

Hepatitis C treatment scale-up in Malaysia: Estimating the costs of drug acquisition and screening

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BACKGROUND

Currently, less than 600 patients are treated for hepatitis C annually in Malaysia and DAA access remains limited. With an estimated 450,000 infected patients and above 60% prevalence in intravenous drug users (IVDUs), there remains a significant burden to be addressed (1). WHO global targets call for diagnosing 30% of infected individuals by 2020 and treating 80% of eligible persons by 2030. In January 2017, draft national treatment targets were established that would allow a more financially and operationally feasible scale-up, to reach WHO 2020 regional targets for HCV by 2025. To support the Ministry of Health in planning and securing the needed resources to meet these goals, the future costs of drug acquisition and screening were estimated.

METHODS

Treatment scale-up costing was limited to drug acquisition and screening because it was predicted these would be the largest cost drivers for the overall program. Other costs of treatment scale-up are being considered in parallel studies (2).

Drug acquisition costing was conducted assuming that all annual treatment targets would be met and all non-decompensated patients would receive one line of Epclusa. For decompensated patients, it was assumed they would receive both Epclusa and ribavirin. Since pricing negotiations have not been completed, the drug cost of Epclusa was set using a benchmark of the existing per patient price of peg-interferon (RM 35,000).

Screening costs included enabling components of health promotion and provider training in addition to the costs of consumables, service provision, and the anti-HCV test. A step-wise approach was used in designing the screening program strategy (Figure 1). It was assumed that screening would be initiated in 2021 after warehoused patients have been treated. Under step-wise targeting of IVDU sub-populations, one group is saturated before screening programs for the next are launched. These sub-groups were ordered based on factors such as prevalence and accessibility in the following way: 1. Current MMT clients 2. Current/former NESP clients 3. Relapsed MMT clients 4. Other Active IVDUs 5. Ex- (or former) IVDUs. Each year, it was assumed that 10% of the screening yield would result from high risk groups in the general population who were opportunistically screened. After all IVDU sub-groups were saturated, screening would be ramped up among high-risk groups in the general population. Unique costs were used for different settings when data was available. Screening unit costs were estimated using data collected at Selayang Hospital and from Ministry of Health program data.

RESULTS

To meet the MoH treatment targets, 116,000 patients will need to be treated and 3.2 million persons screened by 2030 (Figure 2). Drug costs will total RM 4 billion and screening costs will total RM 1 billion.

Over the time period, drug acquisition costs will increase gradually as more patients are placed on treatment. In 2017, the first year of program scale-up, drug costs will be relatively affordable at RM 35 million. By 2030, annual drug costs will exceed RM 600 million (Figure 3).

Screening costs will be modest in the first five years (less than RM 20 million) and will remain less than 15% of annual drug costs until 2029. In 2029, general population screening of high-risk groups will need to be scaled up as IVDU sub-populations become saturated. By 2030, general population screening will be the only strategy to rely upon. As a result, in 2029 screening costs will increase more quickly to 22% of drug costs at RM 121 million, and eventually increase 5-fold in 2030 to RM 618 million, actually exceeding drug costs by RM 5 million. Overall, including 2030, screening costs are expected to represent 26% of drug acquisition costs from 2017-2030.

Figure 1. Step-wise approach to screening strategy

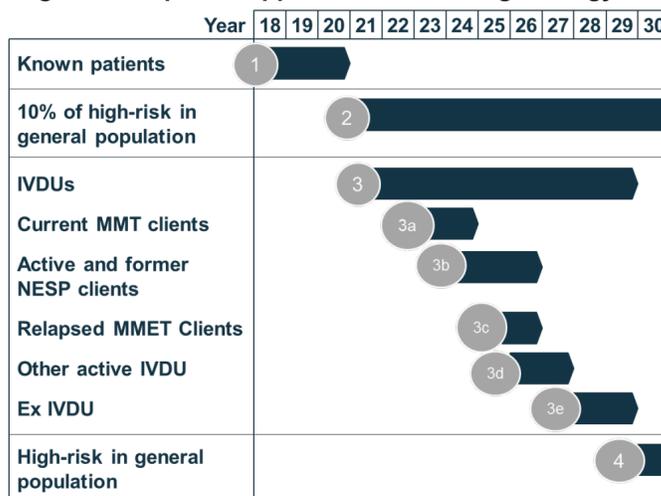
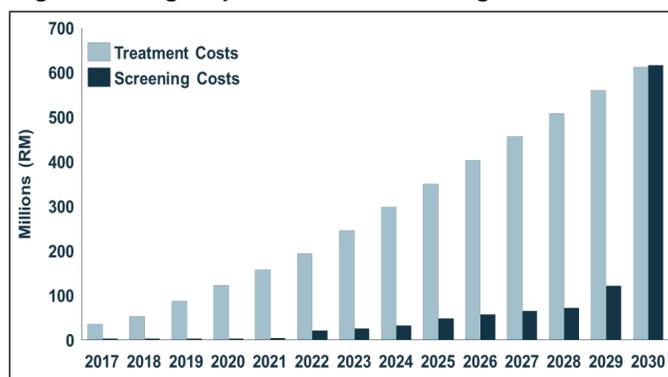


Figure 3. Drug acquisition and screening costs 2017-2030



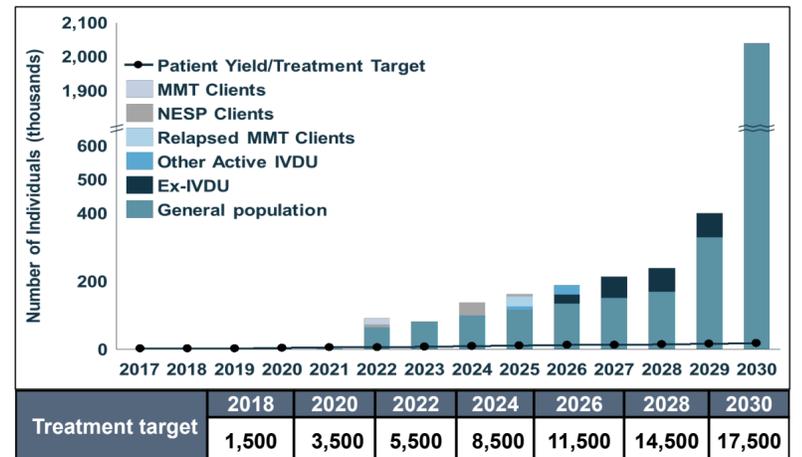
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CONFLICTS OF INTEREST

None of the authors had conflicts of interest that are relevant to the analysis and findings contained in the paper. The project was supported by a grant from Gilead Sciences, Foster City, CA, USA.

Figure 2. Number of patients to be treated and screened 2017-2030



CONCLUSIONS

These initial estimates provide guidance on the scale of the resources needed to launch a hepatitis C response in Malaysia. The additional budget for DAAs required in the early years will be modest since the Ministry of Health already spends about RM 2 billion annually on all medicines. However, by 2030, significant additional resources will be needed to support drug costs that would represent about a fourth of the current MoH medicines budget. Similarly, despite needing to screen over three million patients through 2030, a full screening program will not have to be launched until 2021 and two-thirds of the persons to be screened fall in 2030 alone, allowing time for the financial and human resources to be geared up gradually. Screening remains relatively affordable in the early years when targeted screening of IVDU populations is relied upon, but in 2029-2030 screening will have to shift towards high-risk populations in the general population, such as persons with piercings or tattoos, which will be much more costly due to the lower prevalence in these populations. Although drug acquisition and screening costs are hypothesized to be the main cost drivers of overall program scale-up, the other costs associated with hepatitis C treatment, such as demand generation, training, and laboratory strengthening, should be triangulated with these estimates to create a more complete picture of the resources needed to achieve scale-up.

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