Eliminating the Public Health Problem of Hepatitis B and C in the United States
The Burden of Hepatitis B and C

- Every year, viral hepatitis kills more people worldwide than road traffic injuries, diabetes, and HIV
- Hepatitis B and C account for the majority of these deaths, over 1 million a year, 20,000 in the US
- The two diseases together account for 78% the world’s liver cancer, 55% of cirrhosis
Emerging Momentum for Change

- Medicines approved in 2014 can cure chronic HCV infection in most patients, the HBV vaccine conveys 95% immunity.
- The UN Sustainable Development Goals mention viral hepatitis
- HHS has a viral hepatitis action plan
- Upcoming WHO resolution on eliminating viral hepatitis as a major public health problem
Elimination of a Public Health Problem

- For the committee’s purposes, a public health problem was defined as a disease that by virtue of transmission or morbidity or mortality commands attention as a major threat to the health of the community.

- After analyzing the problems of hepatitis B and C in the United States, the committee concluded that control is feasible in the relatively short term. Eliminating the public health problems of hepatitis B will take more time, and require considerable public will, resources, and attention to the barriers mentioned in Table S-1 and S-2.
The Transmission of HBV

- Mother-to-child transmission is rare in the US, but 800-1000 cases a year suggest problems with prenatal screening prophylaxis failure.
- Room for improvement in birth dosing with HBV vaccine and catch up vaccination in children.
- Support for birth dose coverage in HBV endemic countries of Asia and Africa could help reduce the future domestic burden of HBV as most chronic infections are imported.
- Universal immunization of infants and children would protect future generations from cirrhosis and liver cancer due to HBV.
- Adult immunization more complicated, but might done more efficiently at places already in contact with people at risk for HBV infection.
Complications among the Chronically Infected

• There is no curative treatment for hepatitis B. The goal of therapy is to suppress HBV DNA to undetectable levels. Cure, though not unheard of, is extremely rare.

• Many chronically infected HBV patients eventually require immunosuppressive drugs for cancer, autoimmune disease or organ transplantation. These drugs can reactivate suppressed HBV, a serious complication that can lead to liver failure.
Barriers to Hepatitis B Elimination

• HBV disease surveillance is inconsistent across jurisdictions and not well funded.
• HBV infection carries a social stigma that could undermine elimination efforts. Education and changes to social norms can alleviate stigma. Such change is possible, but takes time.
• Improved screening could help reduce complications and deaths from HBV, it could also help end transmission. Screening foreign born people would identify new infections, but restrictions on access to care could keep many of the newly identified cases from treatment.
• Screening should be accompanied by a method to enroll and retain patients in care.
• Research on reactivation, better vaccines, and a treatment to cure infection would facilitate HBV elimination.
The Transmission of HCV

• Harm reduction services could help reduce transmission of HCV, but the success of such programs depends on the number of injectors reached and the number of syringes exchanged relative to total injections made.

• Most harm reduction models come from cities, but injection drug use is becoming more common in rural areas and small towns. Adapting these programs to less densely populated areas will be challenging.

• Direct-acting antivirals can both prevent hepatitis C deaths and interrupt transmission, but these goals are meet with attention to widely different patient populations.

• It is possible to be reinfected after cure, but since the direct-acting antiviral treatments are new, research on reinfection is limited.
Eliminating Chronic Infection and Complications among the Chronically Infected

- The drugs that cure HCV infection are expensive so many insurers restrict their access, usually asking for evidence of advanced fibrosis or consultation with a specialist, some also require documentation of sobriety.
- State Medicaid programs have widely different restrictions on treatment.
- Curing hepatitis C in patients with decompensated cirrhosis can avoid the need for transplantation entirely or prolong graft survival after transplantation.
- Curing HCV before it progress to cirrhosis is the most efficient way to prevent fibrosis, hepatocellular carcinoma, and death from hepatitis C.
Barriers to Hepatitis C Elimination

• People who inject drugs drive most transmission in US, but are less likely to be tested or included in surveillance.

• Half of all chronically infected people are undiagnosed. The first step to preventing their disease from progressing is diagnosing them and bringing them to care.

• Some insurers and three-quarters of states’ Medicaid programs have responded to the cost of DAAs by restricting access. Only about one in ten people with chronic hepatitis C receives curative treatment.
Barriers to Hepatitis C Elimination

• The introduction of direct-acting antivirals for hepatitis C drove most of the acceleration in prescription drug spending between 2013 and 2014.

• Even at the current prices, these drugs are cost-effective. The benefits of treatment outweigh the costs.

• Eliminating Hepatitis C would require near universal access to treatment, something that appears unfeasible given the current pricing and policy environment.

• Though HCV is more than twice as common as HIV and causes more deaths, it is less of a public priority, far fewer resources are allocated to its prevention, testing, treatment, and research.

• Stigma can undermine any elimination effort.

• Almost a third of the United States’ chronic hepatitis C cases are found in prisons, but managing the infection is not usually within the capacity of a prison health system.
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