

Hepatitis C Infection in the Eastern Mediterranean Region: The Current Burden of Disease and a Road Map for Achieving the WHO Global Health Sector Strategy Targets



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BACKGROUND

The development of direct acting anti-viral (DAA) therapy significantly expanded the possibilities for managing the hepatitis C virus (HCV) among populations, and the 69th World Health Assembly recognized this by passing a resolution to eliminate HCV by 2030. Epidemiological assessment and predictive modeling are needed at the national and regional levels to develop strategies to achieve this goal. In 2015, the World Health Organization (WHO) Eastern Mediterranean Region (EMRO) had the highest HCV prevalence rate and number of infections among all WHO regions¹.

OBJECTIVE

This study quantifies the current HCV disease burden in the EMRO region and proposes a strategy for achieving the WHO Global Health Sector Strategy (GHSS) targets for hepatitis – diagnose 90% of infections, reduce new infections by 90%, reduce mortality by 65% – by 2030².

METHODS

20 EMRO country-specific disease progression models were aggregated into a regional model, and regional averages were applied to country populations when country-specific data were not available. An intervention scenario was developed within the model to achieve projected outcomes that meet the GHSS targets.

Table 1. 2016 EMRO Model Inputs

EMRO Model Parameters (2016)	Value
Total Viremic Population	14,121,000
Viremic Prevalence	2.3%
Viremic Diagnosed	2,463,000
Annual Newly Diagnosed	639,000
Number Treated	759,000
Treatment Rate	5.4%

RESULTS

Base Case

- In 2016, there were an estimated 14.1 million viremic infections in the EMRO region, equating to a 2.2% prevalence. Of these, 65% of all infections were found in those born between 1953 and 1993. More than 17% of all infections have been diagnosed, or approximately 2.5 million cases. More than 5% of the infected population (759,000) was treated in 2016, and of these, 81% (618,000) were cured.
- Given the current standard of care over the next 15 years, the total HCV-infected population in the EMRO region is expected to decrease by an estimated 28% by 2030, from 14.1 million to 10.2 million infections. Liver-related morbidity and mortality is forecast to increase 4%-6% over the next 15 years.

WHO Targets

- To achieve the WHO targets, annual treatment rates would not need to increase, however the number of patients linked to care would need to slightly increase. The average sustained virological response (SVR) would need to increase from 81% to 95%, and age restrictions would need to be discontinued by 2018.
- Under the WHO Targets scenario, significant decreases in HCV-related disease burden are expected. Total viremic infections are projected to decline by 71% by 2030, from 14.1 million to 4.1 million infections. Decompensated cirrhosis cases, hepatocellular carcinoma (HCC) cases, and liver-related deaths will decline by 60%-65% by the same year. By achieving the WHO targets, more than 330,000 lives can be saved.

Table 2a. Annual Treatment Paradigm, Base Case

	2016	2017	2018	2019	≥2020
Treated (000)	759	663	569	474	379
Newly Diagnosed (000)	639	639	639	639	639

Table 2b. Annual Treatment Paradigm, WHO Targets

	2016	2018	2020	2022	≥2025
Treated (000)	759	725	700	700	680
Newly Diagnosed (000)	639	700	750	850	860

Figure 1. Morbidity and Mortality, 2016-2030

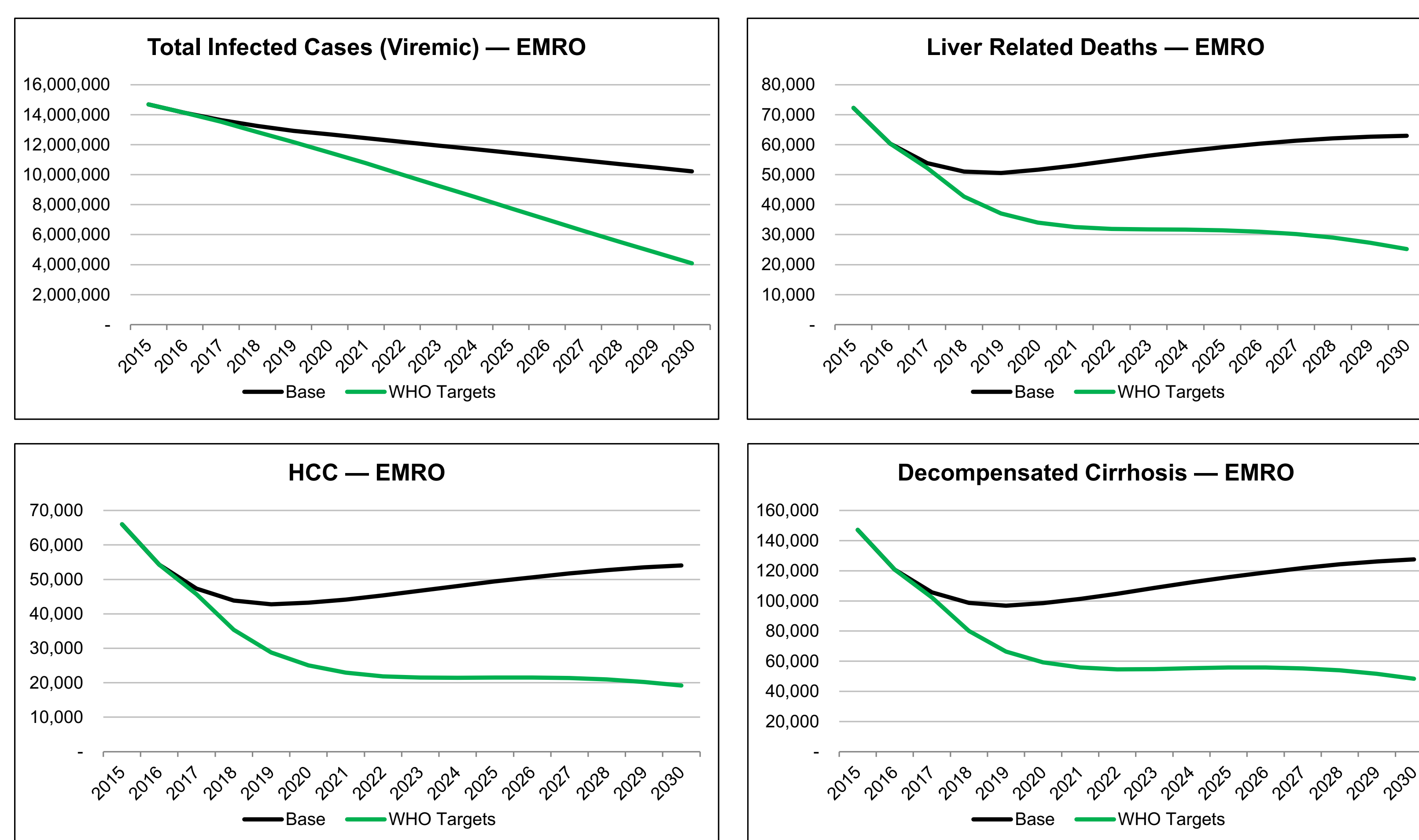
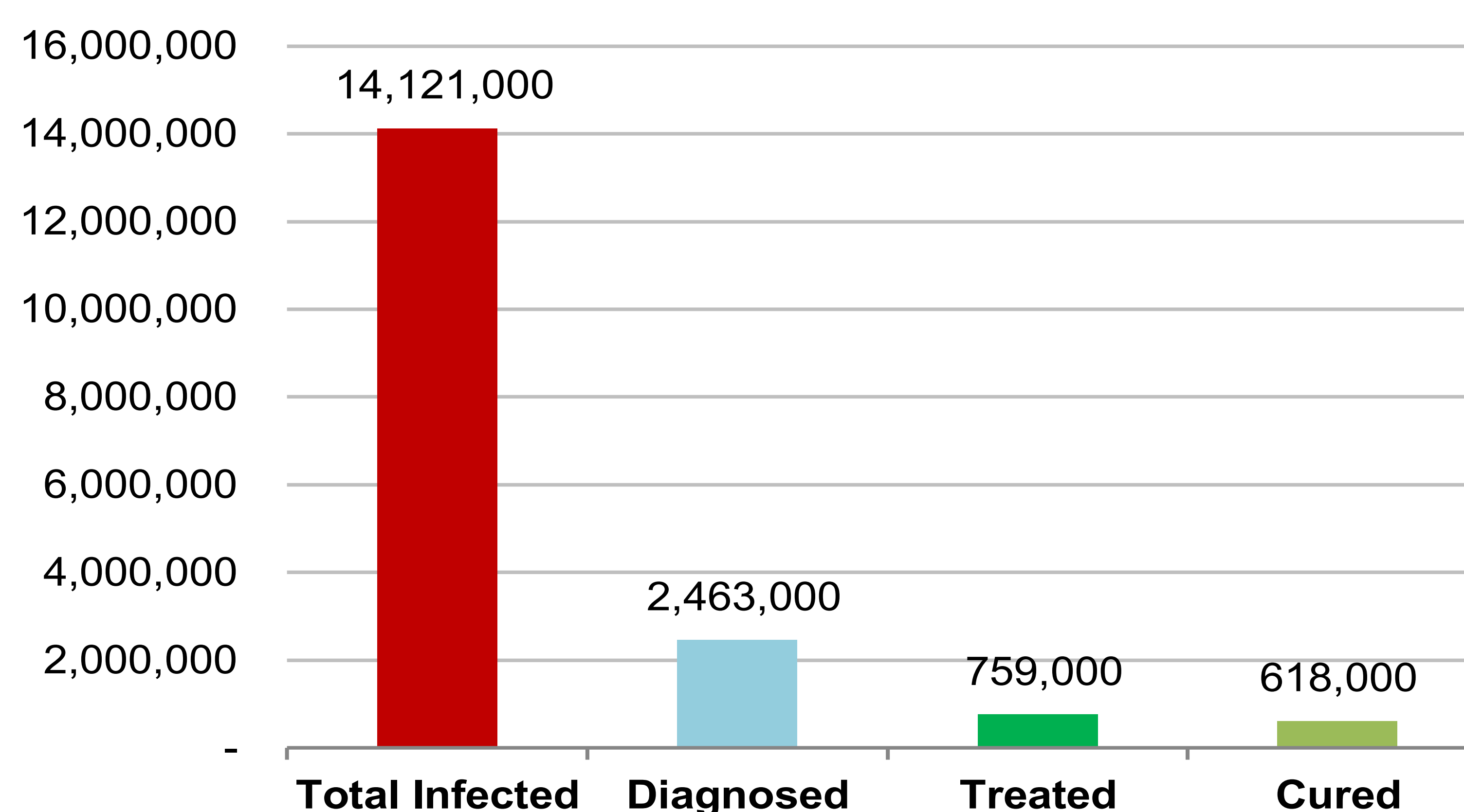


Figure 2. HCV Cascade of Care, EMRO 2016



CONCLUSIONS

HCV-related liver disease and mortality are not expected to decline in the EMRO region even though total viremic prevalence is projected to decrease 30% over the next 15 years. To significantly reduce the disease burden and achieve the WHO targets, a focus should be placed on maintaining high treatment rates by identifying and linking patients to care and expanding treatment eligibility.

REFERENCES

- Global Hepatitis Report 2017. Geneva: World Hepatitis Organization; 2017.
- Global Health Sector Strategy on Viral Hepatitis 2016-2021. Geneva: World Hepatitis Organization; 2017

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