Health-economic evaluation of a fast-track hepatitis C micro-elimination program among people who inject drugs receiving OST in the Hellenic Organization Against Drugs (Tityus program).

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HELLENIC REPUBLIC
National and Kapodistrian University of Athens

Organisation Against Drugs

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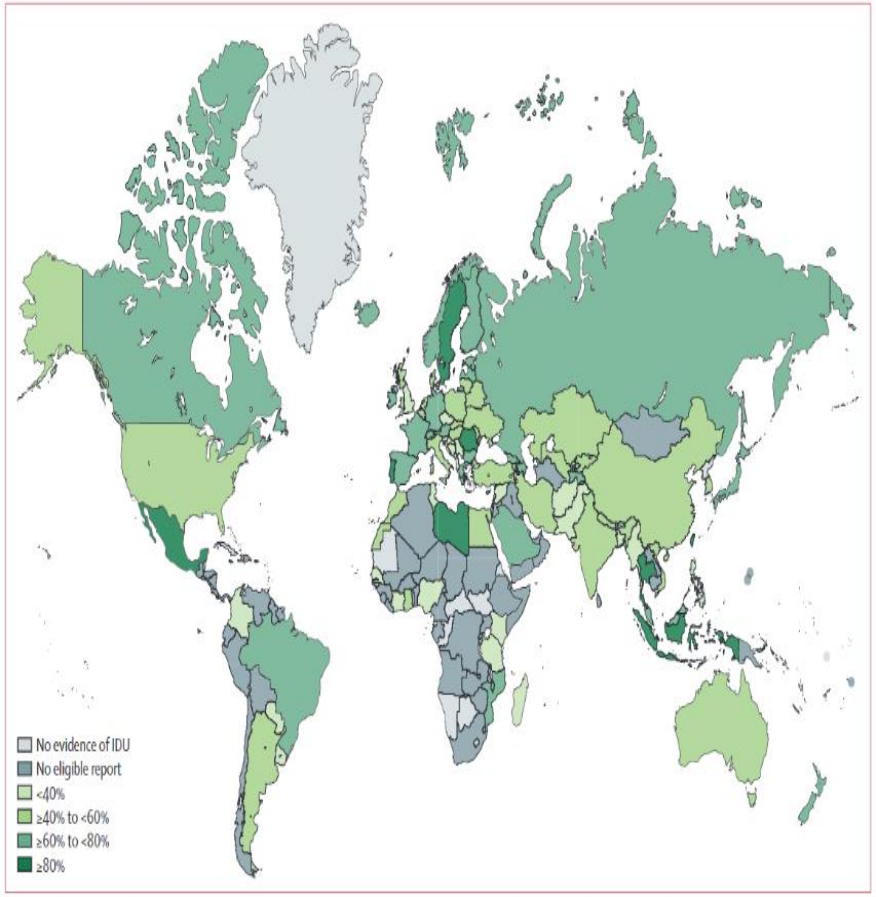
GILEAD

Disclosures

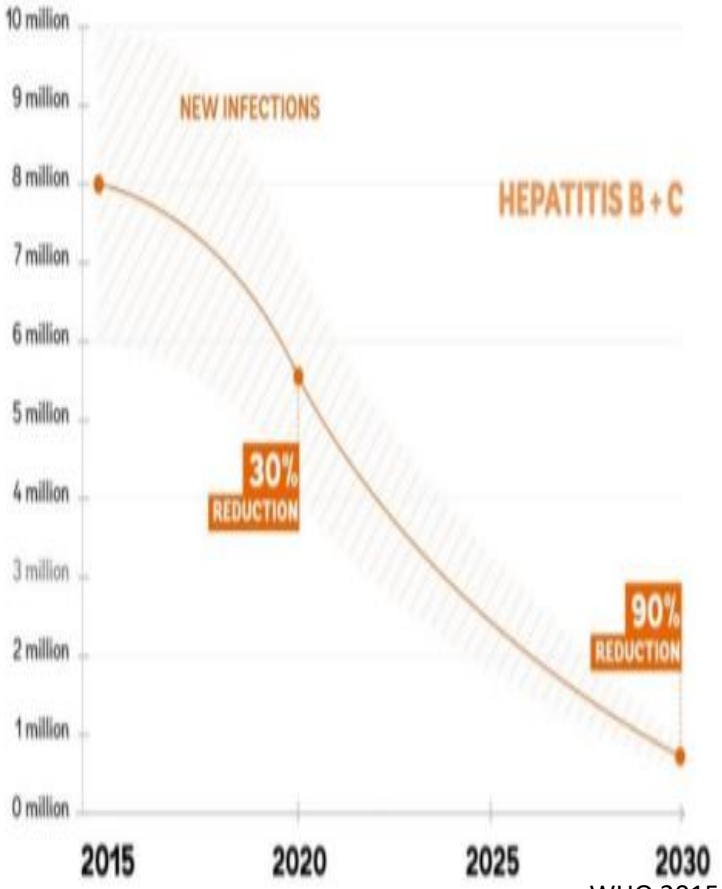
- Research Grands: Gilead, AbbVie
- Travel Grands: AbbVie

Introduction (1)



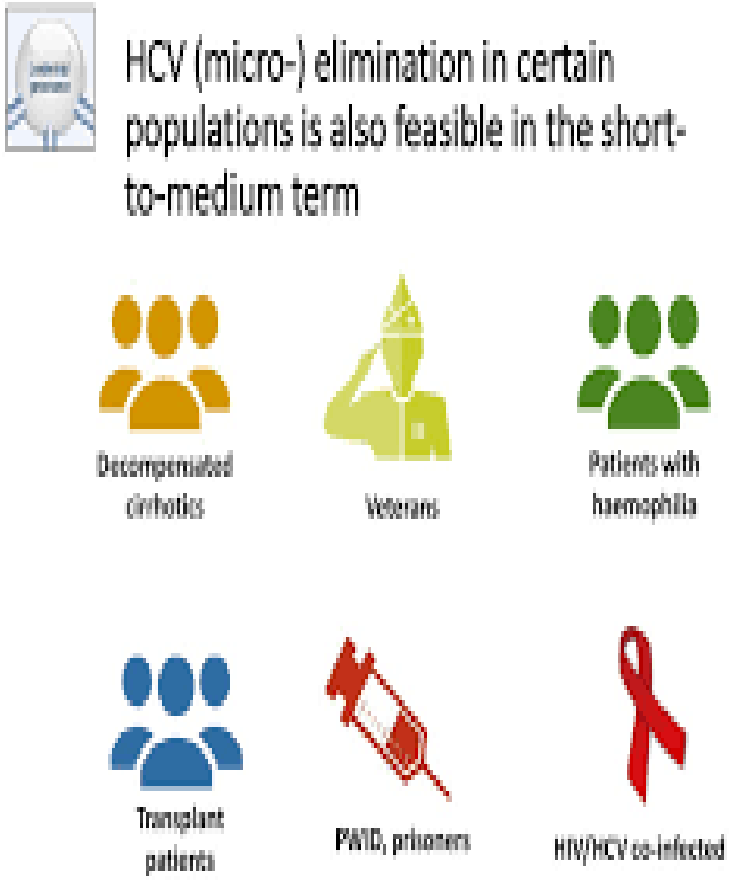
Degenhardt et al. 2017

It is estimated that 8,1 million people who inject drugs (PWID) have been infected by HCV worldwide



WHO 2015

The advent of highly effective direct-acting antivirals (DAAs) brought great optimism that HCV could be eliminated in the near future



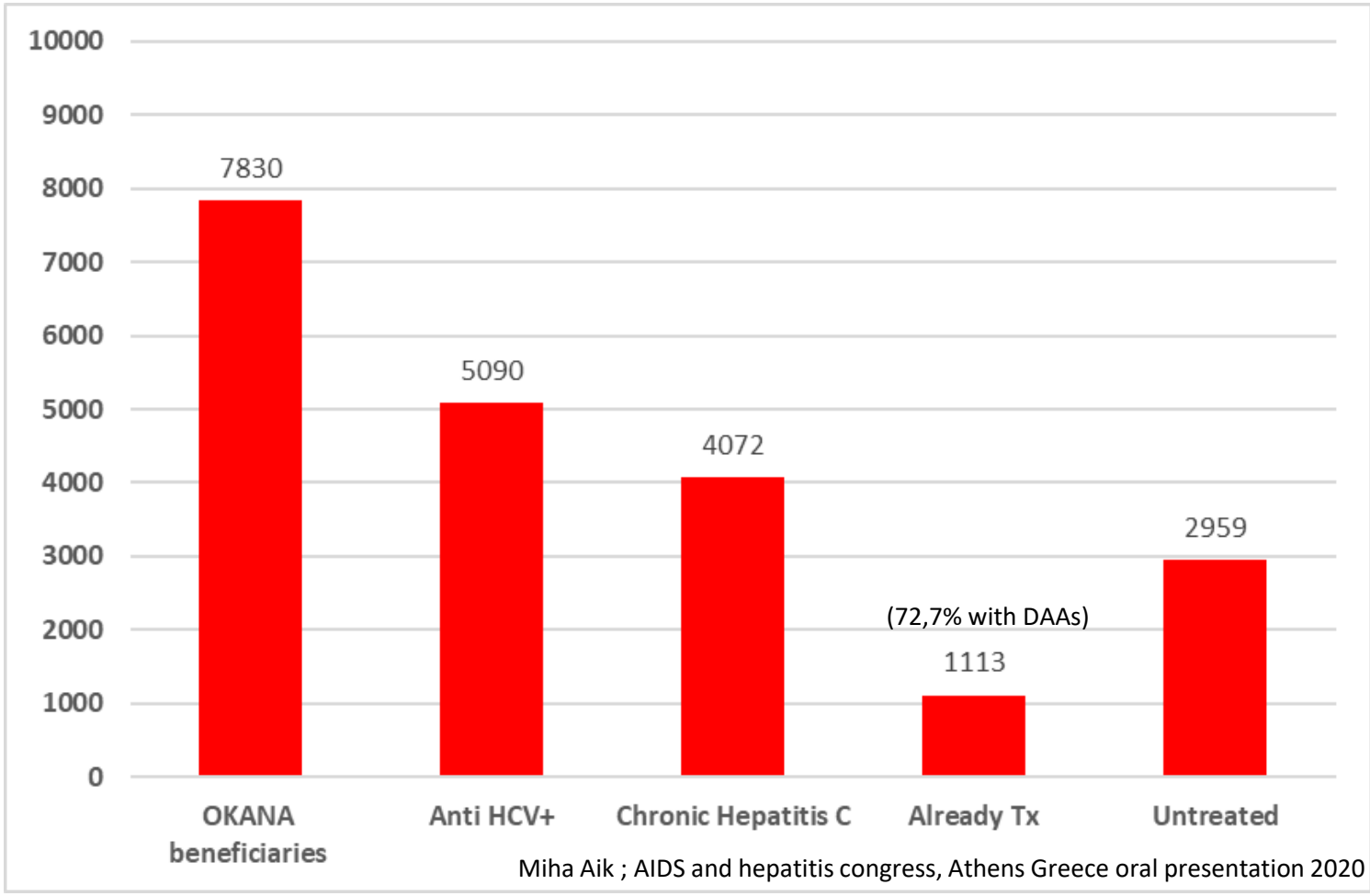
Lazarus et al. 2017

The elimination target can best be achieved through the implementation of microelimination strategies.

Introduction (2)

Papatheodoridis et al. 2019

Although Greek patients had universal access to DAAs since September 2018, the treatment uptake rates among PWID remain suboptimal



Miha Aik ; AIDS and hepatitis congress, Athens Greece oral presentation 2020

The Organization Against Drugs (OKANA) is the sole provider of oral substitution therapy (OST) in Greece with 7,830 beneficiaries with 65% of them being anti-HCV

27,3% of the OKANA CHC beneficiaries have ever been treated

The Tityus program

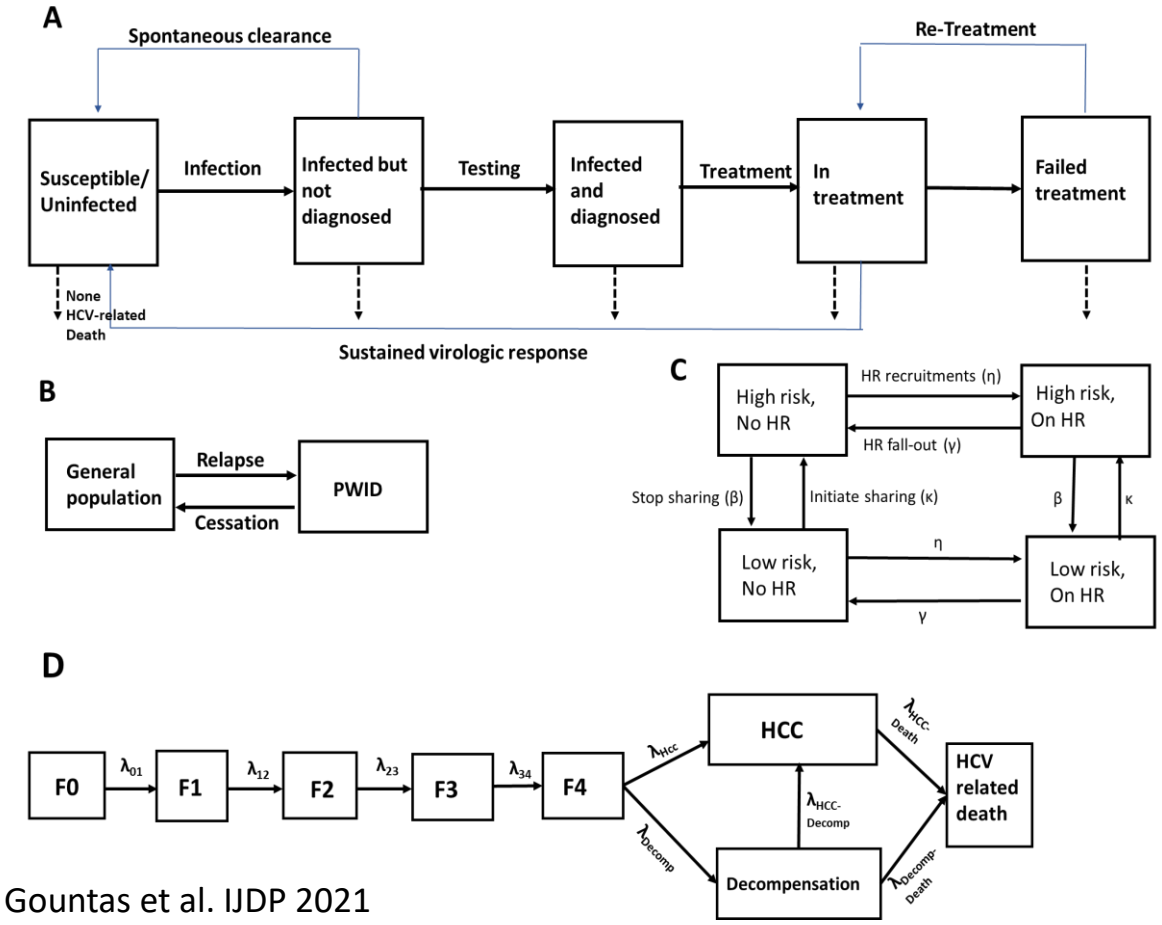
The Giant Tityos was doomed to endure the torment of immobility while every day two vultures devoured his liver. Every night, the liver was regenerated to repeat the punishment the next day.

- HCV treatment uptake among PWID remains low due to both **system, and patient-level barriers.**
- **Before antiviral treatment initiation**, PWID usually undergo a test to detect HCV antibodies, an HCV RNA test, a fibrosis assessment, and finally a genotype test.
- An attractive approach, that could remove many of the aforementioned barriers, is all the procedures to be implemented **within community addiction centers.**
- In response to that problem, the **Hellenic Association for the study of the liver** and **OKANA** with the support of the **Gilead Sciences Hellas** will implement the Tityus program.
- **Tityus is a fast-track 1-year national HCV micro-elimination program** in which all the pre-treatment diagnostic procedures as well as the treatment initiation will be implemented within the OKANA Units, without any additional needs for traveling and/or appointments.

Aim and Methods

The aim of this study is to present the health-economic evaluation of Tityus compared to OKANA standard of care (SOC) and to a counterfactual scenario where treatment uptake would be similar to the general population (GP).

Methods



Gountas et al. IJDP 2021

Examined scenarios

Scenario 1 Status Quo

Represents the current HCV management strategy. 405 Tx/year, SVR 90%

Scenario 2 Tityus

Tx all the estimated Chronic HCV PWID within 1 year (1000 in 2021 & the rest in 2022), SVR 95%

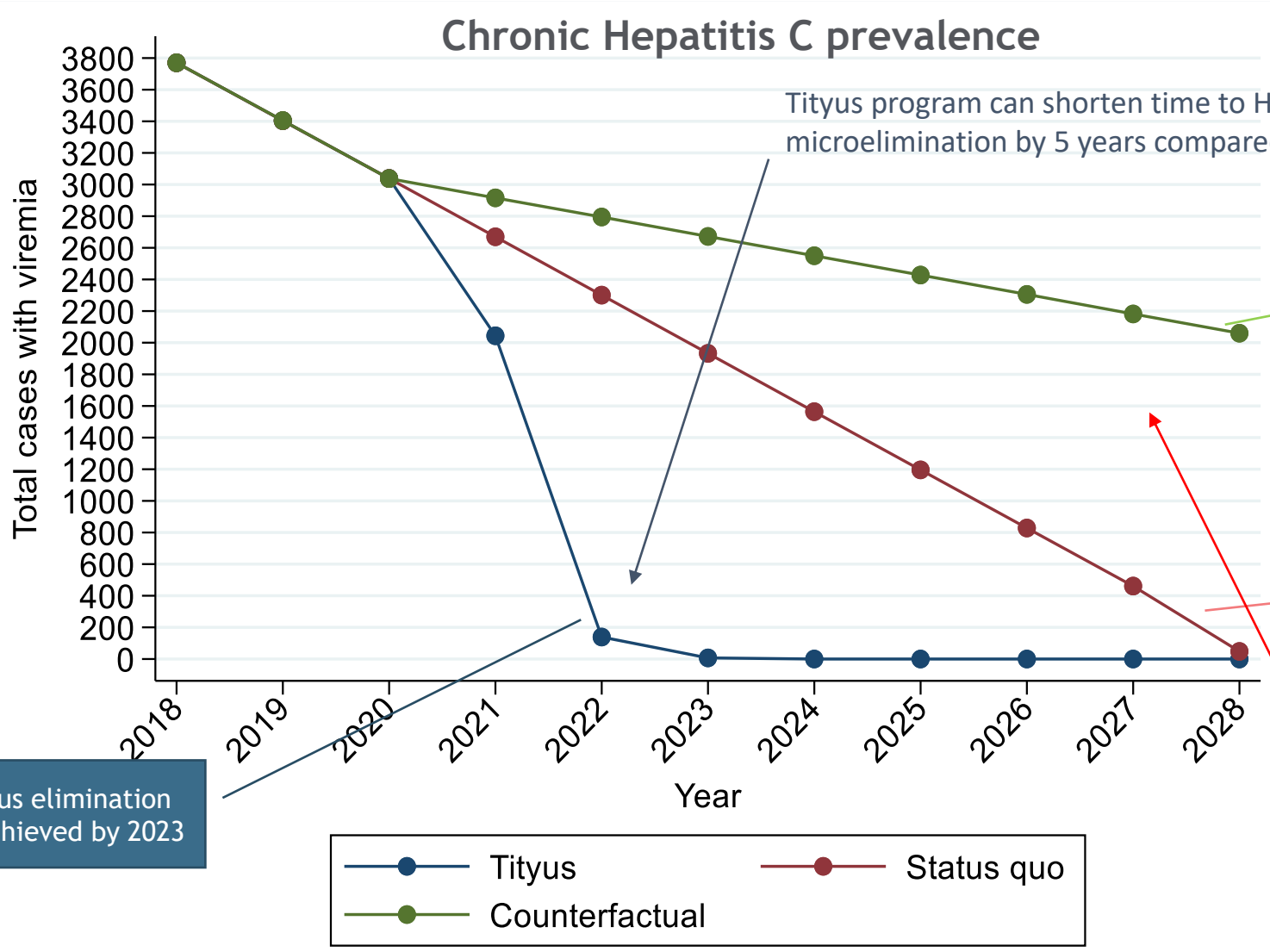
Scenario 3 Counterfactual

PWID receives DAAs treatment at a pace similar to the general population (no OKANA effect). 130* Tx per year, SVR 90%

*3.5% of the infected population were treated every year before the COVID-19 pandemic

Results

The Tityus program: Expected public health results (1)



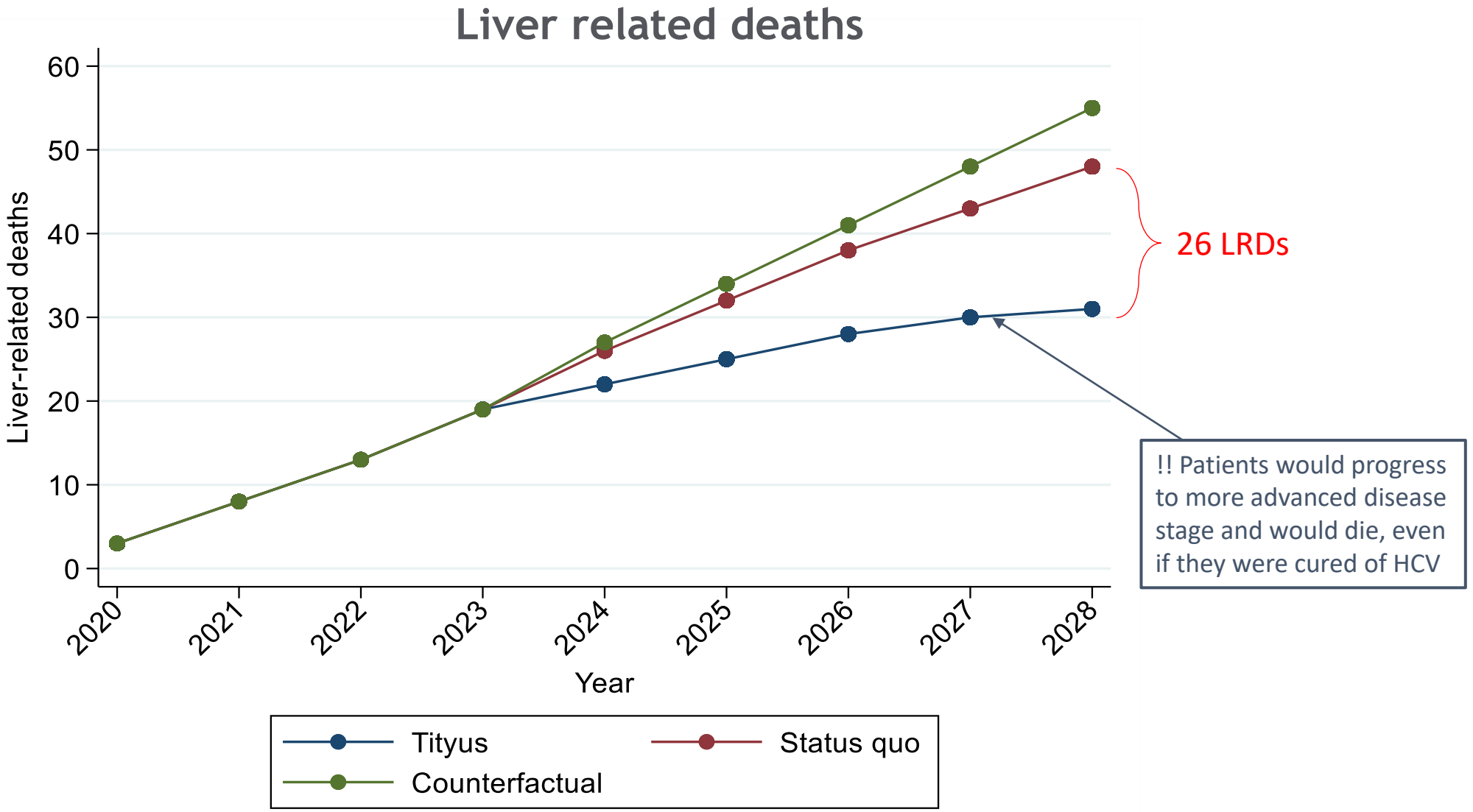
Under counterfactual elimination would be achieved by 2045

Under status quo elimination would be achieved by 2028

Under Tityus elimination would be achieved by 2023

OKANA's contribution regarding the elimination of HCV is remarkable compared to low treatment rates of the general population

The Tityus program: Expected public health results (2)



Health benefits amongst people who inject drugs for different scenarios by 2028. Ranges in the brackets correspond to the 95% credibility intervals.

	Tityus	Status quo	Counterfactual e.g. (General population)
Cumulative cirrhosis	123 (101, 144)	268 (245, 301)	388 (366, 423)
Cumulative decompensated cirrhosis	65 (52, 82)	130 (113, 155)	175 (149, 199)
Cumulative Liver deaths	31 (20, 43)	49 (38, 60)	60 (44, 70)
Cirrhosis avoided vs. Tityus scenario	NA	180 (142, 227)	300 (255, 360)
Decompensated cirrhosis avoided vs. Tityus scenario	NA	65 (37, 91)	110 (78, 135)
Liver deaths avoided vs. Tityus scenario	NA	26 (5, 37)	35 (12, 50)

The Tityus program: Expected cost savings

Tityus vs Status Quo	Healthcare saving (in €)
Treatment costs	1,50
Medical costs: F0-F4 patients	1,78
Medical costs: Patients with decompensated cirrhosis	1,4
Medical costs: Patients with HCC	1,65
Total savings	**6,33**

4,83

The costs are calculated for the years 2021-2028

Tityus is cost-saving intervention compared to SOC **mainly due to the prevention of life threating and costly HCV complications.**

Conclusions

- OKANA’s contribution towards the elimination of HCV is remarkable compared to the treatment rates of the general population.
- The additional implementation of the Tityus program will make OKANA's contribution to support National HCV elimination even more impressive.
- Tityus program can shorten time to HCV micro-elimination in Greek OST Units by 5 years compared to SOC
- Tityus is cost-saving (€6,33M) compared to SOC mainly due to the prevention of life-threating and costly HCV complications.
- The successful completion of the Tityus project would act as a proof-of-concept that HCV elimination can be achieved and will inspire other similar micro-elimination interventions that will help Greece to achieve the National HCV Elimination targets.

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Appendix

Inputs and Assumptions

Fibrosis stage[1]	%
F0-F1	51%
F2	17%
F3	11%
F4	21%
Decompensated cirrhosis- F4	7%

Multicenter study on the clinical and epidemiological characteristics of **800 HCV-PWID followed in six hepatology clinics**

Annual costs[2], €	
Lab costs for anti-HCV, RNA test, genotyping exam and liver biopsy/elastography	350
Cost per diagnosed patient without antiviral treatment	
F0-F3	230
Compensated cirrhosis, F4	1340
Decompensated cirrhosis	4460
Hepatocellular carcinoma	33000
Estimated average antiviral treatment costs of DAAs	10000

Assumptions

We assume that:

A. PWID who fail treatment can be retreated

B. No risk of re-infection. PWID of OKANA are not taking part in high-risk behaviors for HCV (expert opinion)

1. Kranidioti et al. Ann Gastroenterol. 2018, 2. Gountas et al. WJG 2019