

## “DIAGNOSTIC BURN-OUT” FOR HEPATITIS C: WHEN WILL COUNTRIES RUN OUT OF DIAGNOSED PEOPLE TO TREAT WITH DAAs?

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**Introduction:** Worldwide, only 20% of the 71 million infected with Hepatitis C (HCV) have been diagnosed. To achieve HCV elimination by 2030, at least 10% of all infected people need to be treated annually to overcome the effect of new infections. Unless HCV testing is intensified, countries with high uptake of Direct-Acting Antivirals will reach “diagnostic burn-out”, with no diagnosed patients left available to cure.

**Methods:** 2016 national-level epidemiological data from Polaris Observatory-database, was analysed, including HCV diagnosed individuals (percentage), new HCV diagnosis and infections, treatment rates and deaths. Percentage of HCV diagnosed individuals was evaluated by region and gross national income(GNI). Both set treatment targets, current rates of treatment and sustained virologic response were used to calculate which countries could eliminate HCV infection by 2030. For these countries, annual rates of HCV diagnosis were used to calculate the year of “diagnostic burn-out” -i.e. when all diagnosed patients would have been treated.

**Results:** Of 91 countries analysed, percentage of HCV infected patients currently diagnosed in 2016 ranged from 8% (Sub-Saharan African (SSA) Region) to 53.1% (North America). The percentage of patients infected with HCV diagnosed in 2016 highly correlated with GNI: 44% (High-Income Countries), 16.8% (Upper-Middle-Income Countries), and 9.5% (Low-Income Countries) ( $p < 0.0001$ ). Annual rates of new HCV diagnosis ranged from 0.22% (SSA Region) to 6.0% (North African-Middle East Region) ( $p < 0.0001$ ). Average year of diagnostic burn-out regionally varies from 2017-2025. Of 10 countries with a net-cure rate of 7%, theoretically large enough to achieve elimination by 2030; four countries – Japan, Netherlands, Spain and Germany - would be impeded by “diagnostic burn-out” between years 2022 and 2025.

**Conclusion:** High rates of diagnosis need to match treatment uptake to achieve HCV elimination by 2030. In most low and middle-income countries, rates of HCV diagnosis are too low to allow elimination by 2030.

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