

# Quantifying the Impact of Achieving the World Health Organization Global Health Sector Strategy Targets for Hepatitis C in the South East Asia Region

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## BACKGROUND

The development of direct acting anti-viral (DAA) therapy drastically shifted the treatment paradigm for the Hepatitis C virus (HCV) from disease management to elimination. An understanding of the disease burden is necessary to develop evidence-based public health strategies for elimination of HCV. In 2015, an estimated 10 million people were estimated to be living with HCV in the World Health Organization (WHO) South East Asia Region (SEARO)<sup>1</sup>, and HCV was responsible for approximately 408,000 deaths that year, the second highest number of deaths of any WHO region<sup>1</sup>.

## RESULTS

### Base Case

- In 2016, there were an estimated 10.3 million viremic infections in the SEARO region, equating to a 0.5% prevalence. Of these, 60% of all infections were found in those born between 1954 and 1984. Less than 10% of all infections have been diagnosed, or approximately 887,000 cases. 1% of the infected population is on treatment (123,000), and of these, 97% have been cured (119,000).
- Given the current standard of care over the next fifteen years, the total HCV-infected population in the SEARO region is expected to decrease by an estimated 1% by 2030, from 10.3 million to 10.2 million infections. Liver related morbidity and mortality is forecast to increase 60-70% over the next fifteen years.

### WHO Targets

- To achieve the GHSS targets, a significant increase in total number of patients screened and linked to care is necessary. The number of individuals diagnosed annually would need to increase to 800,000 by 2021 and the number of patients treated annually to 775,000 by 2025.
- Under the WHO Targets scenario, significant decreases in HCV-related disease burden are expected. Viremic infections are forecast to decline by 85% by 2030, from 10.3 million to 1.7 million infections. Decompensated cirrhosis cases, hepatocellular carcinoma cases, and liver-related deaths will decline by 65%-70% by the same year. By achieving the WHO targets, more than 345,000 lives can be saved.

## OBJECTIVE

We forecast the current and future disease burden of HCV in the SEARO region and developed a strategy to achieve the WHO Global Health Sector Strategy (GHSS) targets for hepatitis C by 2030<sup>2</sup>.

## METHODS

Nine SEARO country-specific models were built, and regional averages were applied to country populations when country-specific data were not available. Country estimates were then aggregated into a regional disease burden model. This disease progression model was used to quantify the size of the HCV-infected population by HCV sequelae from 2016 through 2030.

**Table 1.** 2016 SEARO Model Inputs

SEARO Model Parameters (2016)	Value
Total Viremic Population	10,314,000
Viremic Prevalence	0.5%
Viremic Diagnosed	887,000
Annual Newly Diagnosed	74,000
Number Treated	123,000
Treatment Rate	1.2%

**Table 2a.** Scenario-Specific Treatment Parameters, Base 2016

	2016	2017	2018	2019	≥2020
Treated	123,000	108,000	92,200	76,900	61,500
Newly Diagnosed	74,000	77,000	77,000	77,000	77,000
Fibrosis Stage	≥ F0	≥ F0	≥ F0	≥ F0	≥ F0
Treated Age	20-69	20-69	20-69	20-69	20-69
SVR	97%	97%	97%	97%	97%

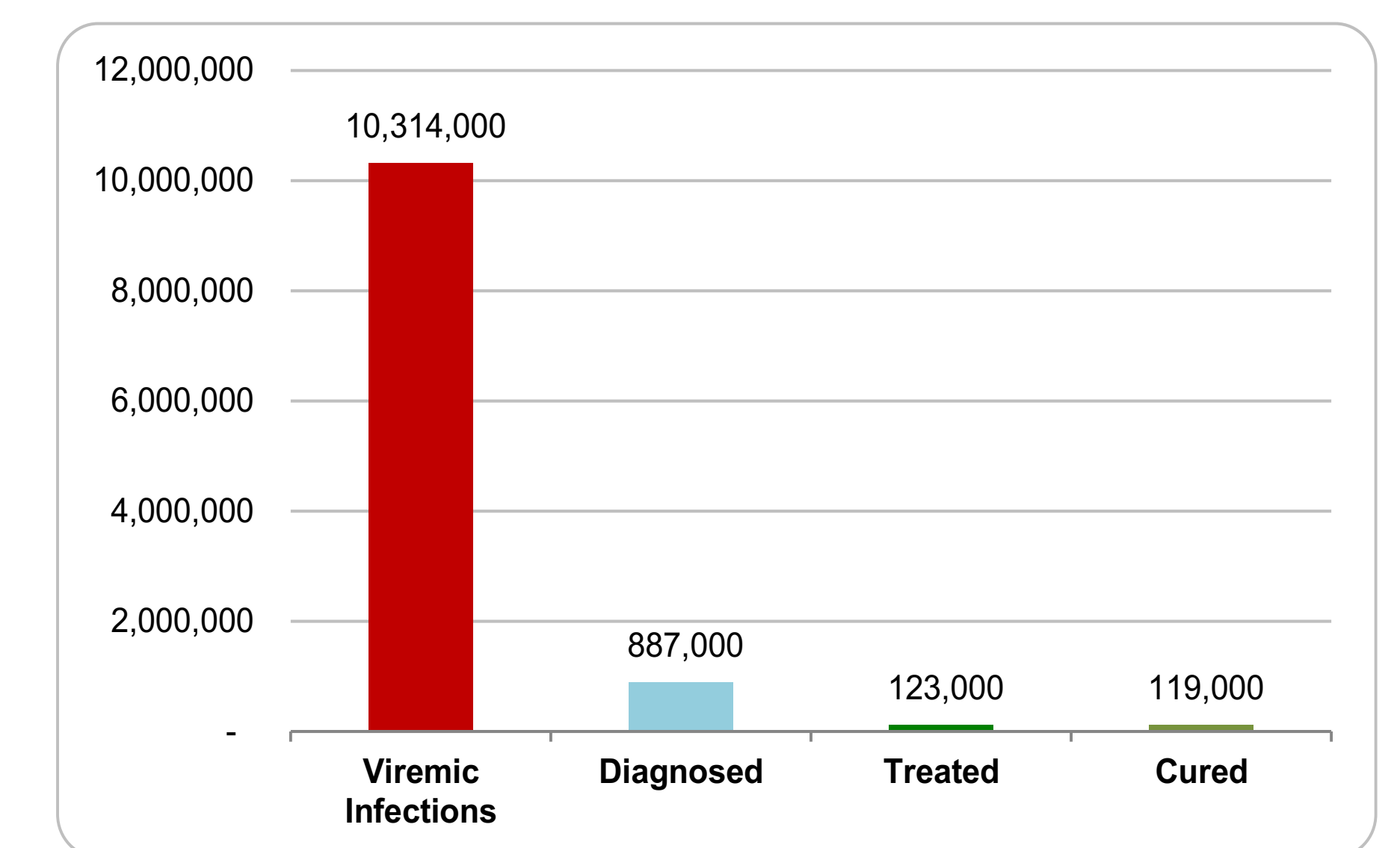
**Table 2b.** Scenario-Specific Treatment Parameters, WHO Targets

	2016	2019	2020	2021	2022	≥2025
Treated	123,000	350,000	500,000	550,000	725,000	775,000
Newly Diagnosed	74,000	405,000	700,000	800,000	800,000	800,000
Fibrosis Stage	≥ F0	≥F0	≥F0	≥ F0	≥ F0	≥F0
Treated Age	20-69	20-74	20-74	20-74	20-74	20-74
SVR	97%	97%	97%	97%	97%	97%

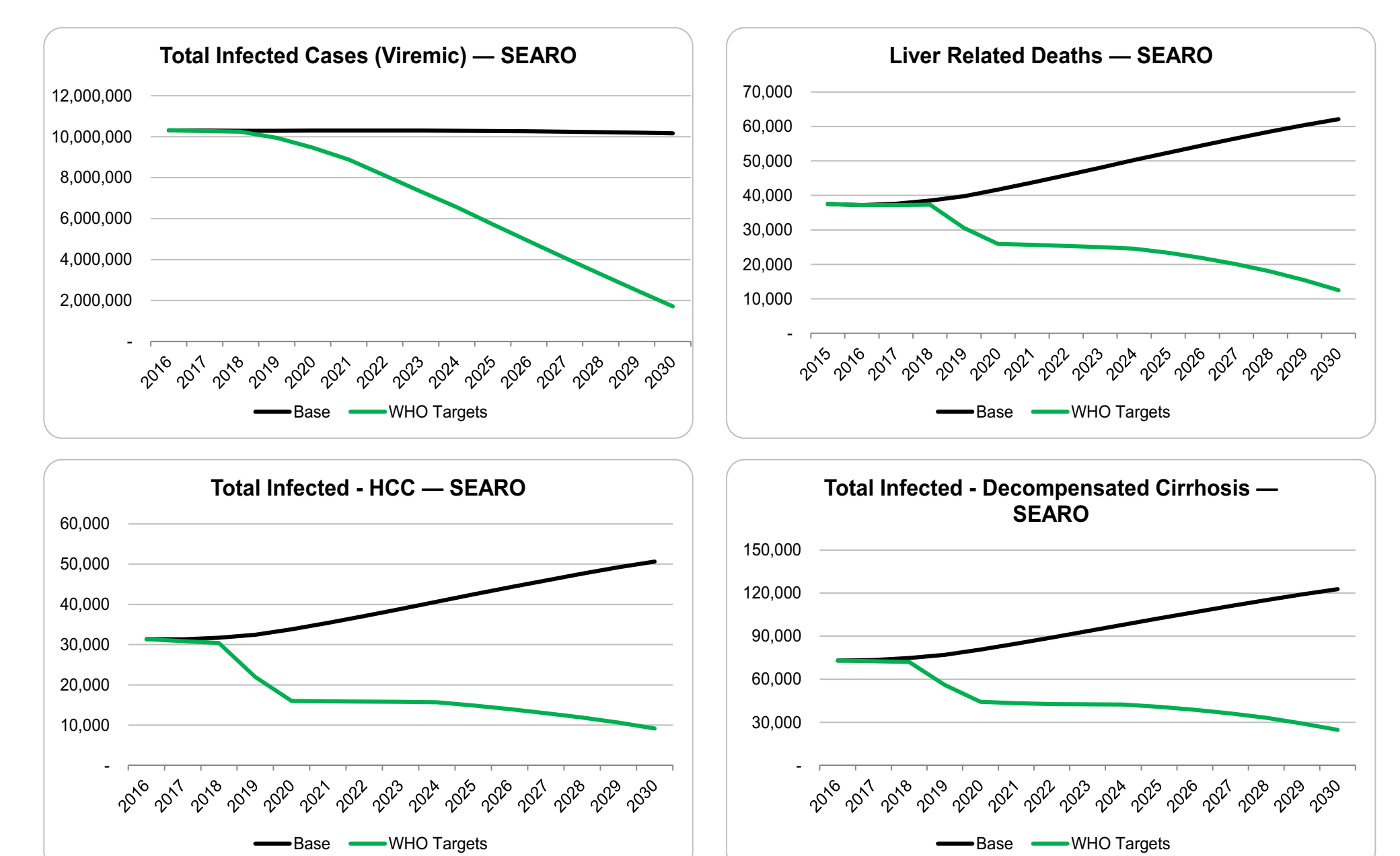
## REFERENCES

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

**Figure 1.** HCV Cascade of Care, SEARO 2016



**Figure 2.** Morbidity and Mortality, 2016-2030



## CONCLUSIONS

Total viremic infections are expected to decrease minimally (by 1%) in the SEARO region over the next two decades. The WHO GHSS targets can be achieved if drastic increases in the number of diagnosed and linked-to-care patients are seen. Targeted screening strategies coupled with increased access to DAA therapy are needed to achieve these targets.

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