

TREATING CHRONIC HEPATITIS C FRENCH PATIENTS WITH DIRECT-ACTING ANTIVIRALS DRUGS BETWEEN 2014 - 2018 SAVED AN ESTIMATED 1 BILLION EUROS A BUDGET IMPACT MODEL

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Direct-acting Antivirals (DAA) = Breakthrough therapeutic Innovation in the Treatment of Chronic Hepatitis C (CCH) with improved efficacy and tolerance compared to treatments available before 2014

- High sustained virological response rate (> 95% vs 54% to 70% beforehand) with shorter treatment (8 to 12 weeks vs. 24 to 48 weeks)
- Reduced rates of adverse events (AEs)
- Efficiency assessed and demonstrated in published studies

Approximately 72,000 patients treated with AAD in France in 4 years (SNIIRAM database)

OBJECTIVE

TO EVALUATE THE ECONOMIC IMPACT OF THE LAUNCH OF DAA IN FRANCE BETWEEN 2014 - 2018

A Budget Impact (BI) Model developed to simulate (Figure 1)

● Patients treated between 2014 and 2018

- Number of patients (w/ DAA: 71992, w/o DAA: 48470; Health Insurance Data, Deuffic-Burban Estimate, 2012)
- Virological efficacy (w/ DAA: 90%-98%, w/o DAA: 56%-73%; Clinical Trials)
- Costs of treatment and management of AEs (published net prices including rebates*)

● Disease evolution over the patients lifetime according to virological response

- Progress to cirrhosis & associated complications (Deuffic-Burban, 2012)
- Associated management costs/year (Active F0-F2: €331/year, Active F3: €364/year, F4: €1,418/year, Decompensated Cirrhosis: €13,202/year Hepatocarcinoma: €13,261/year, Liver Transplant [1st year/subsq year]: €61,572 / €5,780€; Deuffic-Burban, 2018)

● The indirect costs of HCV represented by the loss of productivity at work due to absenteeism or presenteeism related to the pathology (€3,409.99/year for active infection, HELIOS study)

COMPARISON OF TWO SCENARIOS

With DAA = real world treatment of patients with DAA between 2014 and 2018

Without DAA = hypothetical world where DAA would not have been available (only peg-interferon / ribavirin for all genotypes and boceprevir / telaprevir for genotypes 1)

* Rebates estimated from the public reports of the Comité Economique des Produits de Santé (CEPS) and the Minister's declaration (net price of € 28,000 for a cure in 2017/2018); included the W-rate and post-ATU discounts.

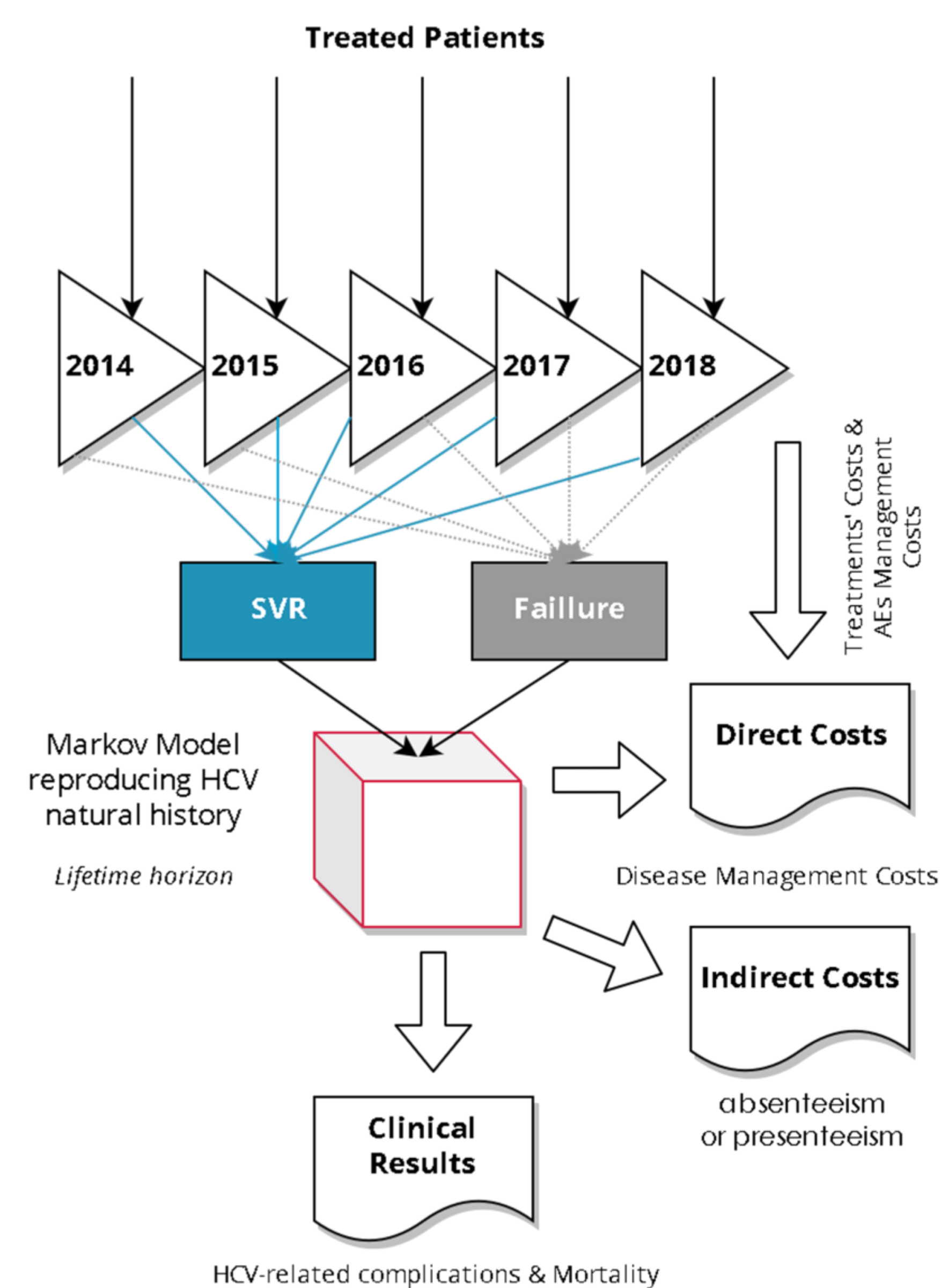


Figure 1 – Model design

DAA IN THE TREATMENT OF HCV IN FRANCE ALLOWED TO SAVE € 1 BILLION BY TREATING AND CURING 72,000 PATIENTS BETWEEN 2014 AND 2018, COMPARED TO STANDARD TREATMENTS ADMINISTERED BEFORE 2014.

- Figure 2 shows the external validation of the model vs the data observed in the HEPATHER cohort (Carrat, 2019)
- 72,000 patients were treated with DAA but only 48,500 patients would have been treated in a world without DAA
- Figure 3 : The model estimates that the cost associated with the treatment and management of HCV complications for patients treated with DAA between 2014 and 2018 will be € 4.3 billion (3.4 of which are related to treatment and 0.9 related to the management of HCV); it would have been 5.4 billion in a world without DAA (including 1.0 for treatment, 1.9 for HCV management and 2.4 in indirect costs)
- Figure 4 : with the DAA, the savings in terms of direct costs are m€ -287 for cirrhosis, m€-370 for Hepatocarcinoma and m€ -404 for Liver Transplant leading to € -1 billion
- Average saving per treated patients was estimated to be € 15,000

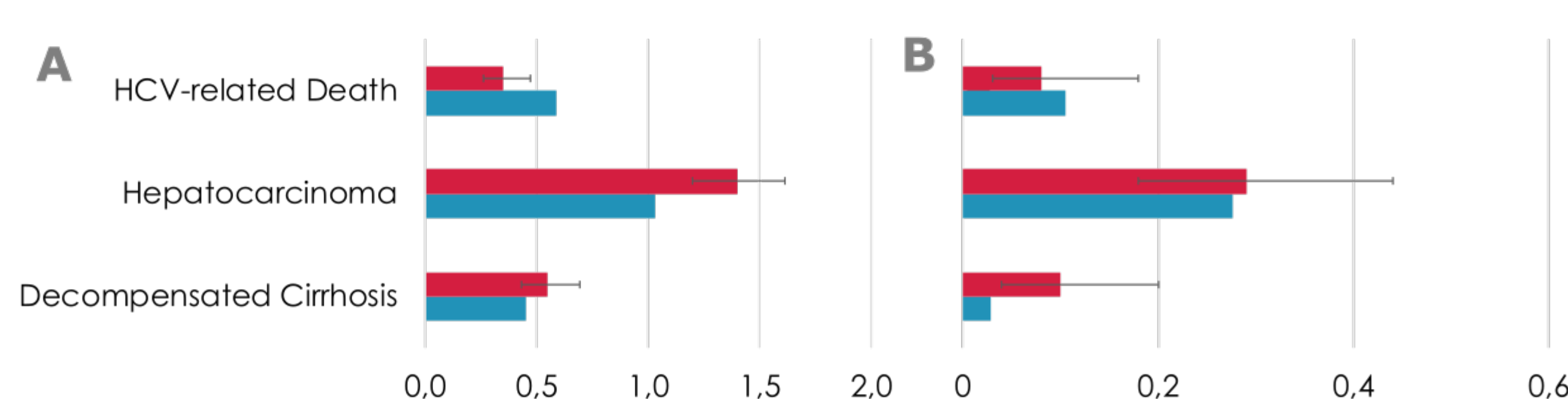


Figure 2 – External Validation (vs HEPATHER)

A –Comparison of the incidence of complications (100 patients/year) between HEPATHER and simulated results for patients treated with DAA; B –Incidence of complications (100 patients/year) for patients with no treatment

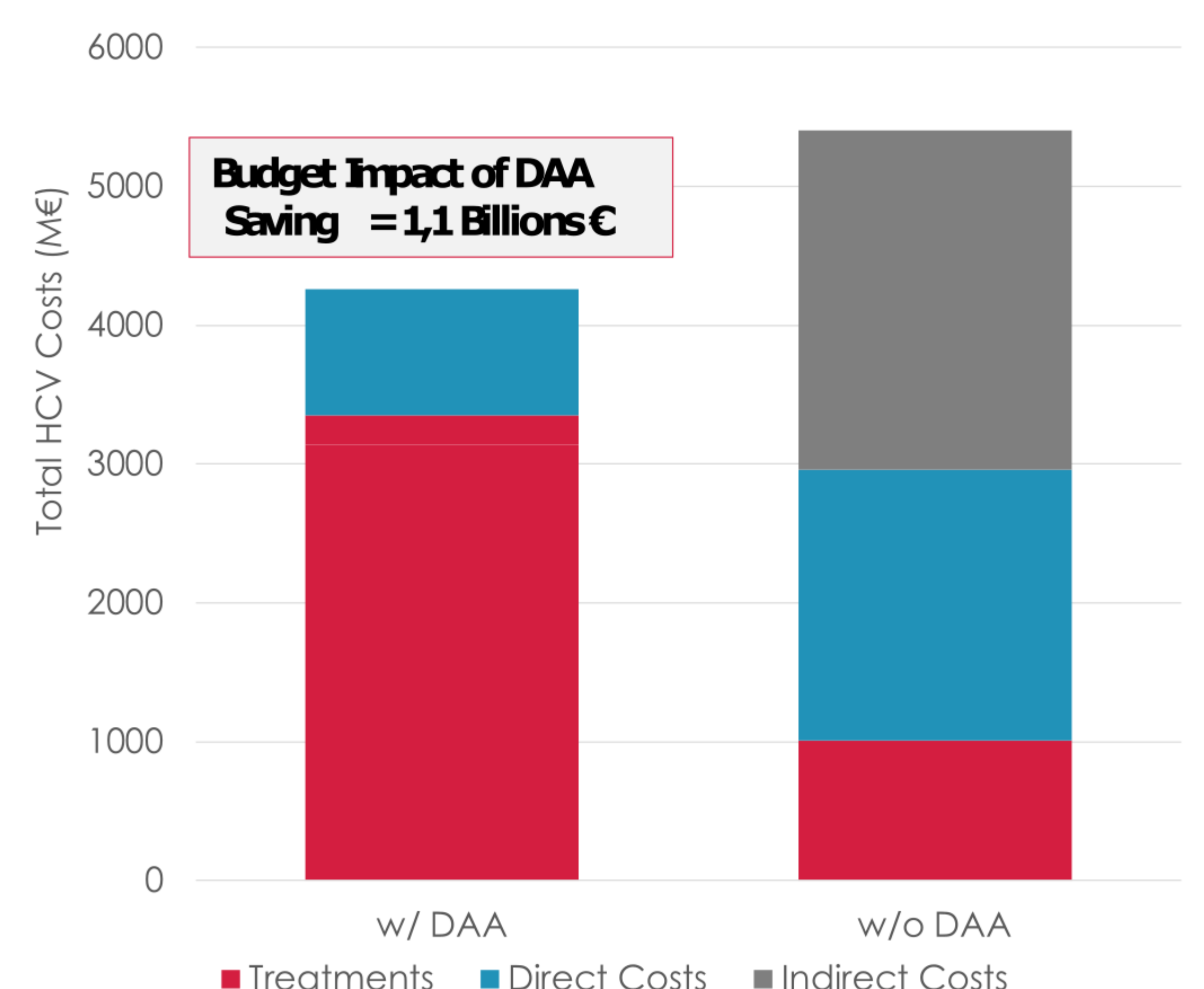


Figure 3 – Budget Impact, w/DAA vs w/o DAA

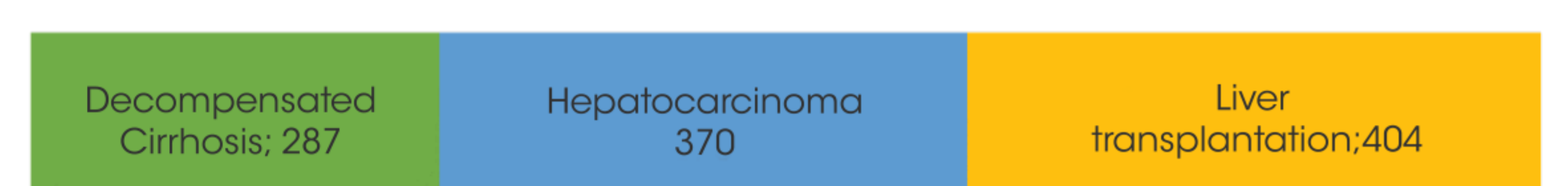


Figure 4 – Savings related to avoided complications when treating with DAA (direct Costs, €millions)