

# Quantifying the Impact of Achieving the World Health Organization Global Health Sector Strategy Goals for Hepatitis C in the AFRO Region

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## INTRODUCTION

The development of direct acting anti-viral (DAA) therapy drastically shifted the current treatment paradigm for the Hepatitis C virus (HCV) from disease management to elimination. An understanding of disease burden is necessary in order to create evidence based public health strategies for elimination of HCV. The AFRO region has one of the highest incidence rates of Hepatitis C worldwide. In 2015, approximately 136,000 deaths, or 10% of the total 1.34 million reported deaths due to HCV that year, occurred in the AFRO region [1].

## AIM

We forecast the current and future disease burden of HCV in the AFRO region and developed a strategy to achieve the World Health Organization (WHO) Global Health Sector Strategy (GHSS) Goals for Hepatitis by 2030 [2]

## METHODS

- 35 AFRO-country specific models were built and regional averages were applied to country populations when country-specific data was 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.

AFRO-Specific Parameters in Model (2016)	Value
Total Viremic Population	11,599,000
Viremic Prevalence	1.1%
Viremic Diagnosed	695,000
Annual Newly Diagnosed	25,000
Number Treated	50,900
Cured	40,100

## RESULTS

### Disease Burden – Base Case

- In 2016, there were an estimated 11.6 million viremic infections in the AFRO region, or a prevalence rate of more than 1%. Of these infections, more than 65% were found in those born between 1953 and 1988. A little more than 5% of all infections have been diagnosed (695,000 cases). Less than 1% of the infected population is currently on treatment (50,900) and of these, more than three-fourths (79%) have been cured.
- Relative to the current standard of care over the next fifteen years, the total HCV-infected population in the AFRO region is expected to decrease by less than 10% by 2030. Total cases of hepatocellular carcinoma (HCC) are expected to decline by 5% over the next 15 years, while decompensated cirrhosis cases and liver related mortality will increase 1- 2% by 2030.

Table 2a. Inputs of the Base Scenario

	2016	2017	2018	2019	2020	≥2025
Treated	50,900	44,500	38,100	31,800	25,400	25,400
Newly Diagnosed	25,000	25,000	25,000	25,000	25,000	25,000
Fibrosis Stage	≥F0	≥F0	≥F0	≥F0	≥F0	≥F0
Treated Age	20-69	20-69	20-69	20-69	20-69	20-69
SVR	79%	79%	79%	79%	79%	79%

Table 2b. Inputs of the WHO Targets Scenario

	2016	2018	2020	2022	2024	≥2025
Treated	50,900	300,000	500,000	700,000	700,000	700,000
Newly Diagnosed	25,000	500,000	1,000,000	1,300,000	1,250,000	500,000
Fibrosis Stage	≥F0	≥F0	≥F0	≥F0	≥F0	≥F0
Treated Age	20-69	20-69	20-69	15-74	15-74	15-74
SVR	79%	95%	95%	95%	95%	95%

### Disease Burden – WHO Targets

- To achieve the GHSS goals, 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 1.3 million by 2022 and the number of patients treated annually will need to reach 700,000 patients by the same year.
- Under this scenario, HCV related disease burden will decline substantially. By 2030, total viremic infections are forecasted to decrease by 75% to 3 million infections. Decompensated cirrhosis and HCC cases are also expected to decline by 65%, to 37,800 and 15,500 cases, respectively by the same year. Liver related deaths will decline by 65% by 2030, saving more than 320,000 lives.

Figure 1. HCV Cascade of Care, 2016

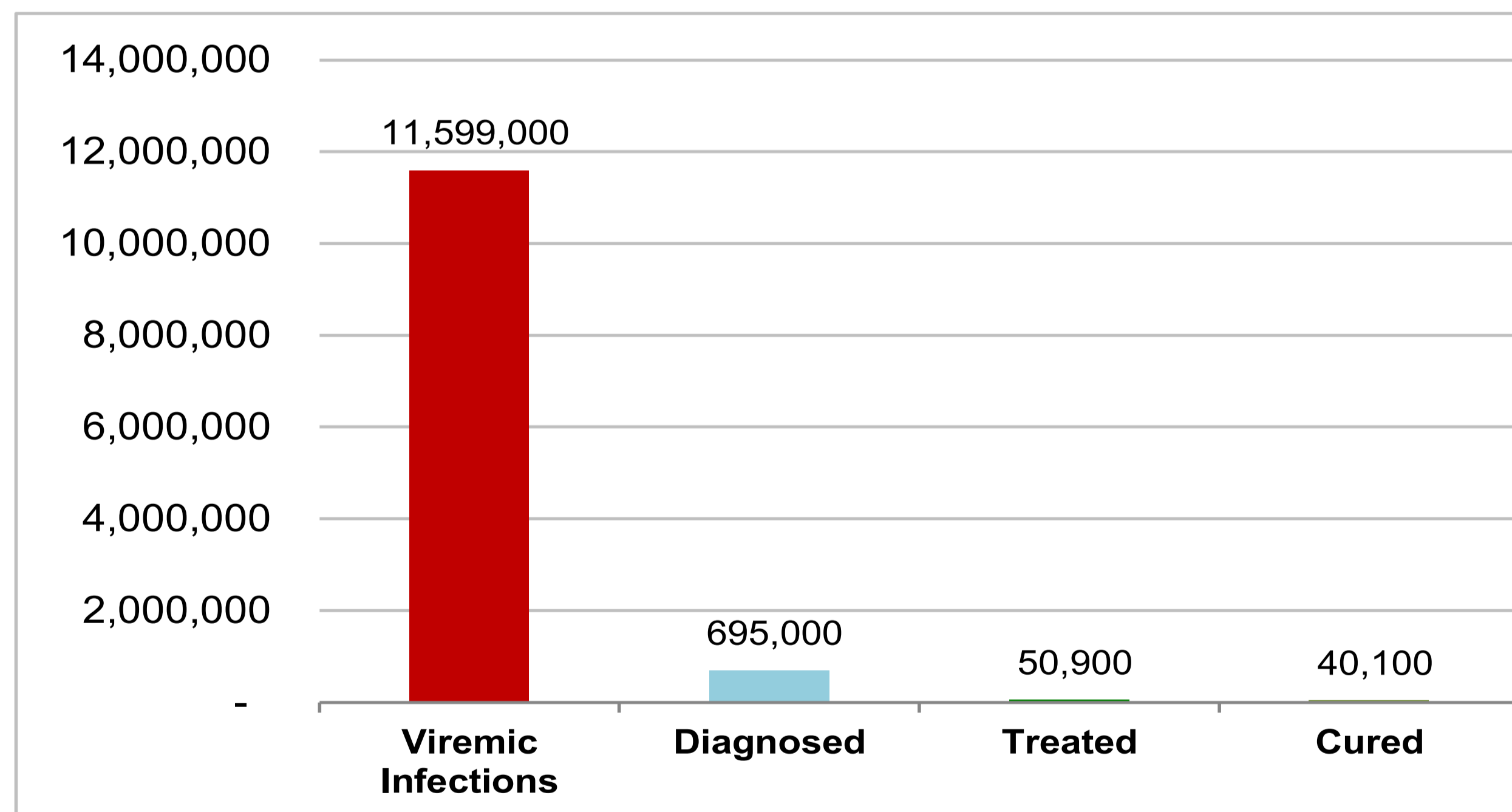


Figure 2. Total Viremic Cases by 5-year Age Cohort, 2016

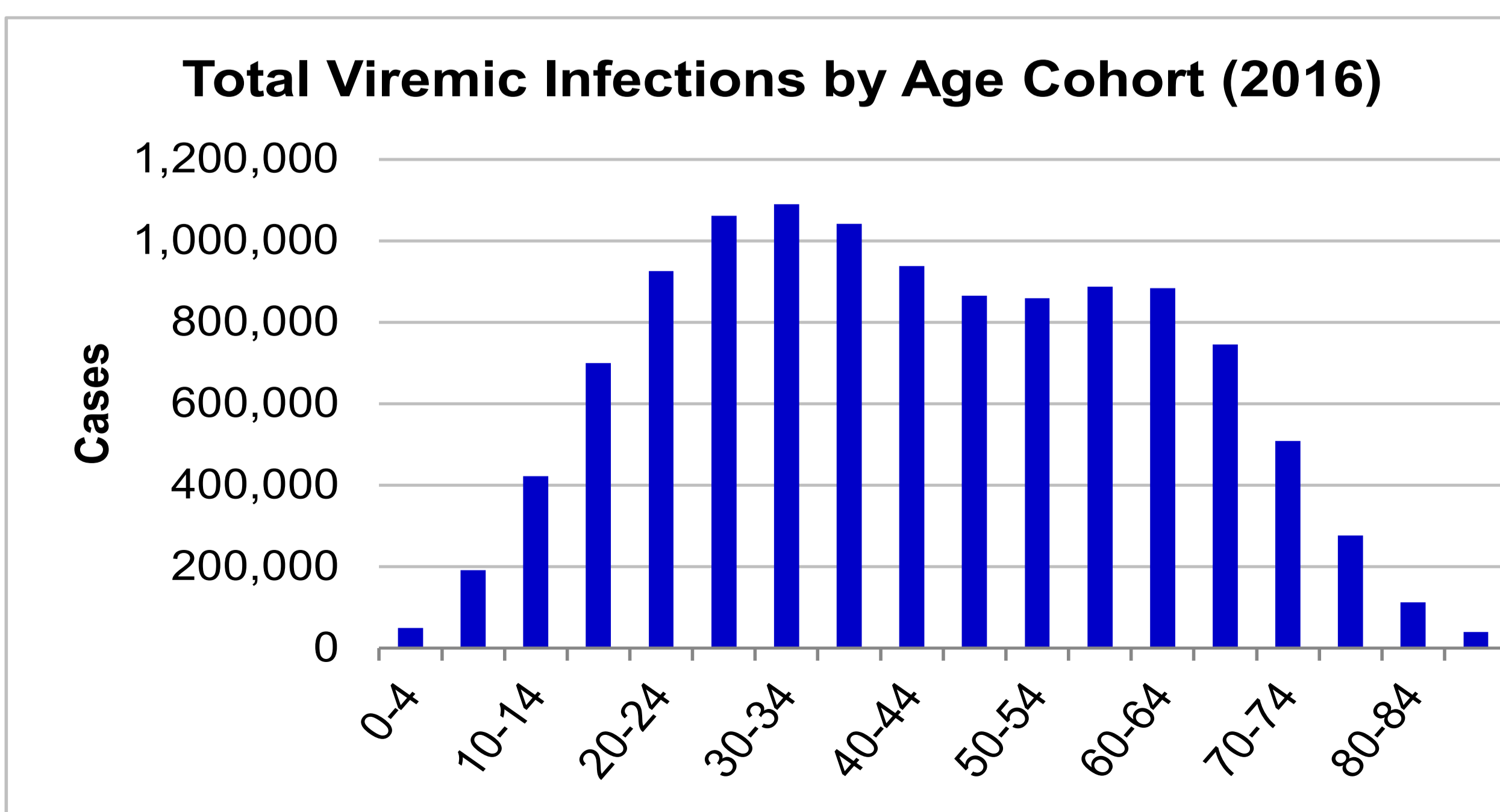
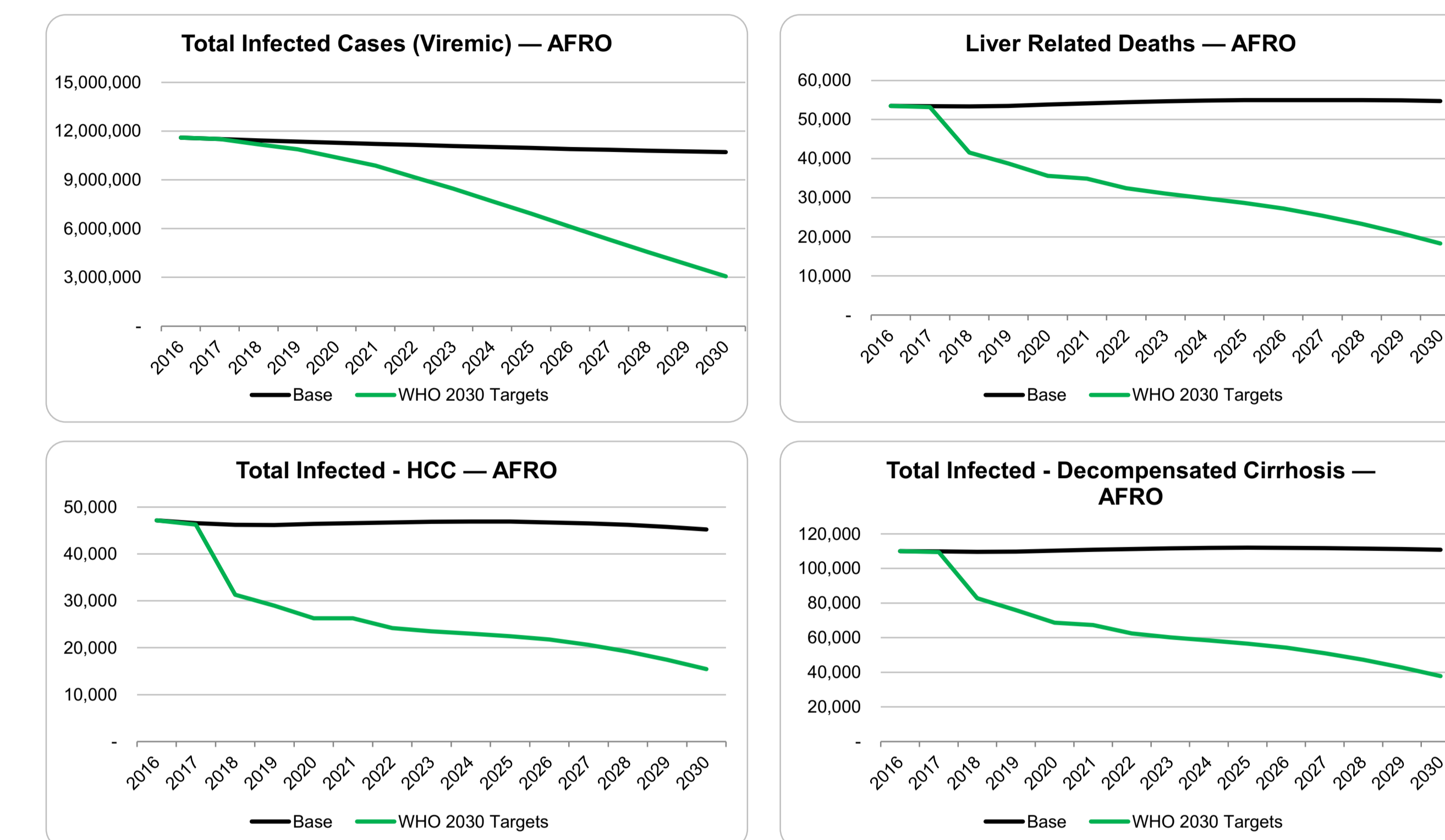


Figure 3. HCV related Morbidity and Mortality, 2016-2030



## CONCLUSIONS

- Total viremic infections are expected to decline minimally in the AFRO region over the next two decades.
- The WHO Goals can be achieved if drastic increases in the number of diagnosed and linked-to-care patients are met. Targeted screening strategies coupled with increased access to DAA therapy are needed to achieve these goals.

## ACKNOWLEDGEMENTS

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## REFERENCES

- Global Hepatitis Report 2017; Geneva: World Health Organization; 2017.
- WHO. Global Health Sector Strategy on Viral Hepatitis, 2016–2021 Towards Ending Viral Hepatitis: World Health Organization, 2016.

## CONTACT INFORMATION

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