Feasible HCV targets in Egypt

Authors’ reply

We agree with James Jansson and David Wilson that universal treatment for hepatitis C virus (HCV) infection in Egypt is an ambitious public health strategy. This fact has been part of the motivation for our work. In our study,1 we identified that most HCV transmission in Egypt is caused by a core group of individuals undergoing frequent medical injections. The existing national treatment strategy does not target these individuals, who are thus treated in the same proportions as the general population, leading to only a small reduction in the basic reproduction number (R0; from 3·54 to 3·03).1 However, individuals in this core group could be easily targeted with testing, prevention counselling, and treatment, as they identify themselves by accessing health care. Such targeted interventions could lead to a substantial reduction in R0 and, most importantly, HCV incidence.

The origins of the HCV epidemic in Egypt are attributed to mass campaigns of parenteral anti-schistosomal therapy between the 1960s and the 1980s.2,3 Once these mass campaigns stopped, HCV transmission variables (key variables included in our model were frequency of medical injections, probability of reuse of injecting material, and infection probability by injection) decreased substantially. It is reasonable to assume that, since R0 depends strongly on these variables, R0 decreased substantially as well. However, HCV continued to be transmitted, to a lesser extent, through everyday medical procedures.1

Hepatitis C has a very long chronic period, resulting in a very slowly evolving epidemic. A steady reduction in HCV prevalence in Egypt suggests that transmission in the era since mass parenteral anti-schistosomal therapy is insufficient to maintain the HCV prevalence reached in the late 1980s. However, a falling prevalence does not imply that HCV transmission variables and, implicitly, R0, saw further substantial decreases since the end of the mass campaigns. The only notable subsequent event, leading to further decrease in the R0 of the HCV epidemic in Egypt, might be the initiation of the present national strategy against the disease.

We did not identify age as a major factor shaping continuing HCV transmission and future seroprevalence. With every blood-borne disease, these epidemiological variables depend on how frequently individuals undergo medical procedures and the risk of acquiring HCV in each case. In our study,1 we used data to estimate the frequencies of undergoing medical procedures and assumed that these frequencies did not change substantially in the short term; we challenged this assumption in a field study of frequent injectors in a rural cohort. Advanced age was not a feature of frequent injectors; median age was 32 years (IQR 15–45) at baseline. A follow-up study showed that they maintained their injection practices for 8–10 years.1 Hence, evidence from field investigations supports our assumptions about frequent injectors. We did not validate our assumptions for the general population. Conceivably, individuals change their frequencies of undergoing medical procedures on the basis of age. However, these changes are not likely to substantially affect the frequency of HCV transmission, unless individuals are frequent injectors.

In conclusion, exclusion of age structure is not a major limitation of our modelling work. Interventions that target the top 2–5% of frequent injectors seems like a feasible approach, would be much more effective at reducing R0 than would untargeted interventions, and would not depend on substantial increases in logistical and financial resources beyond those already deployed for the existing national strategy.

We declare no competing interests.

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