Estimates and projection of disease burden and economic analysis for hepatitis C in Viet Nam

Van Thi Thuy Nguyen[1], Tran Dai Quang[2], Nguyen Thu Anh[3], Masaya Kato[1], Le Quang Tan[2], Polin Chan[3], Homie Razavi[4], Tran Dac Phu[2]

1.World Health Organization, Viet Nam Country Office, Hanoi, Viet Nam; 2. General Department for Preventive Medicine, Ministry of Health, Viet Nam; 3. Woolcock Institute Of Medical Research in Viet Nam, University of Sydney, Sydney, Australia; 4. World Health Organization, Regional Office for the Western Pacific, Manila, Philippines; 5. Centre for Disease Analysis , Lafayette, United States

Background

Hepatitis C in Viet Nam is largely driven by injecting drug use. Treatment access to direct acting antiviral (DAA) that cure the infection is limited. However there is lack of data for policy planning of the national response. We conducted an investment case to estimate disease burden and the economic impact of hepatitis C to inform national planning towards the target of elimination of viral hepatitis as a public health threat by 2030.

Method

The Center for Disease Analysis (CDA) HCV Health Policy Tool was used to estimate and project the burden of disease including prevalence of chronic infection, compensated and decompensated cirrhosis, hepatocellular carcinoma (HCC) and associated deaths, disaggregated by sex and age. Economic impact included cost, disease burden reduction and gains in disability-adjusted life years (DALYs) for achieving the elimination goals with the scenario of diagnosing 90% of people living with HCV and treating 80% of the diagnosed by 2030. Input data were obtained from literature review, programme data or expert consensus.

Results

Chronic HCV prevalence was estimated at 1.12% in 2012. In 2017, 991,153 people were estimated to be living with HCV. Hepatitis C-related decompensated cirrhosis, HCC and deaths were 13,756; 5,992 and 6,638, respectively. The prevalence of HCV infection was projected to decline by 10% in 2030. However, if baseline interventions remain the same between 2015 and 2030, the number of people with decompensated cirrhosis, HCC and liver-related deaths would increase by 9%, 11% and 18%, respectively. The economic analysis found HCV infections would decline by 89% and the number of people with HCC, decompensated cirrhosis and liver-related deaths would decline by approximately 65% by 2030 as compared to the 2015 population if testing and treatment is rapidly scaled-up. An investment of 9.5 billion USD over the next 15years is required to achieve these targets. The investment is cost-saving and would contribute to 224,038 new infections averted, 32,843 lives saved, 27,035 HCC averted and 303,160 DALYs saved.

Table 1. Estimated Disease Burden (2017) – Base Scenario

Total # with HCV chronic infection	991,153
Decompensated cirrhosis	13,756
HCC	5,992
Liver-related death	6,638

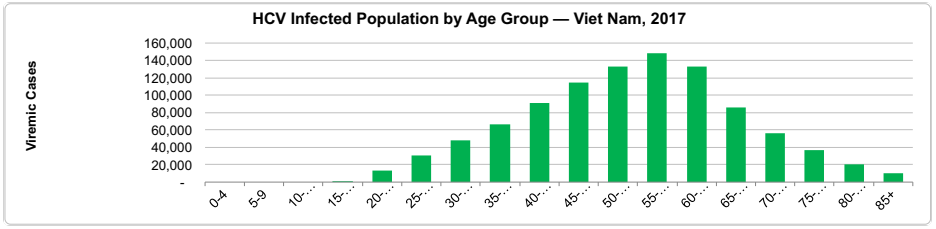

Figure HCV infections by age group in 2017 – Base scenario

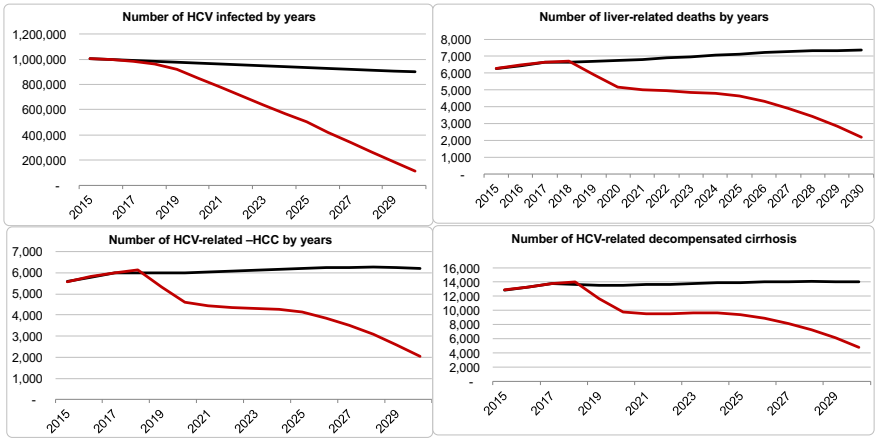

Figure 2. Trend of HCV infection, decompensated cirrhosis, HCC and liver-related death – 70% of WHO Global Elimination Targets 2030 scenario

Table 2. Summary of HCV modeling and analysis of policy scenarios

Output (2015-2030)	Base	WHO Global Elimination Targets 2030
Total cost (billion USD)	7.8	9.5
# liver-related death averted	-	32,843
# of infection prevented	-	224,038
# of HCC averted	-	27,035
# DALY saved	-	303,160
Cost per DALY saved	-	2,987

Conclusion

Viet Nam has a substantial burden of HCV with almost one million people living with hepatitis C. Without investment in scaling-up testing and treatment, advanced liver disease and death will increase in the next 15 years. Increased access to testing and treatment will reduce new infections, burden of disease and death. Investing in a comprehensive HCV response is cost-saving.

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Contact information: Dr Van Thi Thuy Nguyen at nguyenva@wpro.who.int