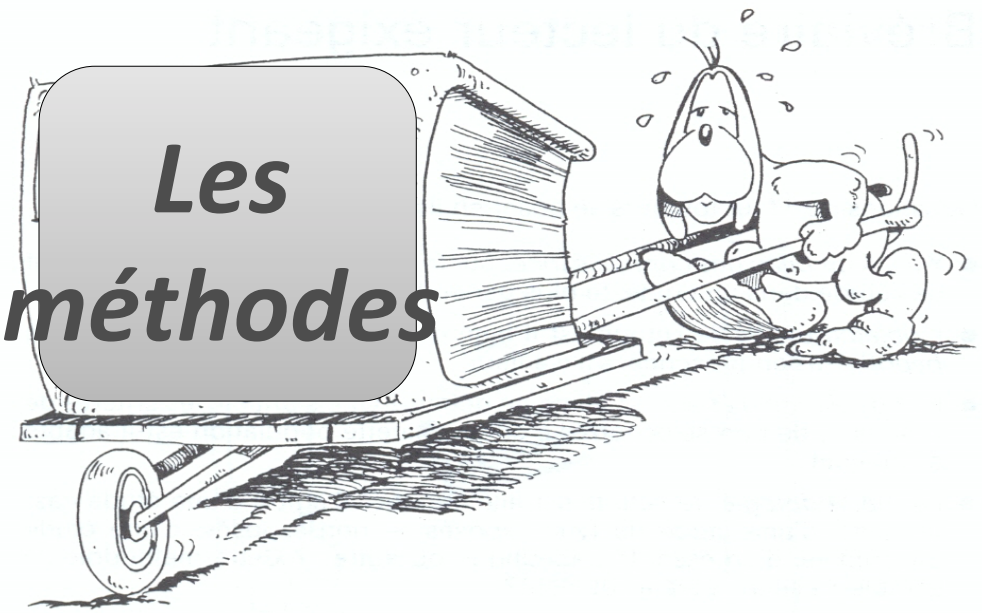


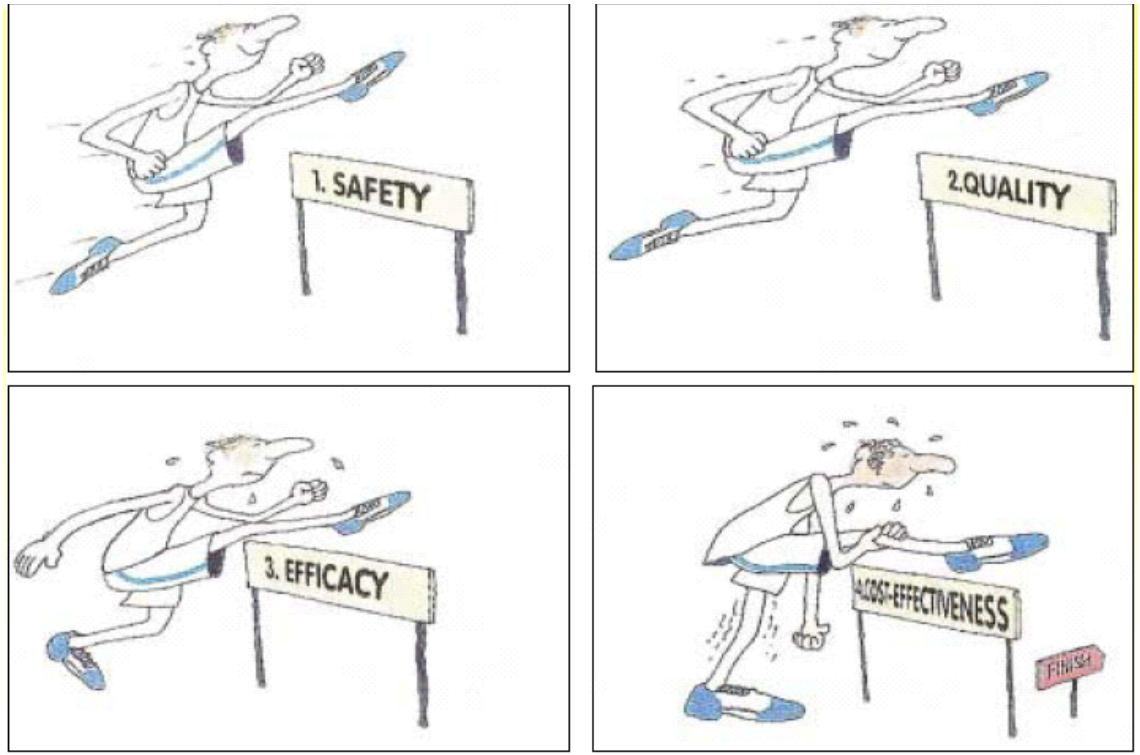
Figure 2. Relationship between the clinical benefit of the 37 anticancer drugs approved by the FDA from 2000 to 2015 as evaluated by the 2016 update of the ASCO-VF NHB and the ESMO-MCBS and the price according to US Medicare (data on prices retrieved from DrugAbascus).

Vivot et al, Ann Oncol 2017;28:1111-6

Pharmaco-économie

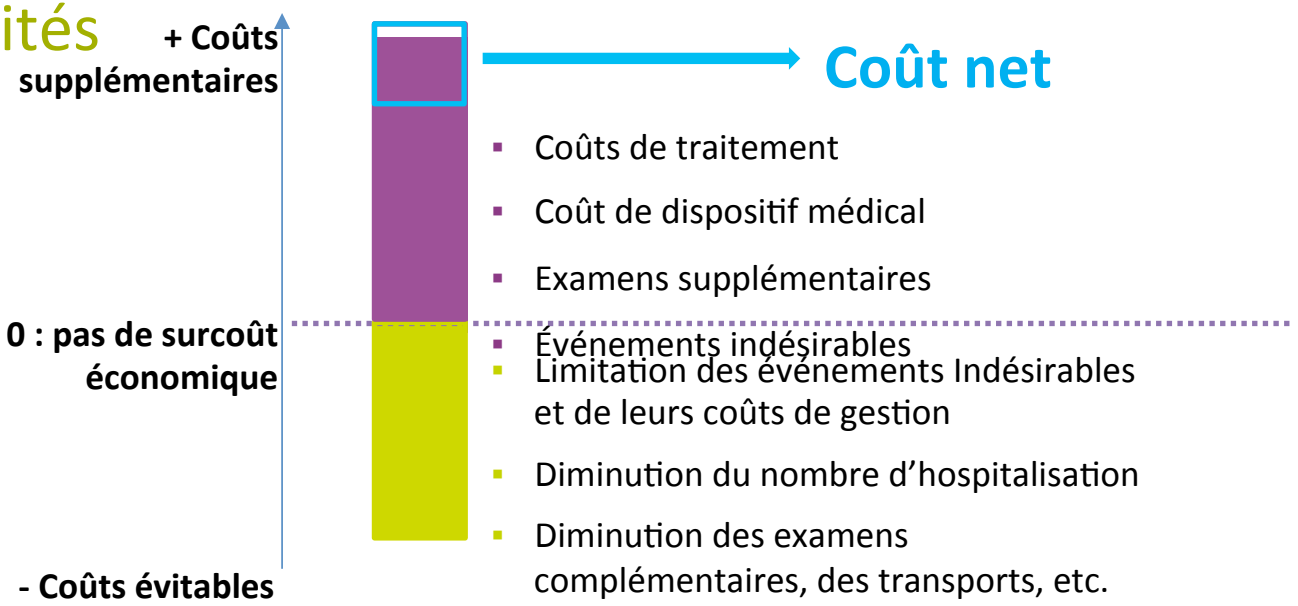


Décision médicale

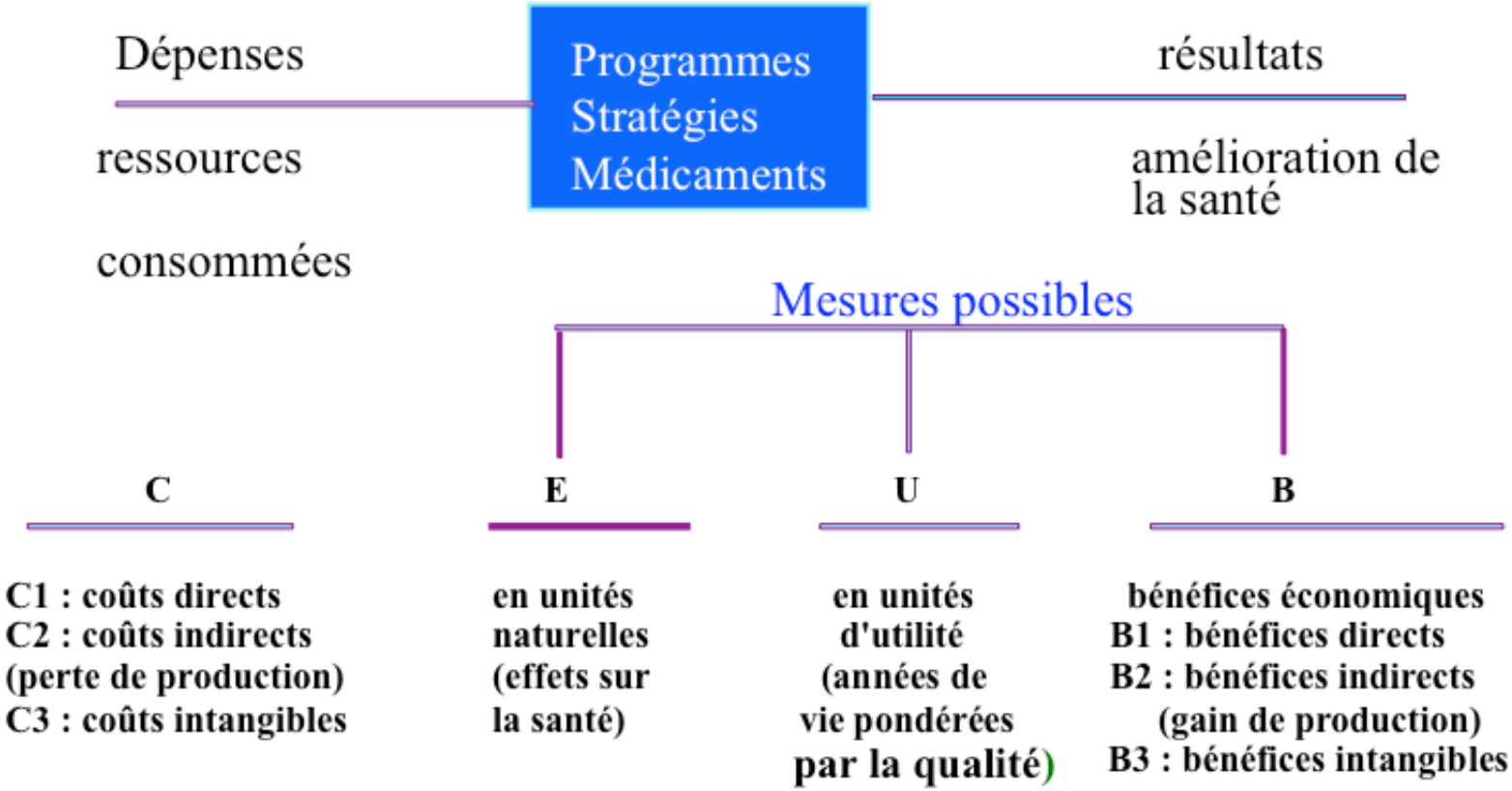


Raisonnement en coût net

Approche en coût net = coûts supplémentaires – coûts évités

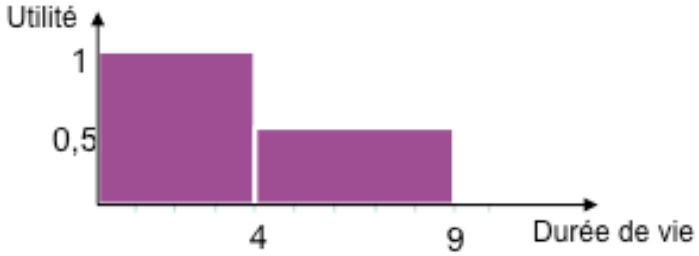


Les différentes techniques de coût efficacité

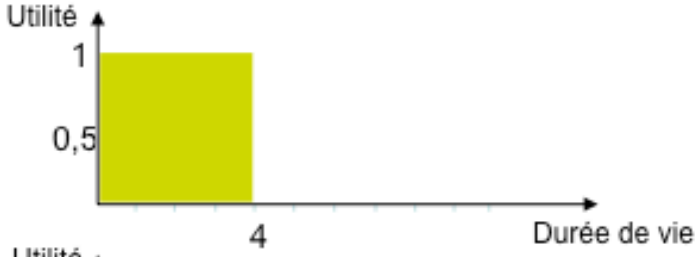


Qu'est-ce qu'un Qaly?

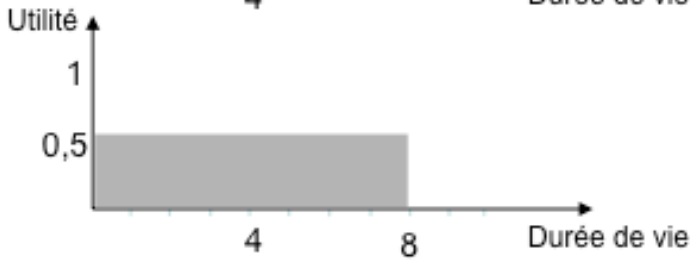
- Le but des QALYs est d'évaluer non seulement la durée de vie mais aussi sa qualité.
- Dans le calcul du QALY, la qualité de vie vaut autant que la quantité de vie.



Ici le patient vit durant 9 ans en pleine santé, puis subit un événement qui altère fortement sa qualité de vie. Il meurt la 9e année.
Calcul du nombre de QALYs :
4 x 1 + (0,5 x 5) = 6,5



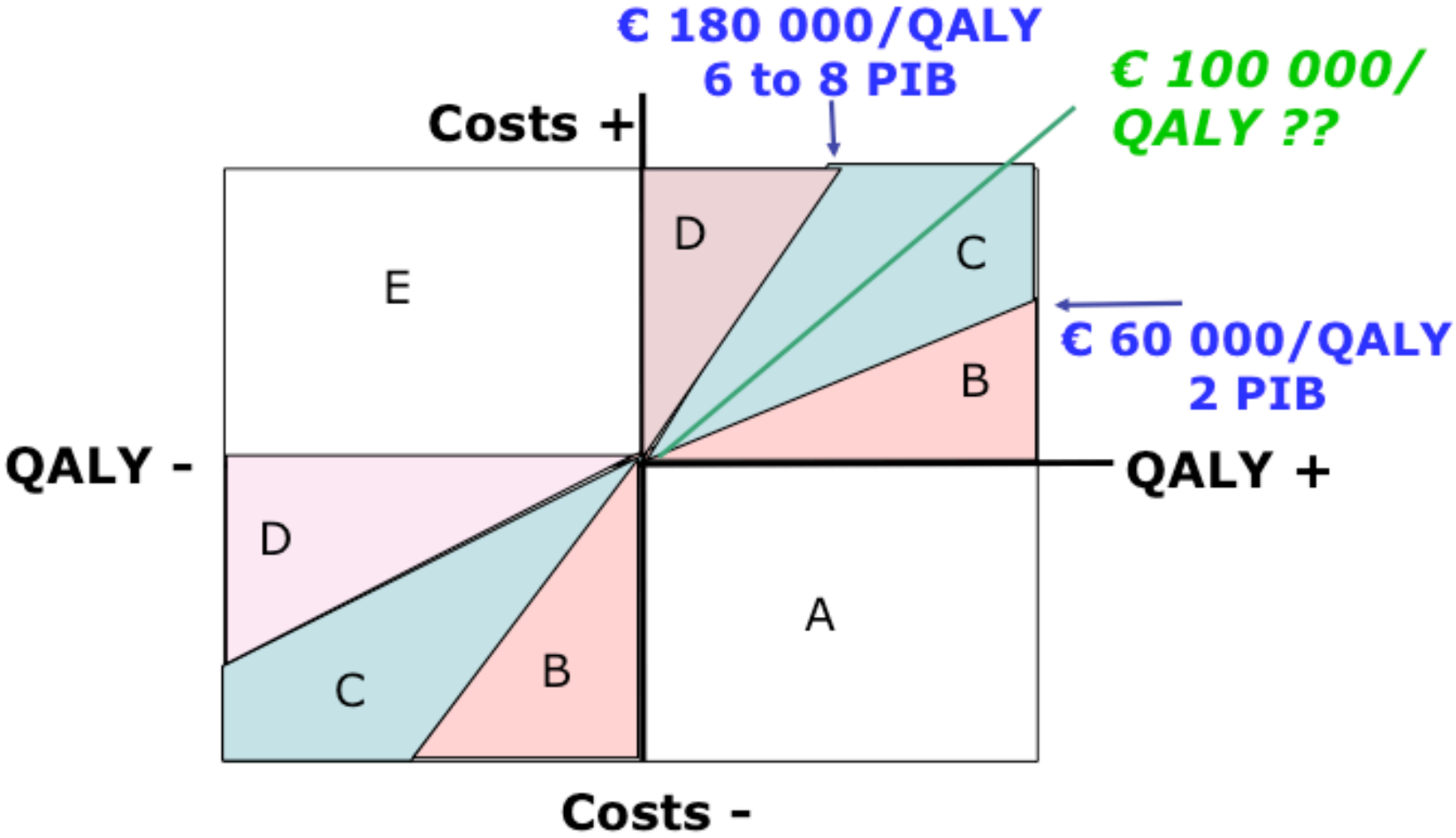
Le patient vit durant 8 ans en pleine santé puis meurt brusquement.
Calcul de nombre de QALYs :
4 x 1 = 4



Le patient vit durant 8 ans avec une qualité de vie dégradée puis meurt brusquement.
Calcul de nombre de QALYs :
8 x 0,5 = 4

1 QALY = 1 année de vie en parfaite santé

Quels seuils pour une analyse coûts/Qaly en France?



Interprétation de la mesure entre 2 stratégies ou traitements :
A : plus efficace et moins chère ; B : forte préférence ; C : préférence modeste ; D : faible préférence ; E : rejet (moins efficace et plus chère), adapté à la France avec un PIB/h de 32 700€

- Le [illegible]t en lui-même n’a pas d’effets adverses ma[illegible]le prix peut entraîner vertiges et syncope

Economie CBP immunottt

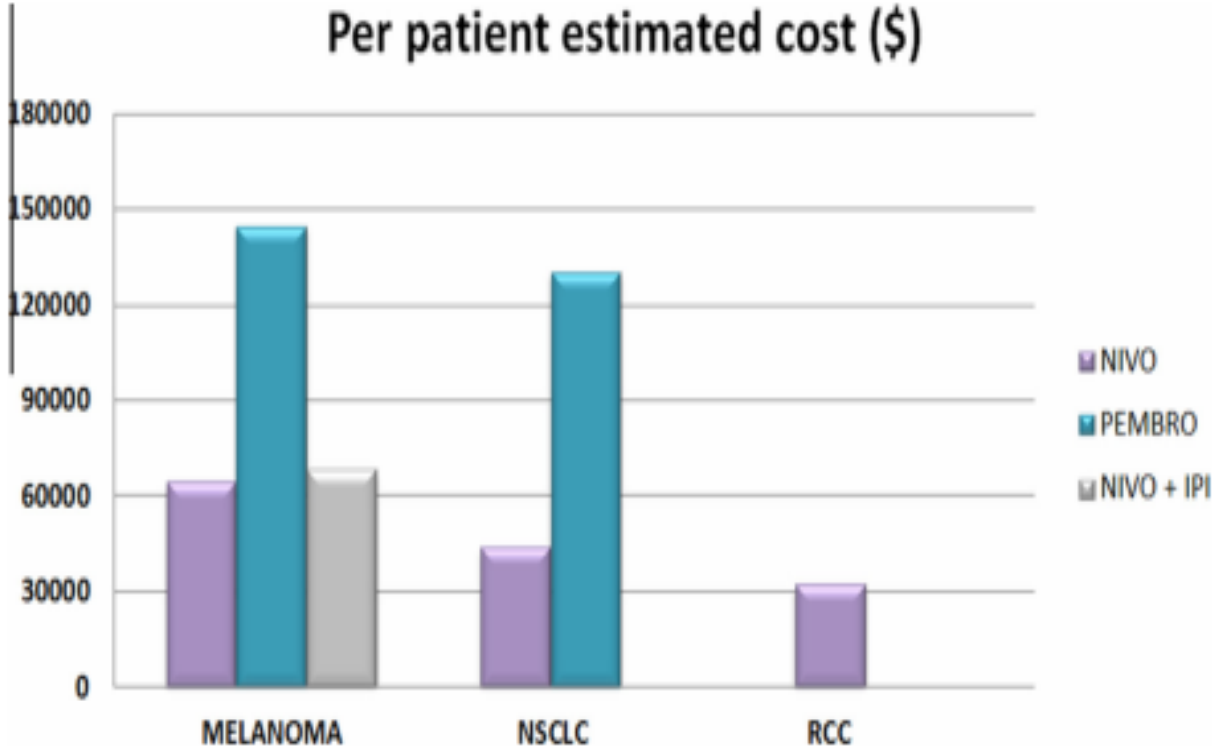


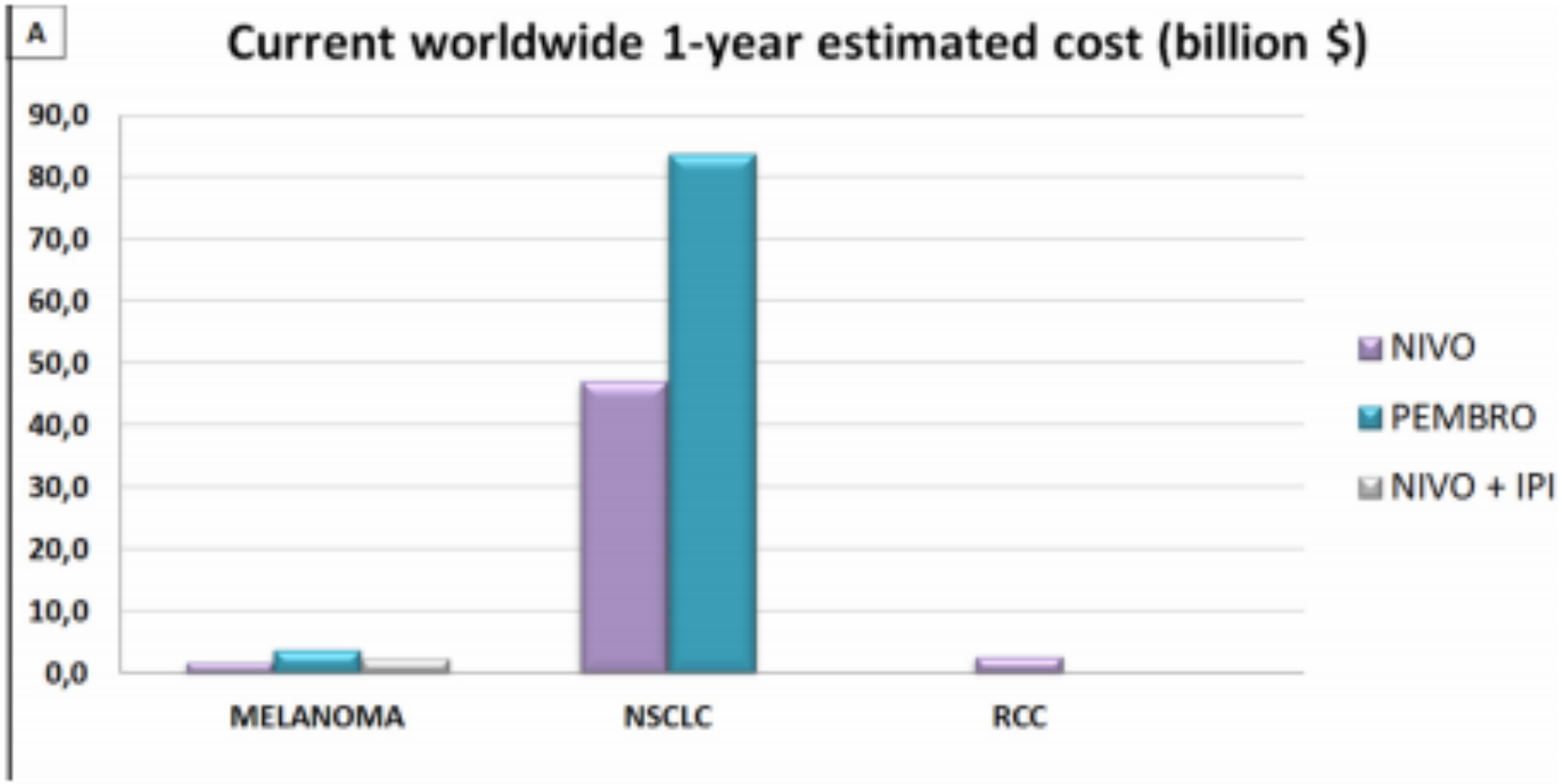
Fig. 1. Per patient estimated cost ($) of nivolumab and pembrolizumab for the treatment of patients with advanced melanoma, non-small cell lung cancer and renal cell carcinoma. IPI = ipilimumab; Nivo = nivolumab; Pembro = pembrolizumab; NSCLC = non-small cell lung cancer; RCC = renal cell carcinoma.

Université de Limoges

Tartari et al, 2016;48:20-24,

Economie CBP immunottt

F. Tartari et al./Cancer Treatment Reviews 48 (2016) 20–24



Tartari et al, 2016;48:20-24,

Economie CBP immunottt

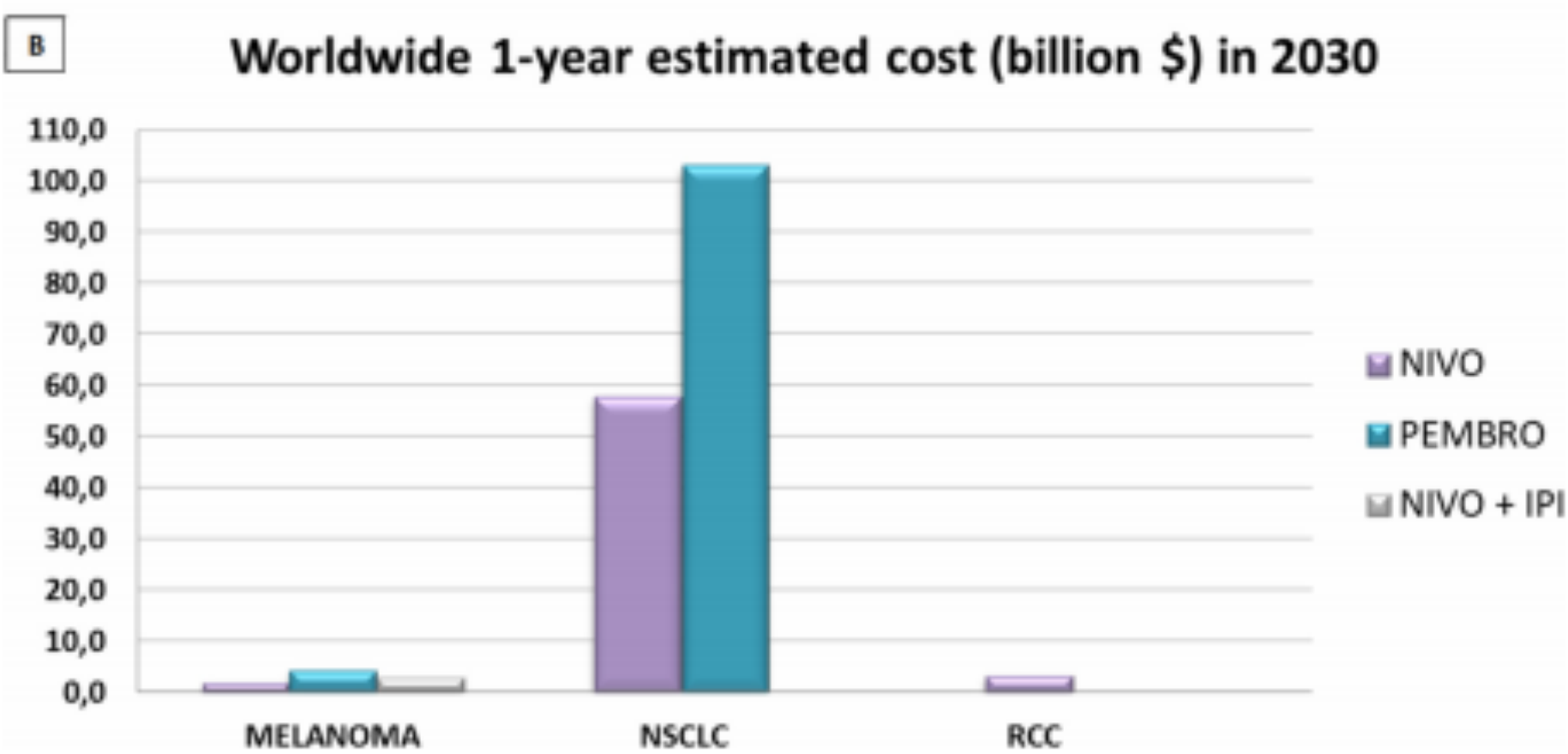


Fig. 2. Worldwide 1-year estimated cost (billion $) of nivolumab and pembrolizumab for the treatment of patients with advanced melanoma, non-small cell lung cancer and renal cell carcinoma according to WHO data for 2012 (A) and 2030 (B). IPI = ipilimumab; Nivo = nivolumab; Pembro = pembrolizumab; NSCLC = non-small cell lung cancer; RCC = renal cell carcinoma; WHO = World Health Organization.

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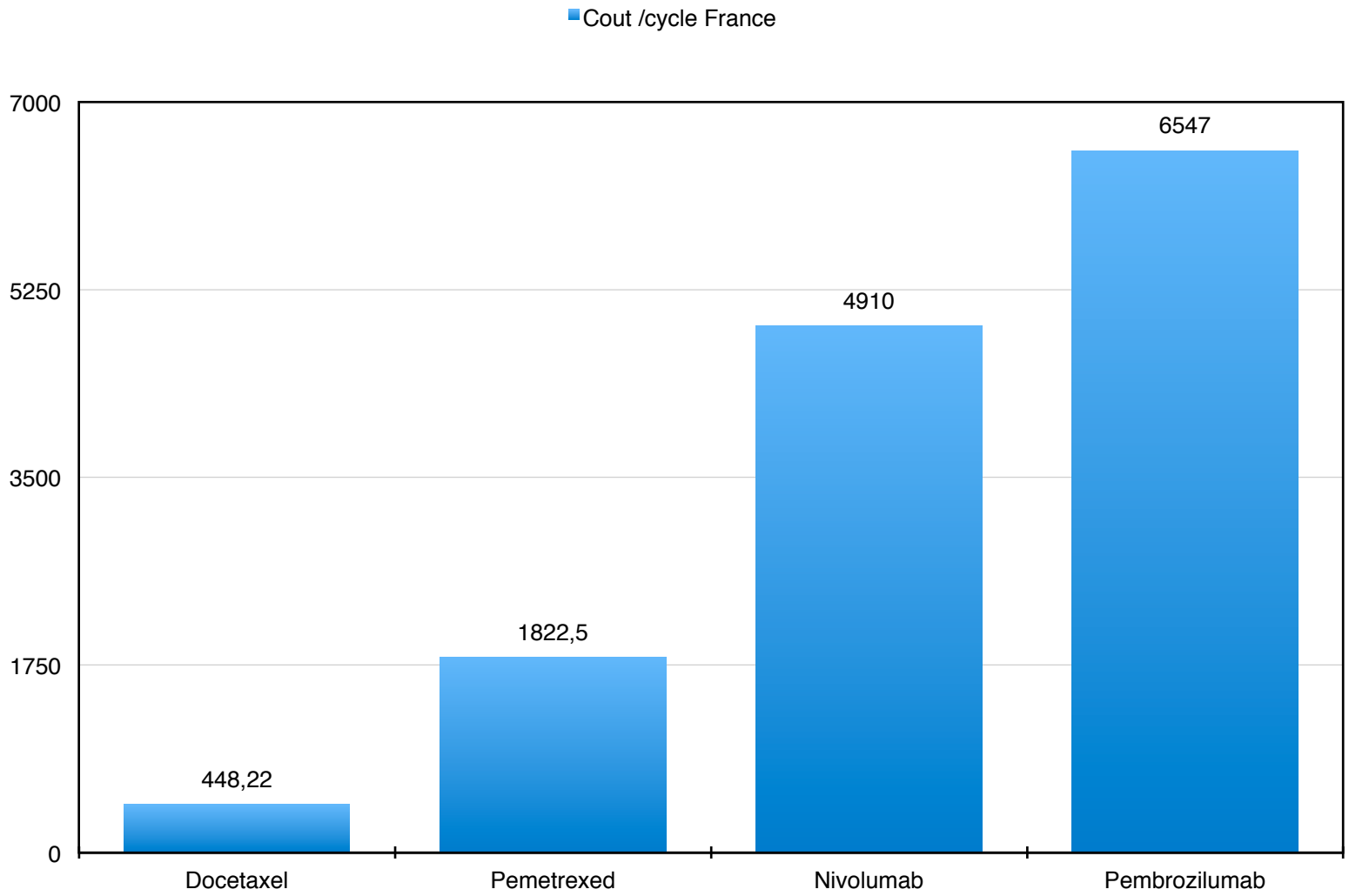
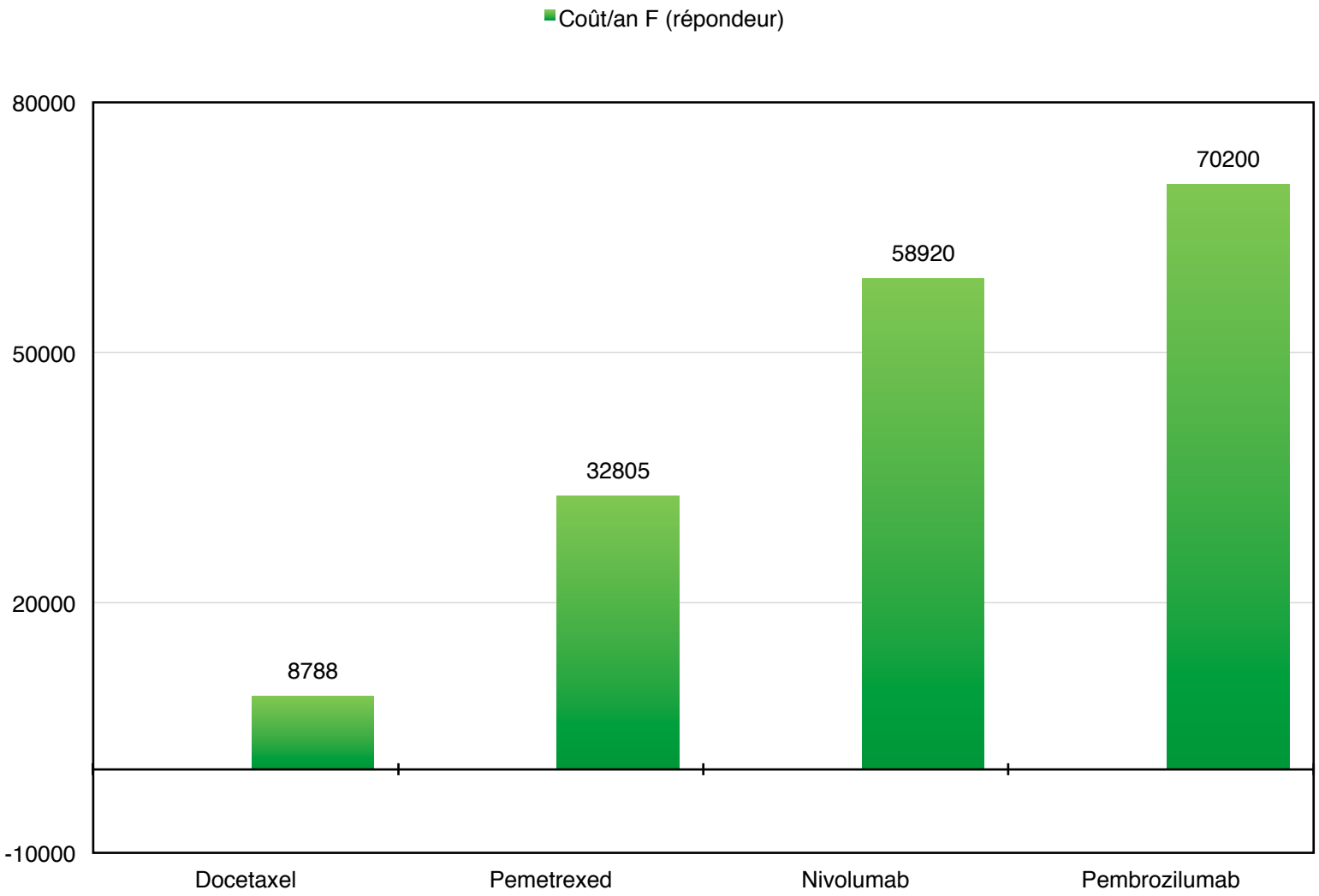
Tartari et al, 2016;48:20-24,

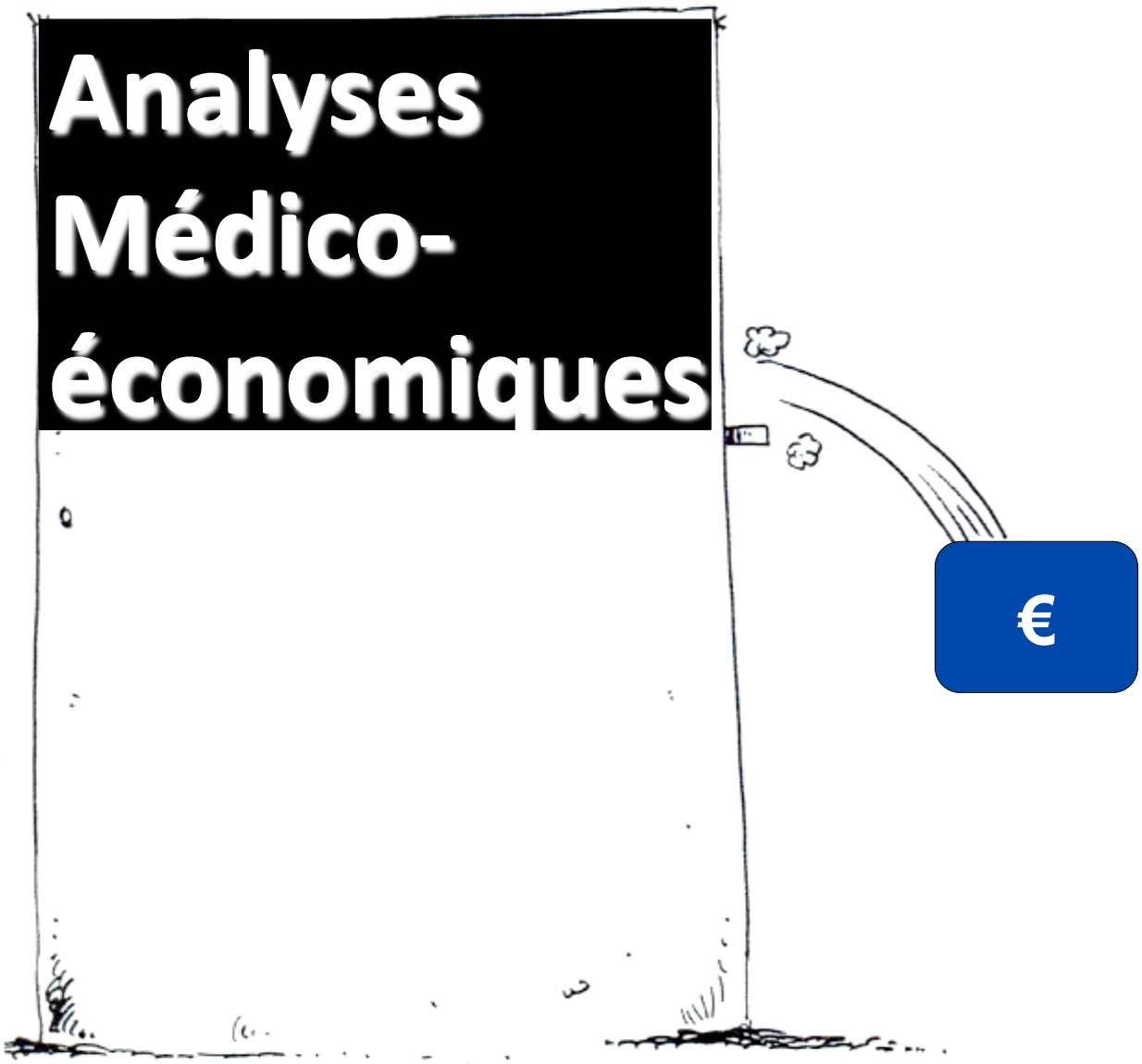
Analyse économique globale F



Analyse économique globale F



Analyses Médico-économiques



Nivolumab seconde ligne, US

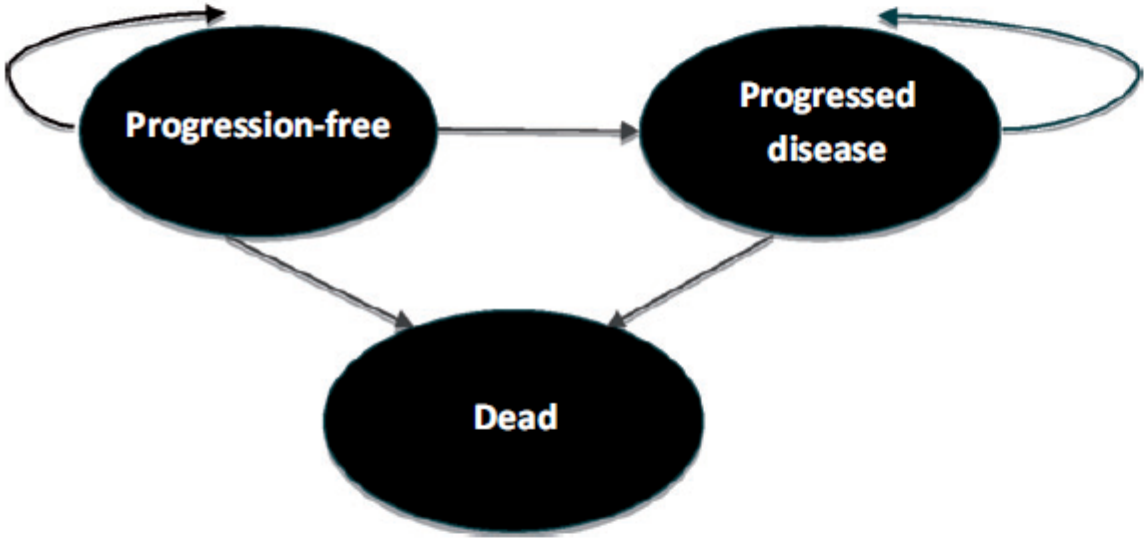


Figure 3. Health state structure for the economic models.

Goree et al, J Med Economics 2017;19:630-44

Nivolumab seconde ligne, US

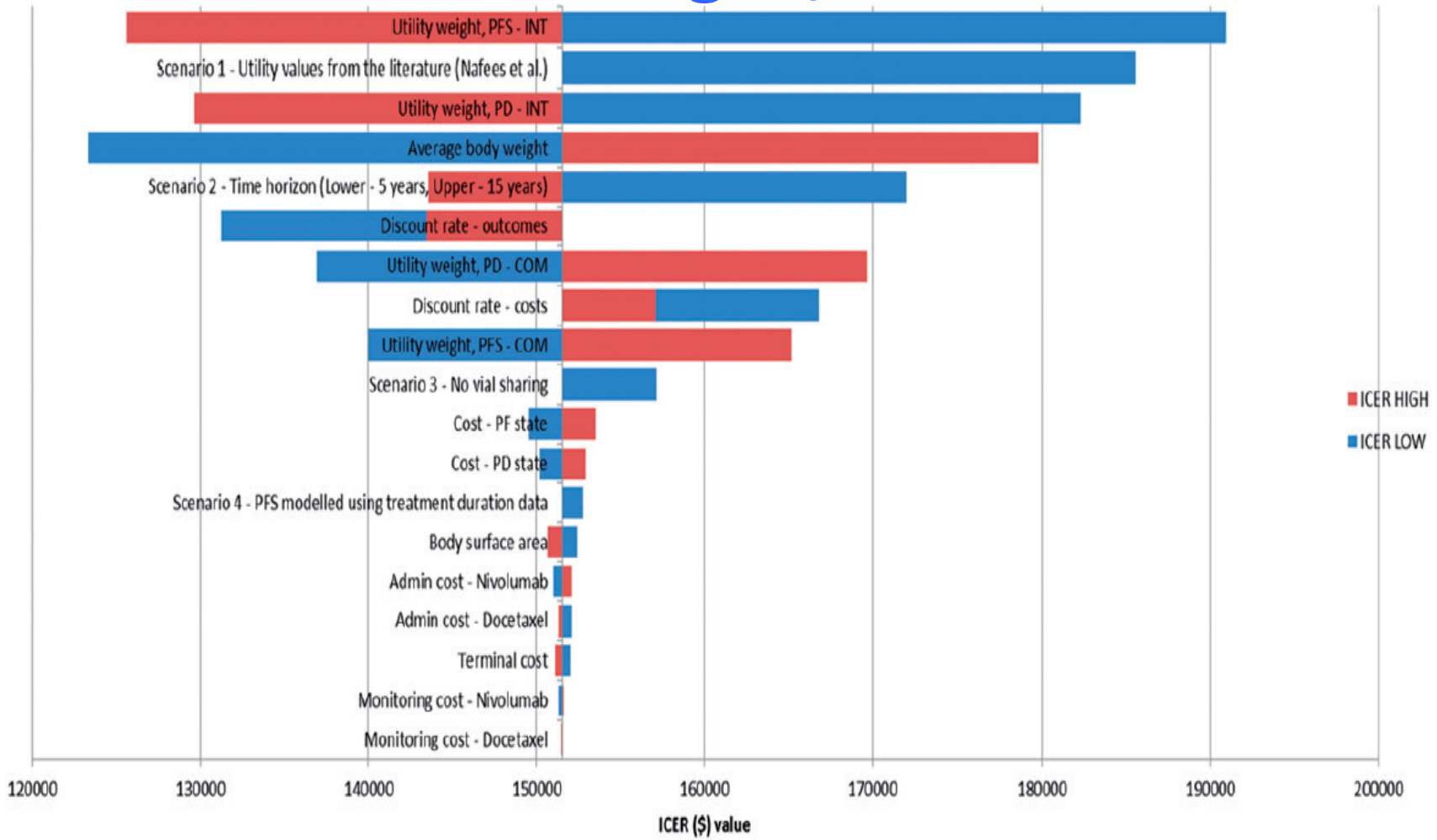


Figure 4. Tornado diagram of one-way sensitivity analyses results for nivolumab compared to docetaxel based on the PS model. COM, comparator; INT, intervention; PD, progressed disease; PF, progression-free; PFS, progression-free survival.

Goree et al, J Med Economics 2017;19:630-44

Nivolumab seconde ligne, US

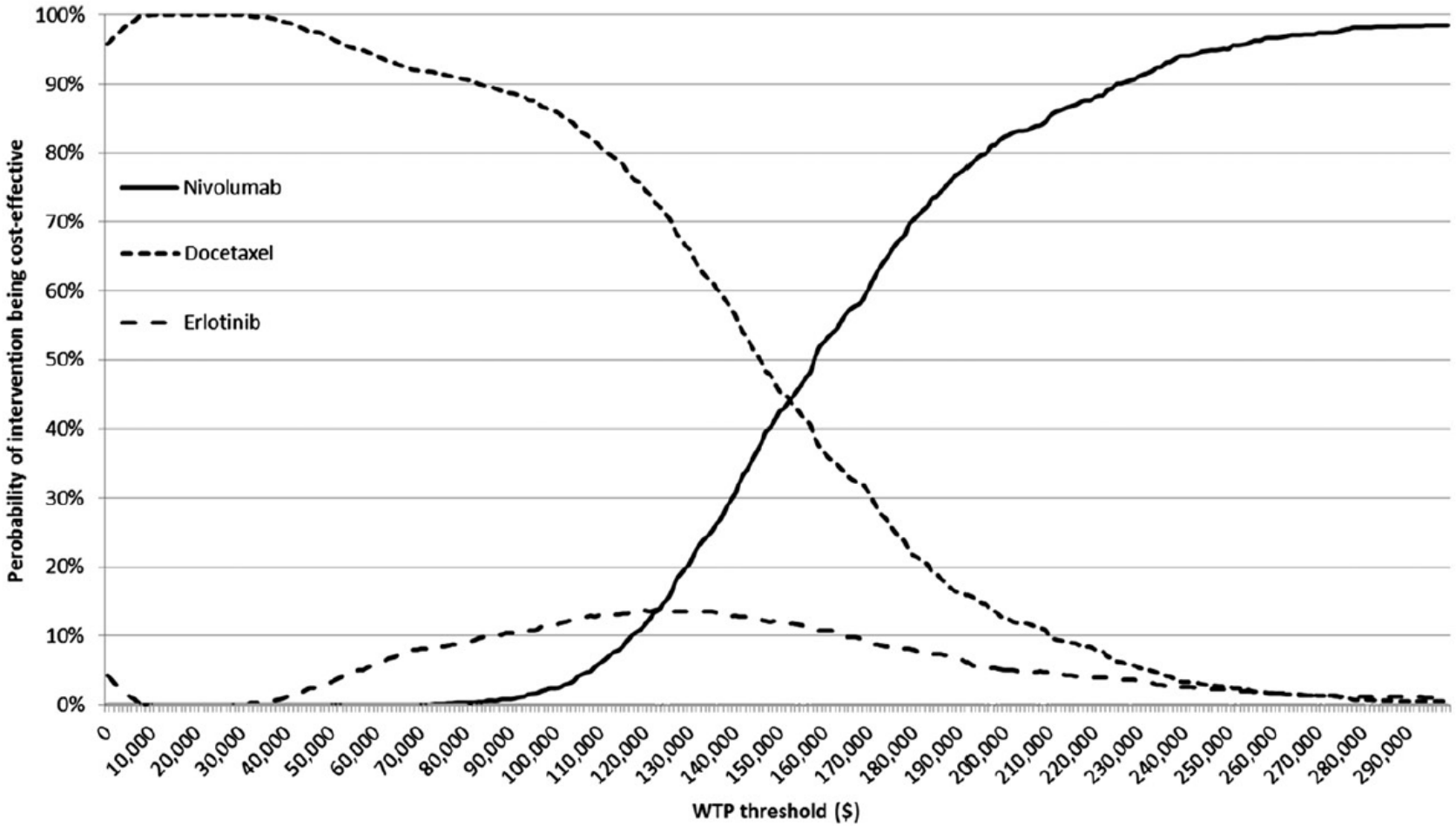


Figure 7. Multiple cost-effectiveness acceptability curves. WTP, willingness-to-pay per quality adjusted life year (QALY) gained.

Goree et al, J Med Economics 2017;19:630-44

Nivolumab seconde ligne, Suisse

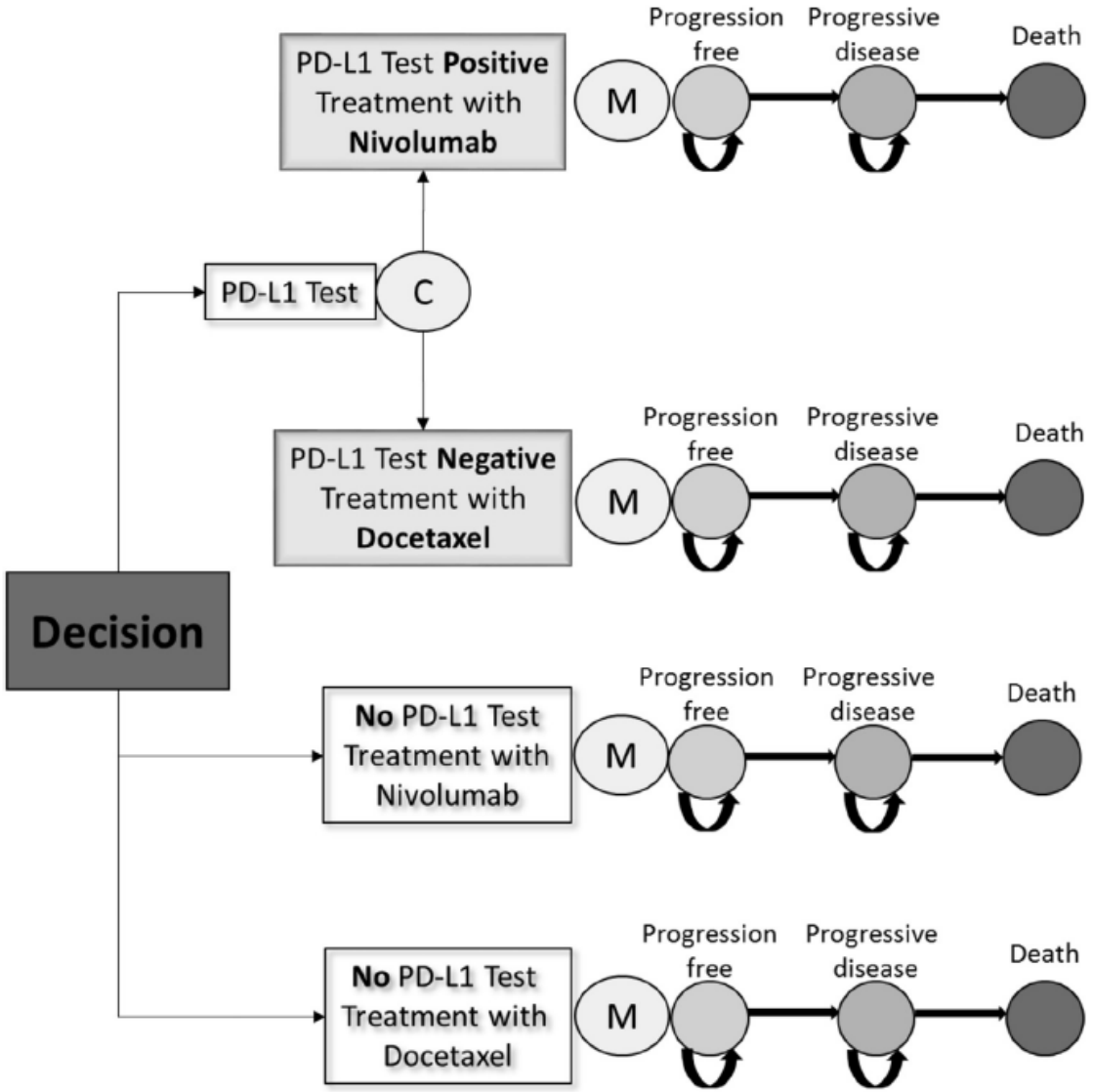


Figure 1. Model structure. PD-L1, programmed death ligand 1; C, chance node; M, Markov node.

Matter-Walstra et al., JTO 2016;11,1846-55

Nivolumab seconde ligne, Suisse

Icer 177,478 CHF,
PDL-1>1% 133,267,
PDL-1>10% 124,891

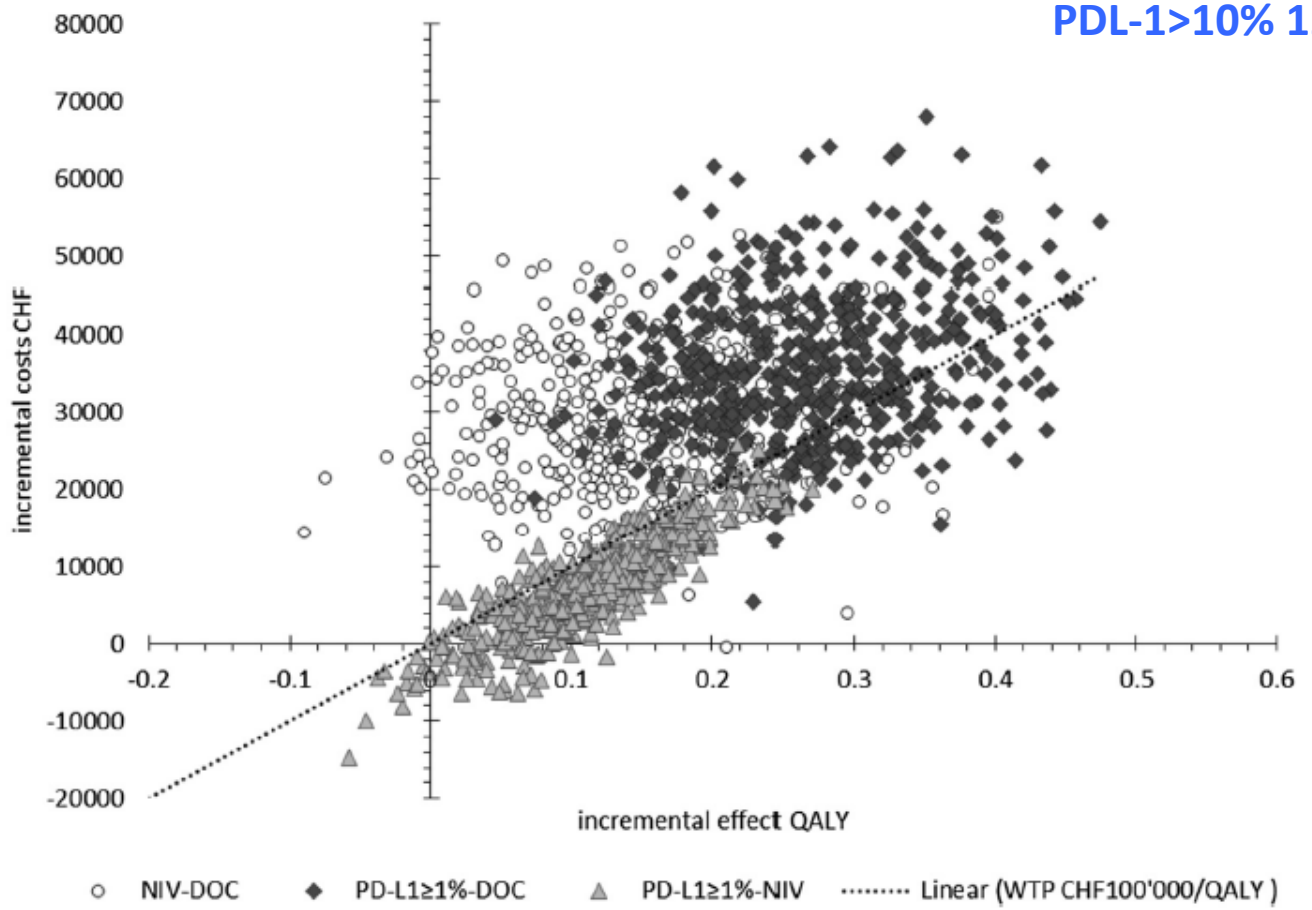


Figure 2. Probabilistic sensitivity analyses for nivolumab (NIV) versus docetaxel (DOC) and by programmed death ligand 1 (PD-L1) testing with a cutoff of 1% or more positive cells (PD-L1 ≥1%). PD-L1 ≥1% testing versus docetaxel (patients with positive test results receive nivolumab, patients with negative test results receive docetaxel) and PD-L1 ≥1% test versus nivolumab. QALY, quality-adjusted life-year; WTP, willingness-to-pay threshold.

Matter-Walstra et al., JTO 2016;11,1846-55

Nivolumab seconde ligne, Suisse

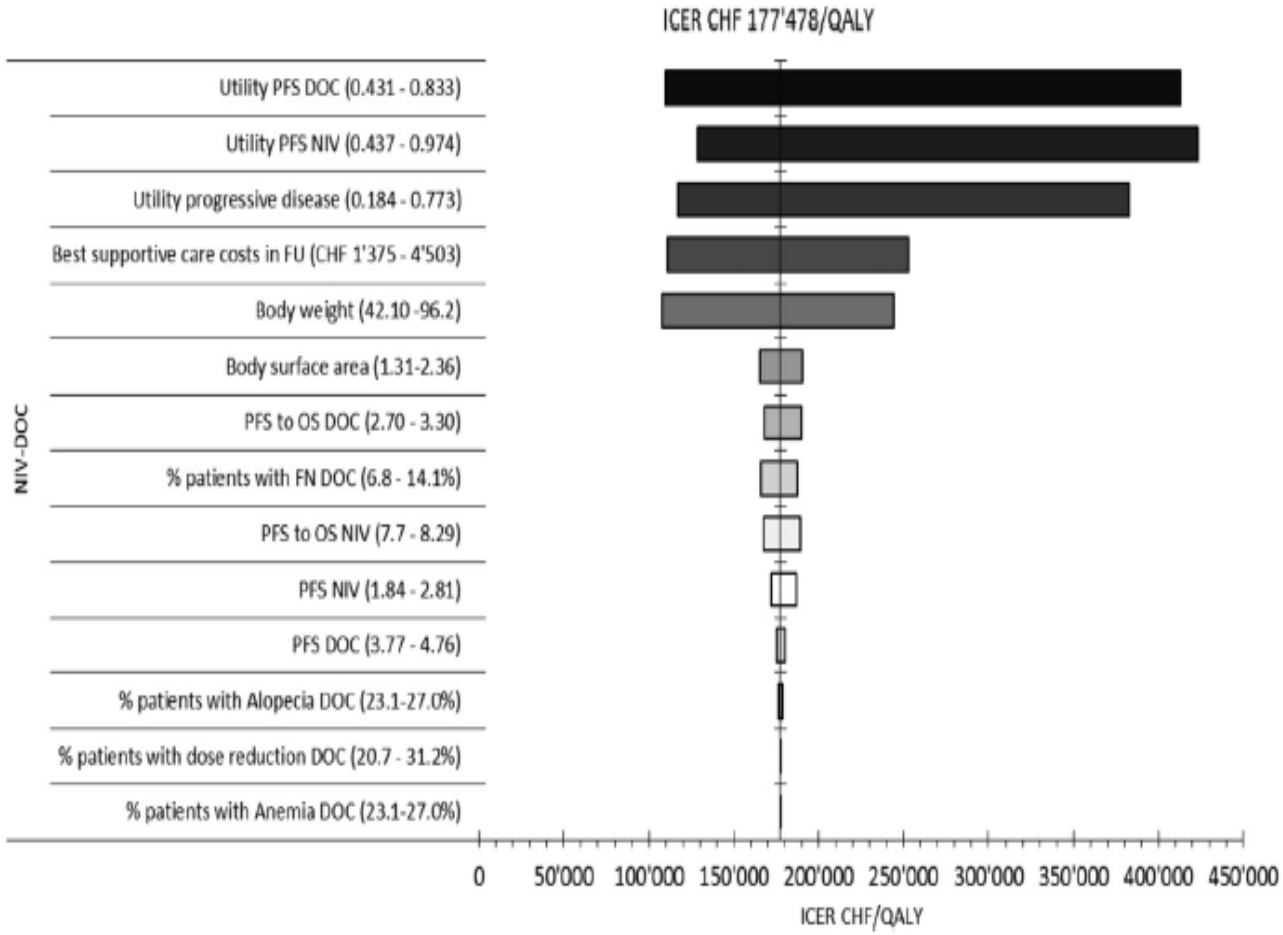


Figure 3. Tornado plot of the univariate sensitivity analyses for nivolumab (NIV) versus docetaxel (DOC). ICER, incremental cost-effectiveness ratio; QALY, quality-adjusted life-year; PFS, progression-free survival; OS, overall survival; FU, follow-up phase; FN, febrile neutropenia.

Matter-Walstra et al., JTO 2016;11,1846-55

Pembrolizumab, Seconde ligne, US

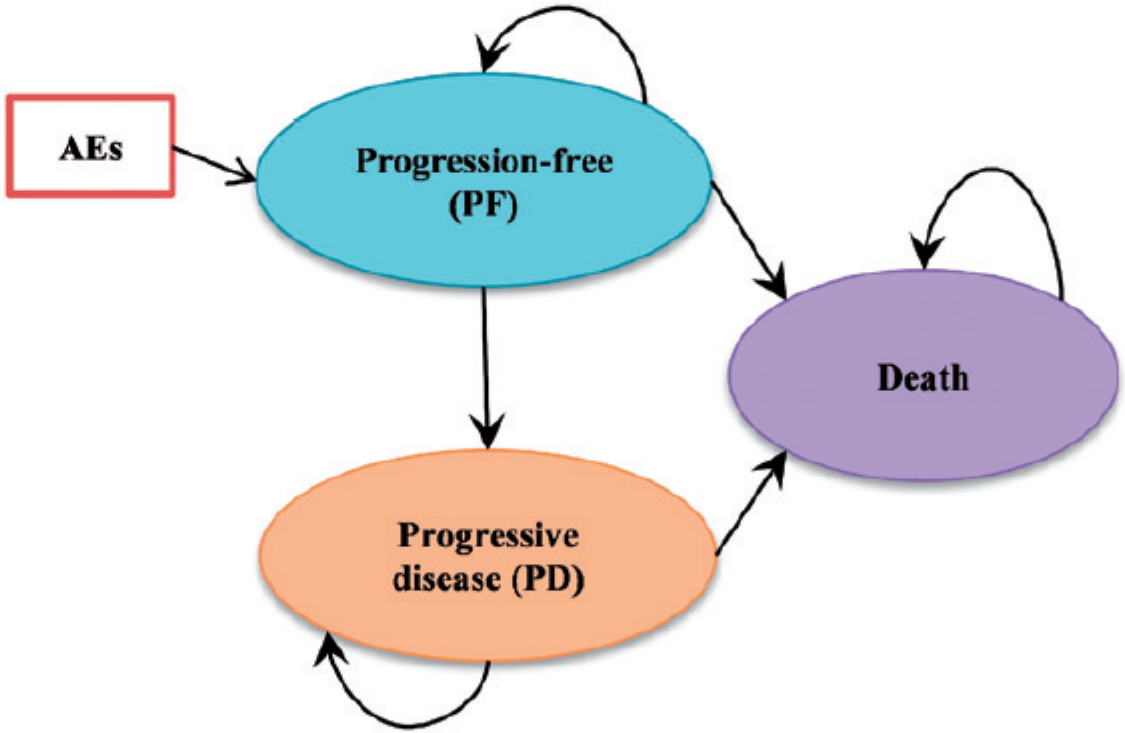


Figure 1. Transition diagram for the cohort simulation model.

Huang et al, 2017, J Med Economics 2017;20:&40-150

Pembrolizumab, Seconde ligne, US

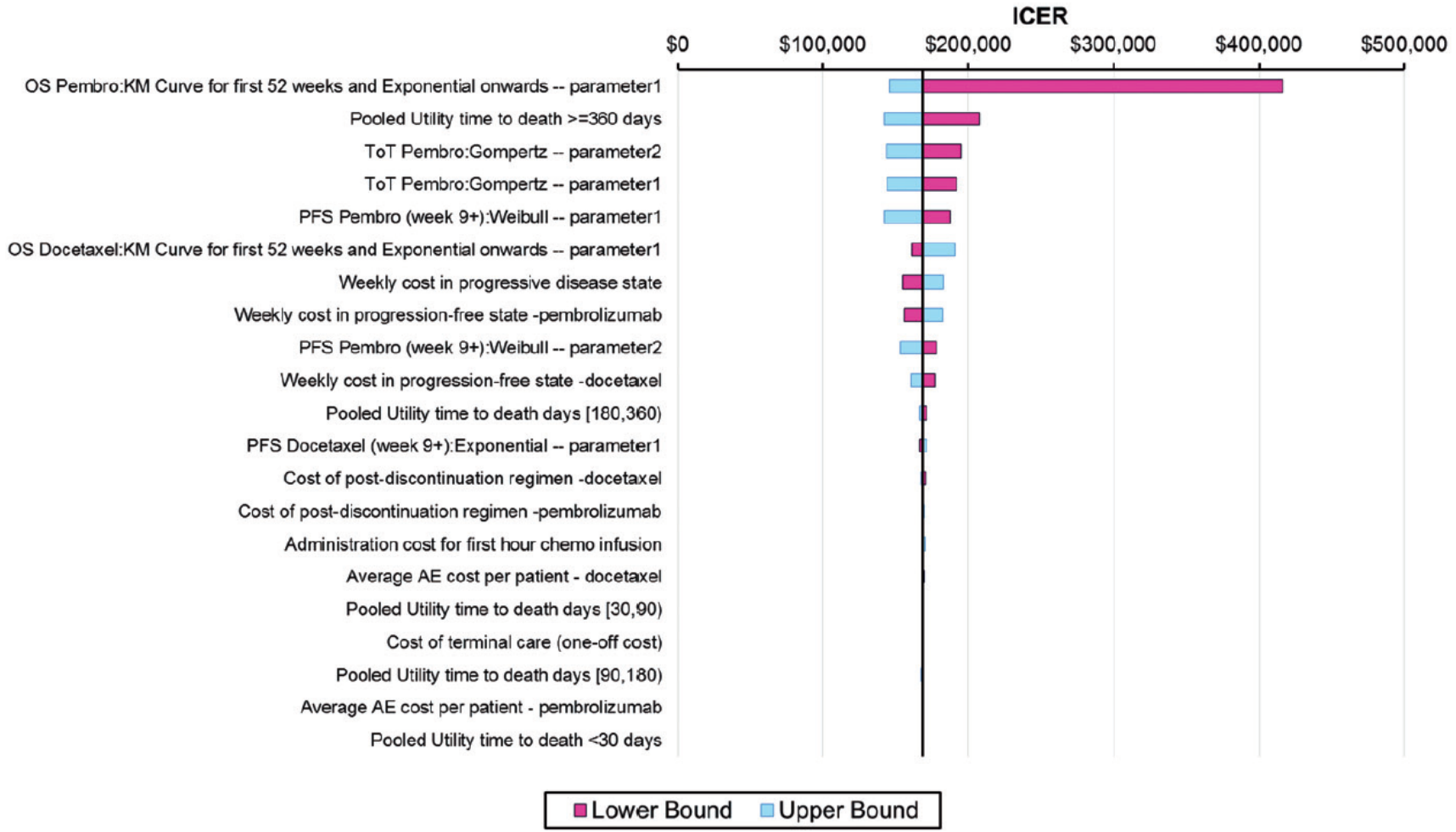


Figure 4. Tornado diagram for one-way sensitivity analyses.

Huang et al, 2017, J Med Economics 2017;20:&40-150

Pembrolizumab, Seconde ligne, US

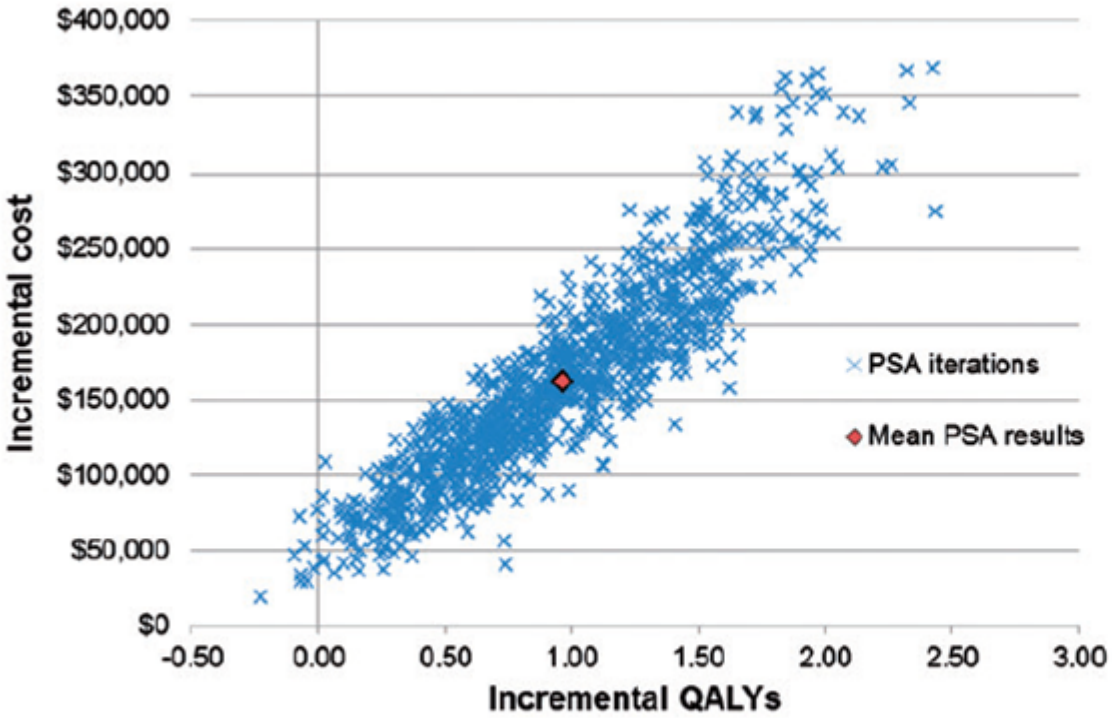


Figure 5. Probabilistic sensitivity analysis scatter plot and cost-effectiveness acceptability curve for base case.

Huang et al, 2017, J Med Economics 2017;20:&40-150

Pembrolizumab, Seconde ligne, US

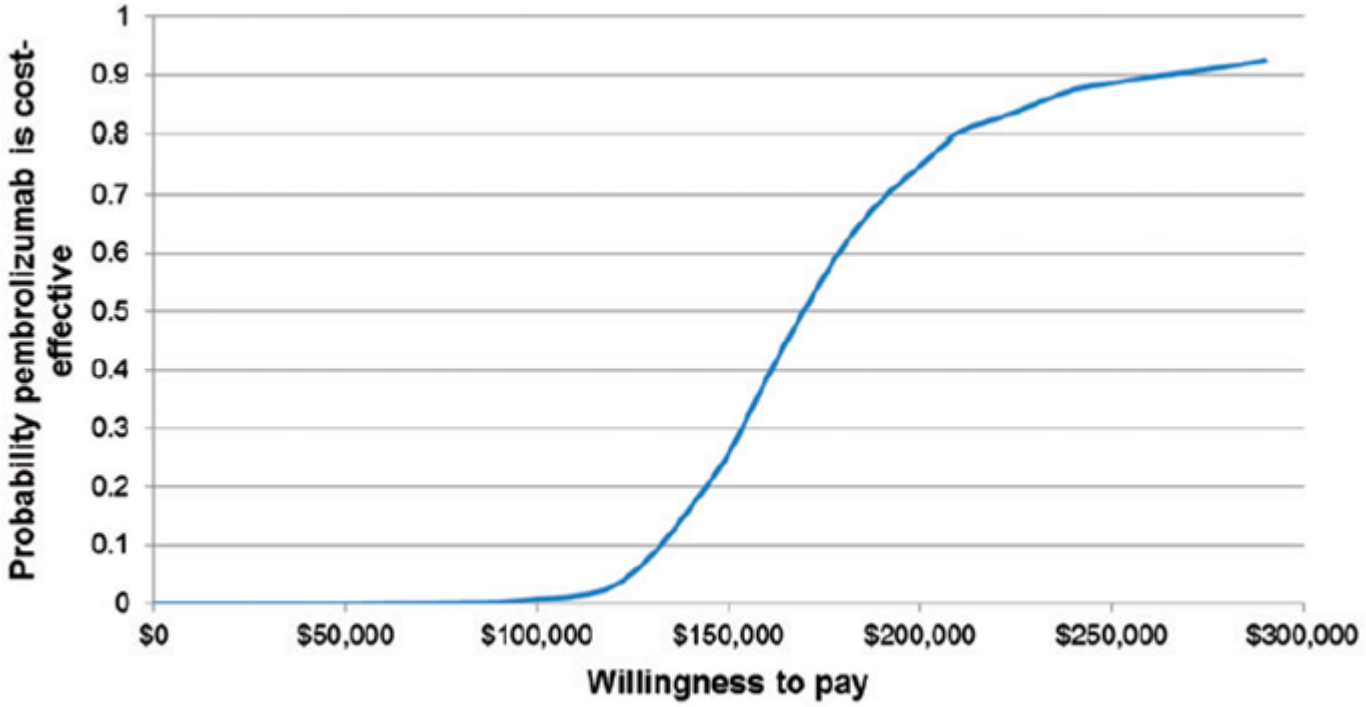
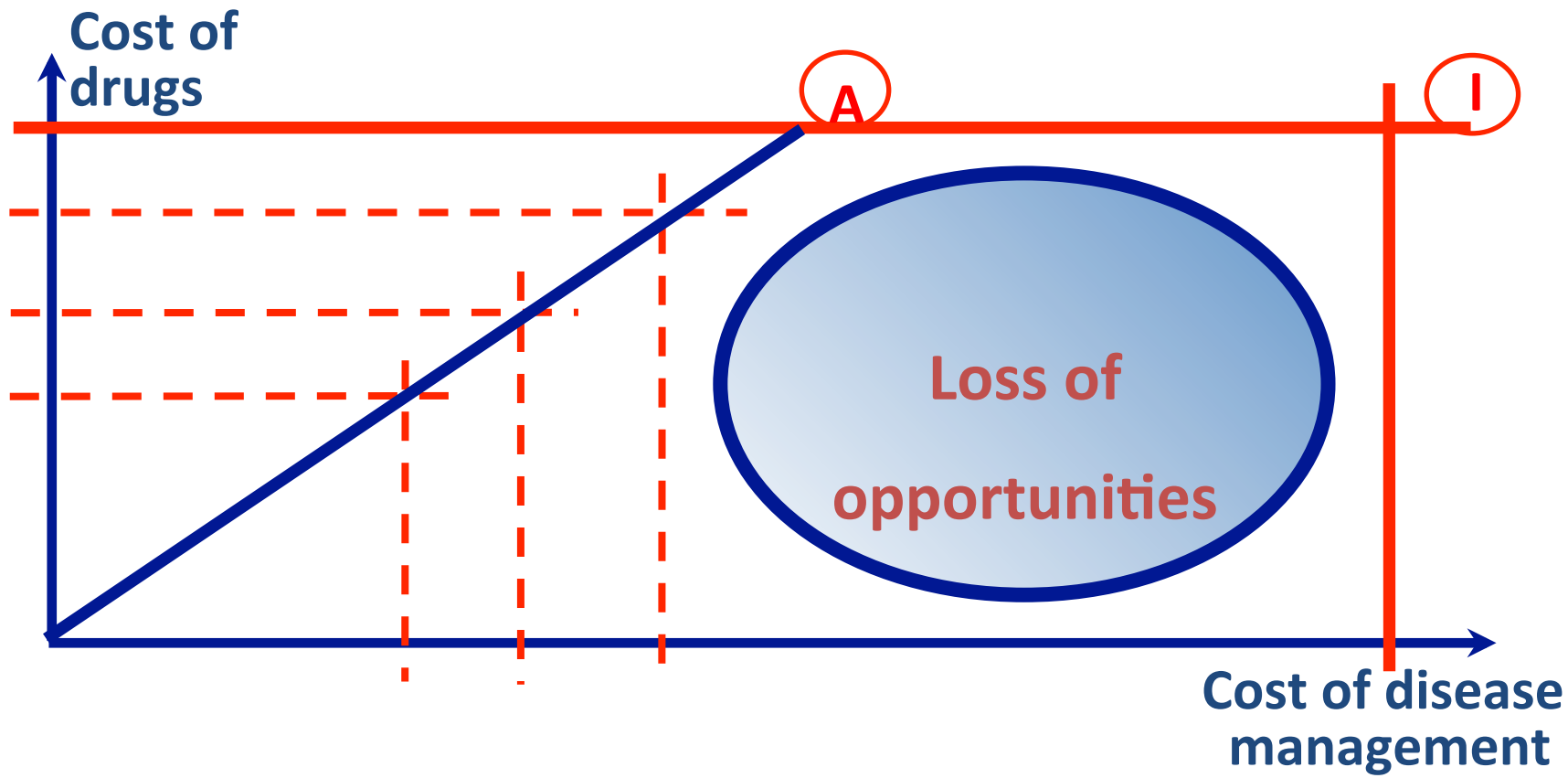


Figure 5. Probabilistic sensitivity analysis scatter plot and cost-effectiveness acceptability curve for base case.

Huang et al, 2017, J Med Economics 2017;20:&40-150

Coût du parcours *vs* coût des drogues



CONCLUSION

- **Coût K US : $120 billions 2010, $158 billion 2020**
- **Prix des médicaments 300% en 15 ans $8,000 à $10,000 par mois**
- **Aucune corrélation (critères Asco), avec le bénéfice clinique ou les critères du Nice, les Qaly, critères Esmo**
- **Faire des études en France**
- **Analyser les parcours complets, et pas seulement les molécules et leur ligne de traitement**

Cheng et al, JCO 2017, 20/8/17