



Achieving accelerated elimination of hepatitis C virus infection by 2025: a case study in France

Victor de Ledinghen¹, Christophe Bureau², Yuri Sanchez Gonzalez³, Fabrice Ruggeri⁴, Homie Razavi⁵

¹ CHU de Bordeaux, Bordeaux, France, ² CHU de Toulouse, Toulouse, France, ³ AbbVie Inc., North Chicago, USA, ⁴ AbbVie France Ltd., Rungis, France, ⁵ Center for Disease Analysis, Lafayette, USA

INTRODUCTION

With the introduction of curative therapies for hepatitis C virus (HCV) infection and removal of restrictions on antiviral treatment by fibrosis score, France is on track to achieve the World Health Organization's (WHO) targets¹ for elimination of HCV as a public health threat by 2030

OBJECTIVES

To inform the path towards accelerated elimination, this analysis evaluates the clinical and economic impact of HCV elimination in France by 2025

METHODS

A Markov disease progression model was developed to assess the impact over 2019–2030 from expanding HCV diagnosis and treatment, and populated with demographic and epidemiological inputs and price data^{2–3} from France

Historical incidence of HCV was calibrated to match 110,000 chronically infected adults (with 40,000 diagnosed) in 2018

Future incidence was assumed to change at the same annual rate as prevalence

Two scenarios were compared:

- Maintaining 15,000 annual treatments and 4.1 million annual HCV antibody (AB) screens⁴ (the “status quo”)
- “Accelerated elimination by 2025,” requiring 13,700 diagnoses (HCV RNA+ confirmed after AB+ test) and 18,650 treatments annually over 2019–2025

Clinical outcomes of cases of decompensated cirrhosis, hepatocellular carcinoma, liver transplantation, liver-related deaths, and quality-adjusted life years (QALYs) were analyzed

Economic outcomes of costs of screening, antiviral treatment, liver-related complications, and extra-hepatic manifestations were analyzed

QALYs and total medical costs were used to calculate the incremental cost-effectiveness ratio (ICER) of accelerated elimination of HCV

CONCLUSIONS

While France is on track to eliminate HCV as a public health threat by 2030, an expansion of screening to 28 million more people would be necessary to accelerate elimination by 2025

This accelerated elimination path would further reduce the clinical and economic burden of HCV and be cost-saving by 2030

RESULTS

- Compared to the status quo, accelerated elimination in France would require screening of two times more people annually, or 28 million additional HCV AB screens, over 2019–2025
- By 2030, accelerated elimination would avert
 - 7,244 new HCV infections,
 - 74 cases of decompensated cirrhosis
 - 144 cases of hepatocellular carcinoma
 - 16 liver transplantations
 - 107 liver-related deaths
- By 2030, accelerated elimination would yield cost savings of €162 million, with an ICER of €-9,635/QALY

Table 1. Clinical and economic outcomes, by scenario		
	Status quo	Accelerated elimination by 2025
Clinical burden over 2019–2030, incident cases		
HCV infection	21,840	14,597
Decompensated cirrhosis	118	44
Hepatocellular carcinoma	240	95
Liver transplantations	25	9
Liver-related deaths	177	70
Medical costs over 2019–2030, million €		
Screening	712	768
Antiviral treatment	3,136	3,238
Liver-related complications	150	98
Extra-hepatic manifestations	708	441
Total medical costs	4,706	4,544

Figure 1. Scenario assumptions, 2019–2025

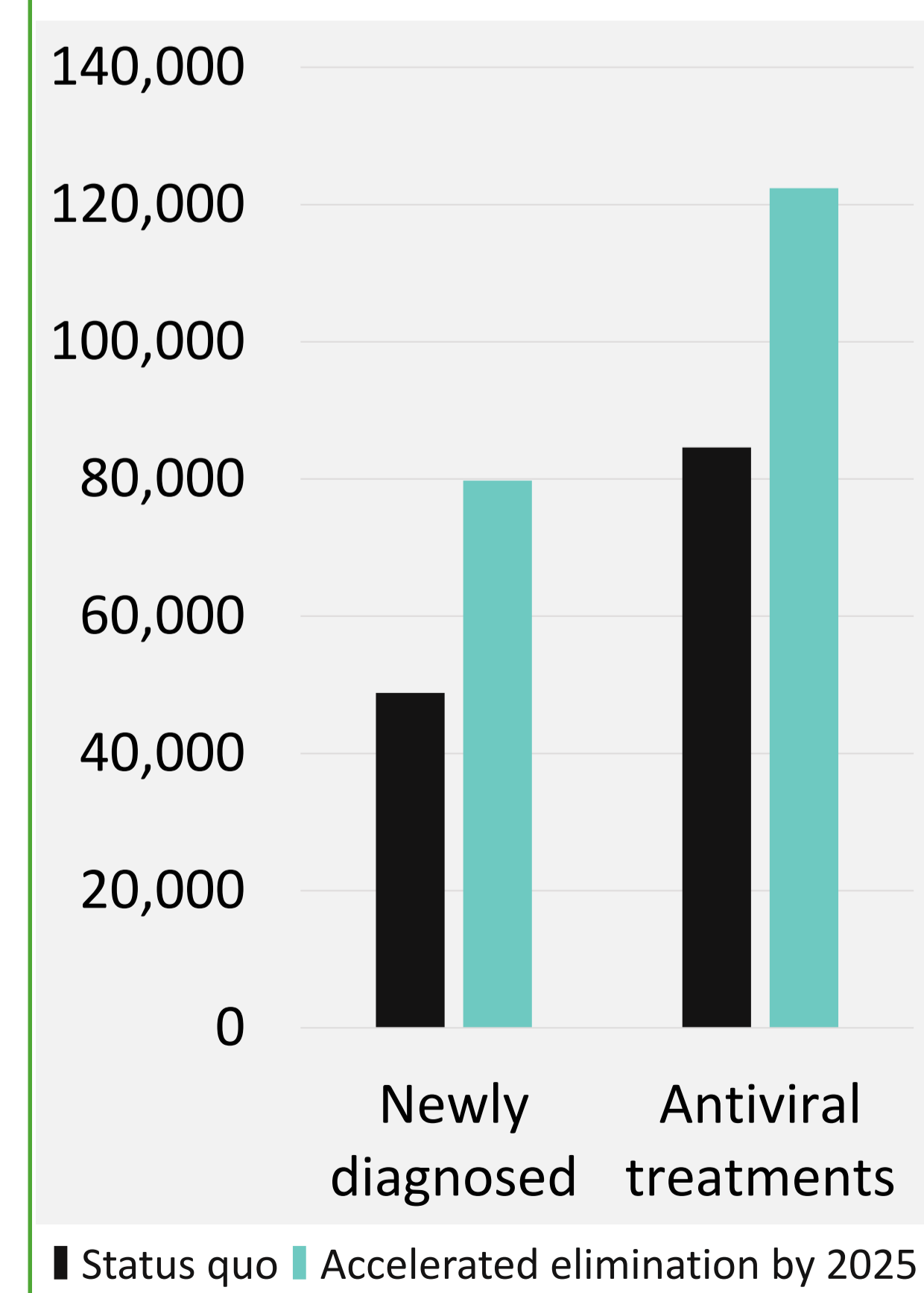
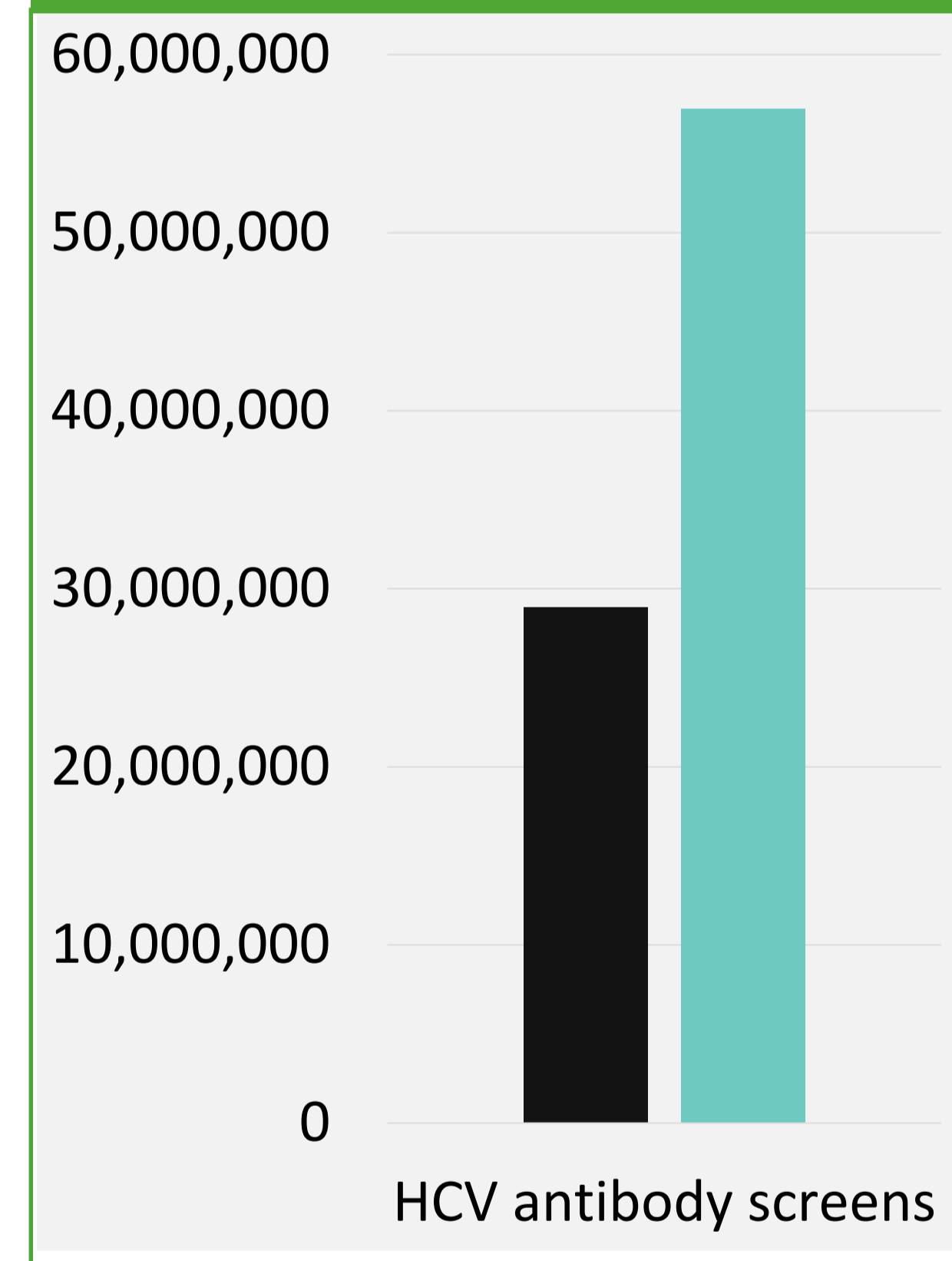


Figure 2. Clinical burden, by scenario

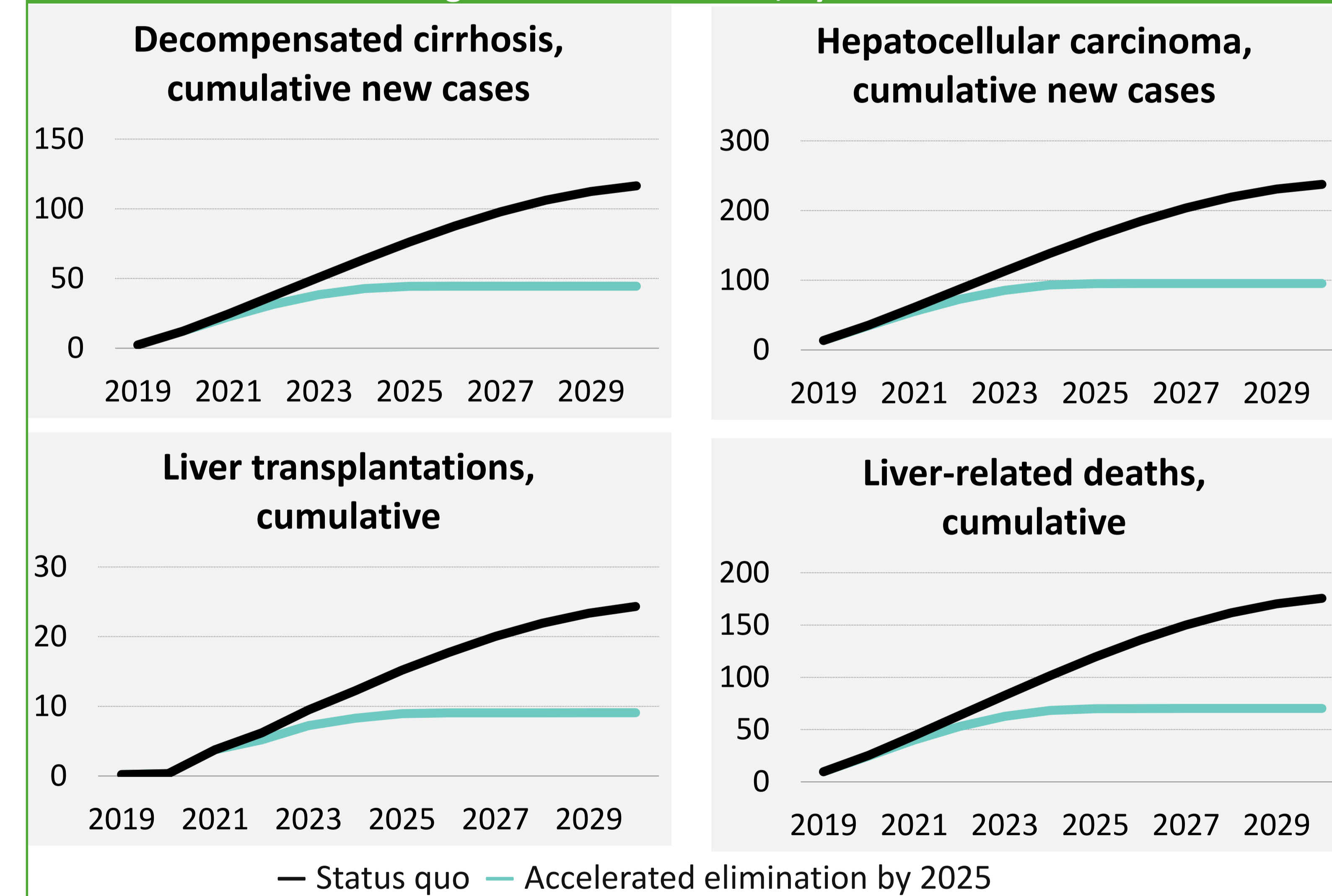


Figure 4. Care status for hepatitis C virus infection, by scenario

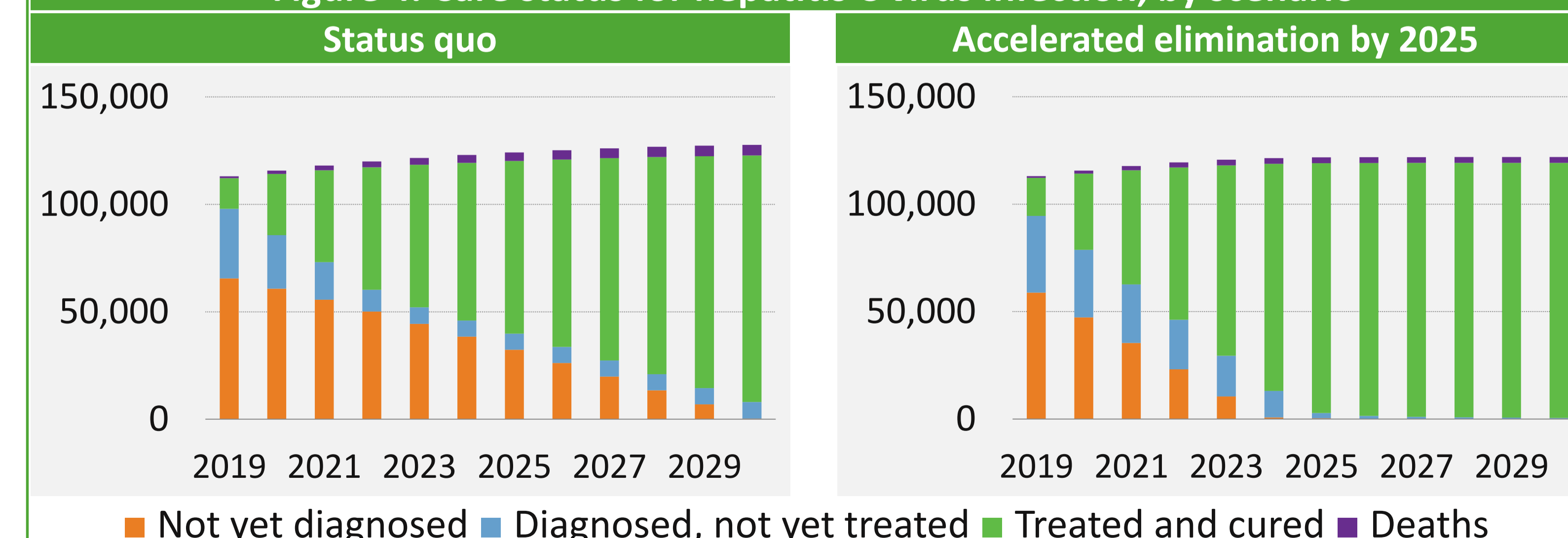
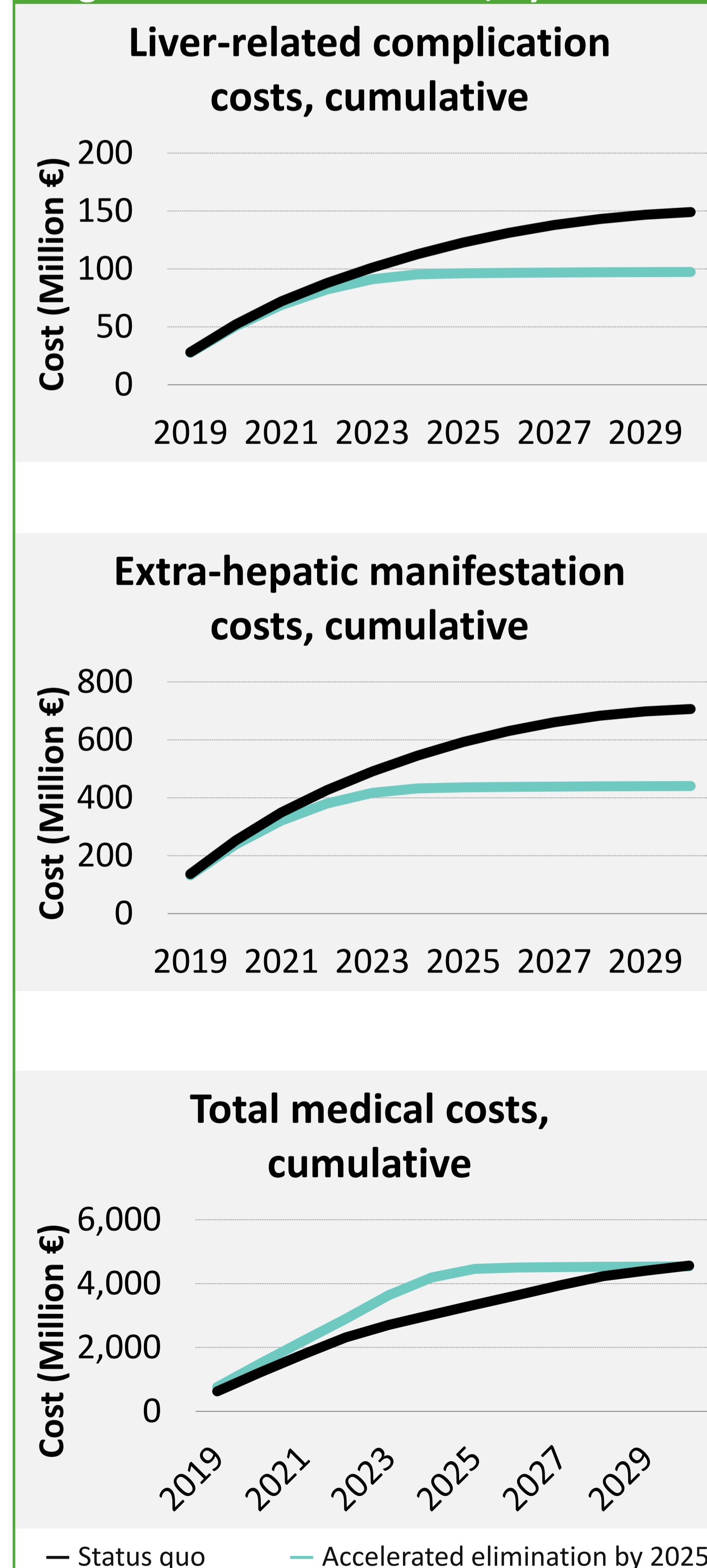


Figure 3. Economic burden, by scenario



LIMITATIONS

Number of HCV antibody screens and treatments, and unit costs of screening and treatment were assumed to stay constant annually, which may differ from future trends

DISCLOSURES

- The design, study conduct, and financial support for the study were provided by AbbVie. AbbVie participated in the interpretation of data, review, and approval of this publication
- Victor de Ledinghen is an employee of CHU de Bordeaux. He has received consulting fees from AbbVie, Gilead, MSD, Pfizer, Intercept Pharma, Echosens and Supersonic Imagine
- Christophe Bureau is an employee of CHU de Toulouse. He has received consulting fees from AbbVie, Gilead, Intercept, Norgine and Gore
- Yuri Sanchez Gonzalez is an employee of AbbVie Inc. and may own AbbVie stock or stock options.
- Fabrice Ruggeri is an employee of AbbVie France Ltd. and may own AbbVie stock or stock options
- Homie Razavi is an employee of Center for Disease Analysis. The Center for Disease Analysis has received funding from AbbVie Inc. for this project

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CONTACT INFORMATION

Yuri Sanchez Gonzalez
AbbVie Inc., North Chicago, USA
yuri.sanchezgonzalez@abbvie.com