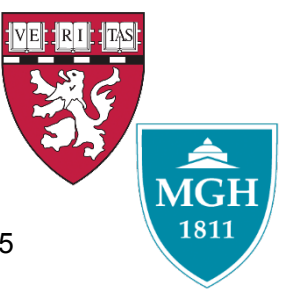


# Hepatitis C Burden in Pakistan: Crisis that Could Be Averted

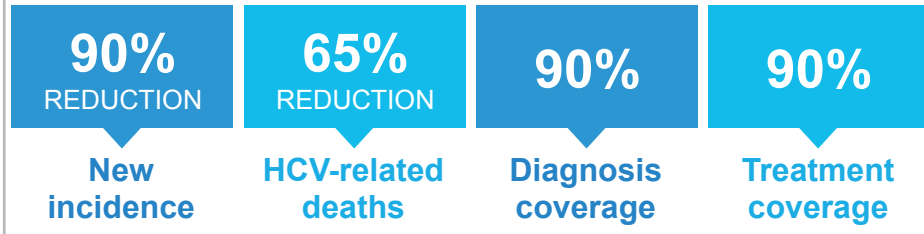


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## BACKGROUND

The World Health Organization (WHO) recently launched a global strategy to eliminate hepatitis C virus (HCV) infection as a public health threat by 2030.



- 90% of the HCV-infected individuals worldwide are unaware of their infection status; but there are no formal recommendations on population-based screening for HCV.
- More than half of HCV infected individuals live in Asia, and **Pakistan has one of the highest prevalence rates of HCV – about 8 million individuals have chronic HCV.**
- Data are needed to inform national screening and treatment guidelines that could lead to HCV elimination in Pakistan by 2030.

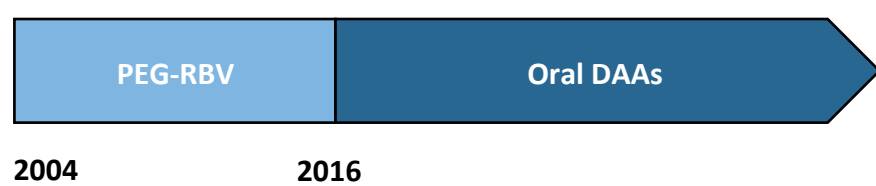
## OBJECTIVE



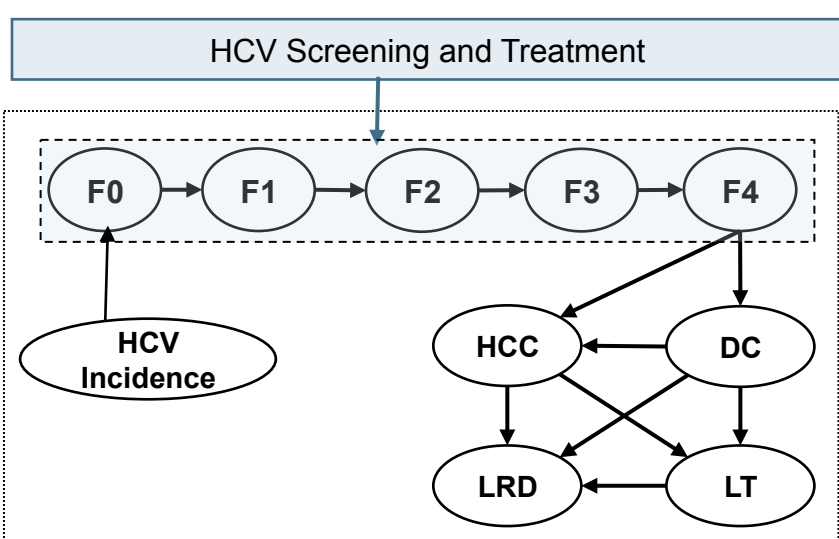
- To project the future burden of HCV disease in Pakistan, under the status quo.
- To investigate whether and under what conditions HCV elimination is feasible in Pakistan by 2030.

## METHODS

- We adapted our previously developed model, **Hepatitis C Disease Burden Simulation model (HEP-SIM)**, to simulate the HCV landscape in Pakistan.
- HEP-SIM was calibrated to the prevalence estimates based on a national survey in 2008.
- The model simulated the actual clinical management of HCV in Pakistan including sporadic HCV testing and antiviral treatment with peginterferon-based therapies during 2004–2015, oral direct-acting antiviral (DAAs) from 2016 and onwards.



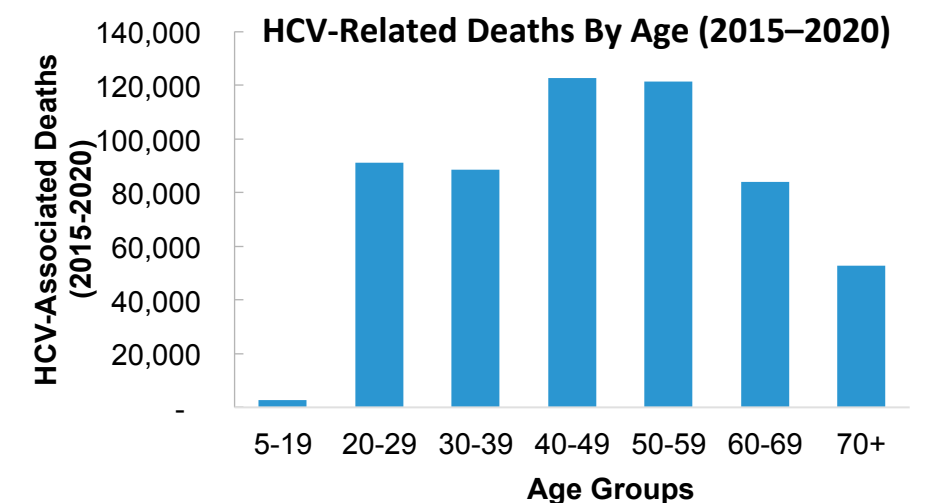
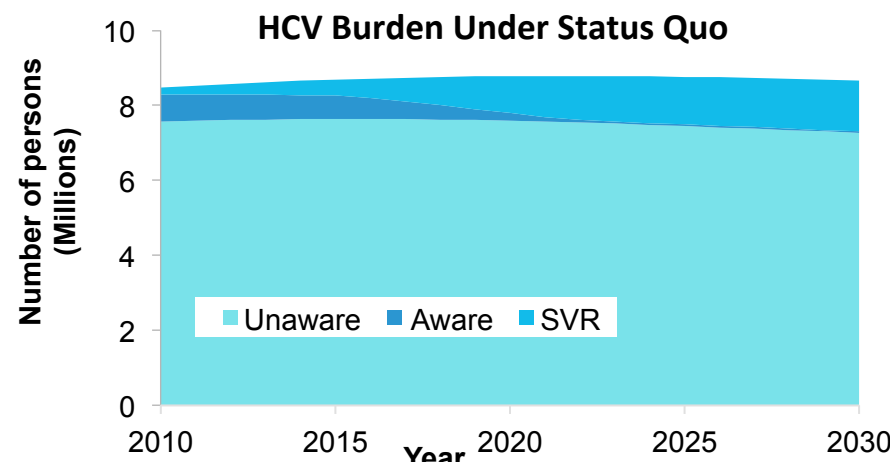
- The natural history of HEP-SIM has been validated using multiple clinical studies.
- We simulated different scenarios of HCV incidence, screening and treatment capacity in Pakistan.



## RESULTS

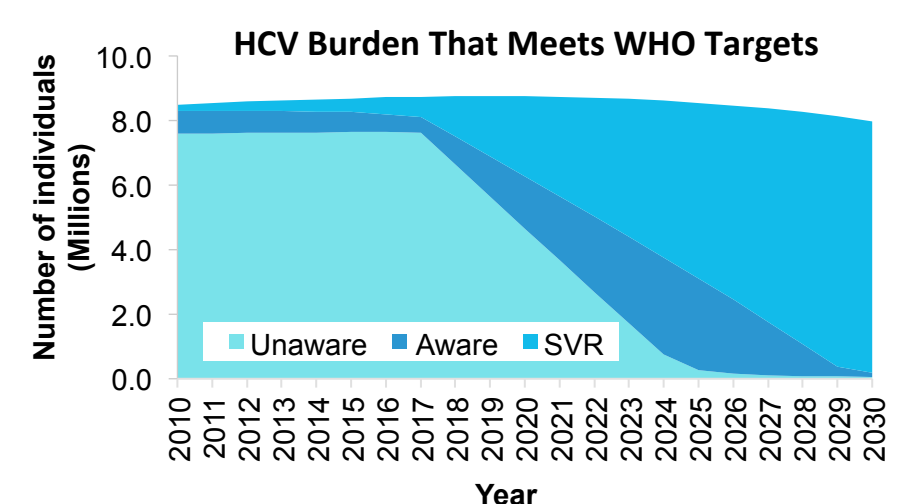
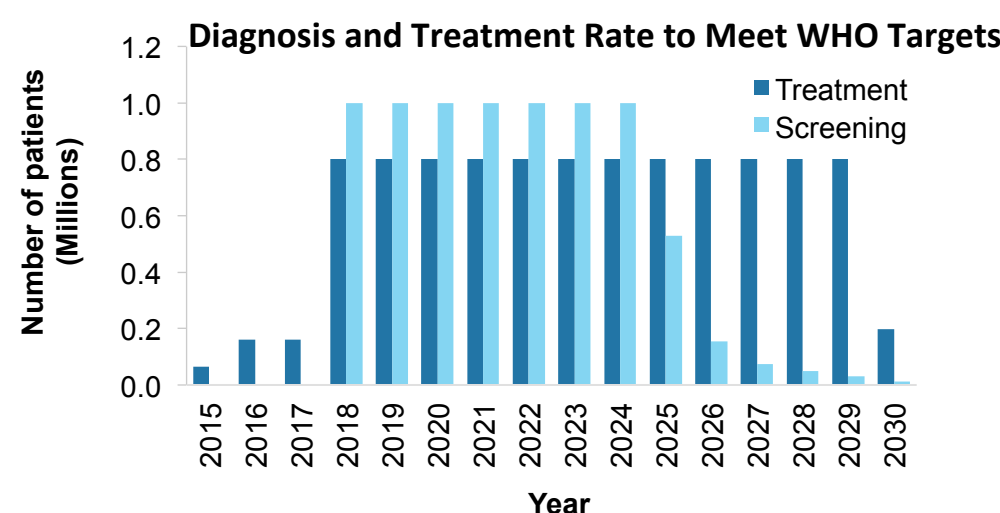
### HCV Burden Under Status Quo

- HCV burden would remain high** under status quo
- The majority would remain unaware** of their infection, so will not receive treatment
- High mortality in younger generation:** The majority of deaths from HCV in Pakistan would occur among those having age less than 50.

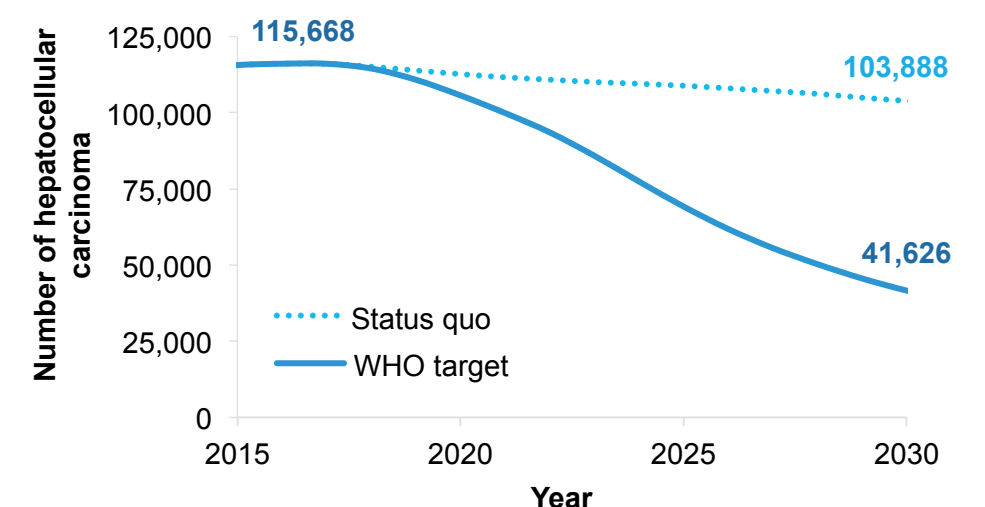
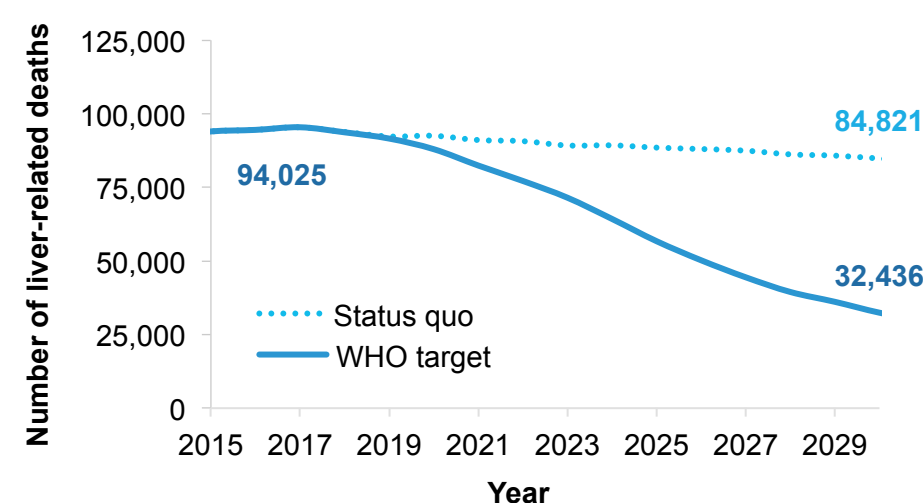


### HCV Elimination: WHO Targets

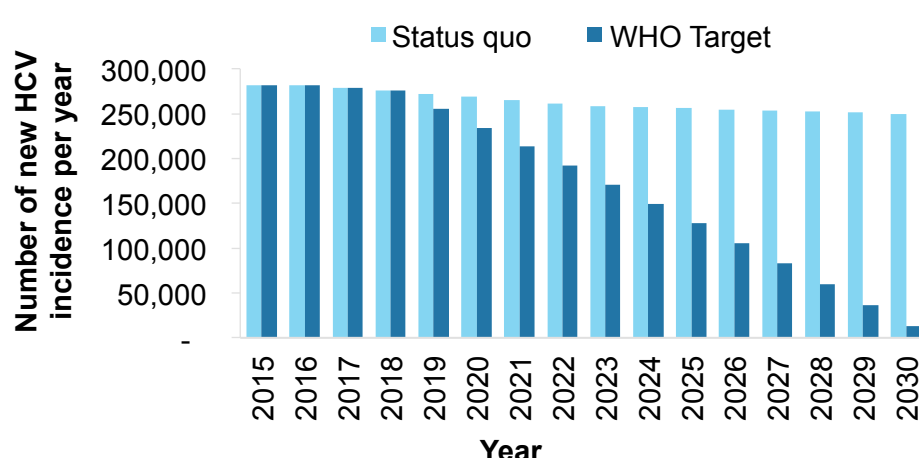
- To achieve HCV elimination targets by 2030, the **diagnosis rate for HCV needs to be 1 million/year** and **treatment rate needs to be 800,000/year** from 2018 onwards.



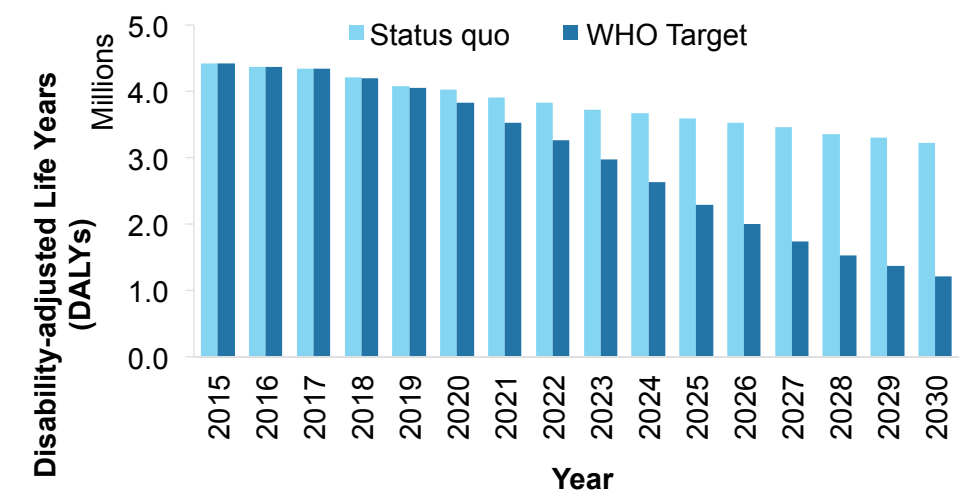
- HCV-related deaths** would reduce from 94,000 in 2015 to 32,400 in 2030 (65.5% reduction), and the number of **liver cancer** cases would reduce from 115,700 to 41,600 (64.0% reduction).



- Scaling-up screening and treatment would **substantially reduce HCV incidence from 280,000 to below 20,000 by 2030.**



- From 2015 to 2030, scaling-up screening and treatment would **avert 13.3 million disability-adjusted life years (DALYs)** in total.



## CONCLUSIONS

- Based on current HCV management practices, **HCV burden would continue to remain substantial in Pakistan.**
- The majority of HCV patients would die young.**
- In order to eliminate HCV by 2030, a national plan is needed to develop policies that could diagnose 1 million patients/year and treat 800,000/year.**

## CONFLICTS OF INTEREST

Dr. Chhatwal has received research grants from Merck and Gilead, and has served on the scientific advisory committees of Merck and Gilead.

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