



Protesters outside a US Department of Health and Human Services building in Alameda County, California.

PERSPECTIVE

# Test and treat this silent killer

The scourge of hepatitis C virus in the United States is woefully underestimated. **Brian R. Edlin** reckons it's time the infection is given the priority it demands.

At least five million people in the United States have been infected with the hepatitis C virus (HCV)<sup>1</sup>. That's about five times as many people as are infected with HIV. A sound public-health response to the HCV epidemic requires urgent investment in prevention, testing, treatment and research — investments that were made for HIV — to avert greater financial costs and loss of life. Indeed, a January 2010 report by the Institute of Medicine (IOM), part of the US National Academy of Sciences, warned that viral hepatitis will remain out of control unless adequate resources are devoted to prevention, control and surveillance<sup>2</sup>.

This is not the response that we are witnessing. The US government has all but ignored the threat of HCV and is underfunding prevention, treatment and research into the disease (see 'US Response to the HIV and viral hepatitis epidemics'). The Action Plan to Prevent, Care and Treat Viral Hepatitis, which was released in May 2011 by the US Department of Health and Human

Services in response to the IOM report, does not include an intention to increase funding for viral hepatitis.

Control of any epidemic starts with an accurate understanding of the magnitude of the problem, but the scope of the HCV epidemic in the United States is poorly understood. For example, the Centers for Disease Control and Prevention (CDC) estimate of the prevalence of HCV infection in the United States is four million people<sup>3</sup>. But this relies on data from a national household survey that has long been known to suffer from non-response bias and to exclude high-risk populations such as homeless people and prisoners. This survey underestimated<sup>4</sup> the prevalence of HIV infection in the United States by a factor of 1.4 to 2.0. If the HCV estimate is similarly biased, then 6–8 million Americans are likely to have been infected with HCV.

Even less is known about the rate at which HCV is spreading. The CDC assumes that there are about 20 new infections for each case reported to its surveillance system and estimates that about 18,000 new infections

occur each year — about one every 30 minutes. The actual number could be much higher. Investigators in Seattle and Baltimore, and my research teams in San Francisco and New York, have found that injection drug users, in whom most new infections in the United States occur, rarely experience symptoms when they acquire HCV — and when they do, they rarely seek medical attention<sup>5</sup>. Probably fewer than 1 in 100 new infections in injection drug users, and possibly considerably fewer, are reported to health departments. Infections in this entire group of people are thus almost invisible. What's more, the recent explosion of opioid use among young adults has created a new silent HCV epidemic. In Massachusetts alone, more than 1,000 new HCV infections among 15–25 year olds annually since 2007 have been linked to this recent wave of drug use<sup>6</sup>.

The CDC's surveillance system covers people who are not homeless or institutionalized, have nothing to fear from the authorities, have access to health care, feel ill when they contract HCV infection and visit a doctor when they feel ill. But HCV disproportionately affects groups for whom those attributes often don't hold true (see 'Hepatitis C is a disease of the marginalized').

Even if the extent of the epidemic is unclear, basic prevention strategies could still be implemented. Prevention is the cornerstone of disease control, so the lack of funding in this area is especially troubling. Some have argued that HCV infection cannot be prevented. But there is strong evidence that the interventions that decreased HIV transmission among drug users — community-based outreach and education, testing and counselling, access to sterile syringes and substance-use treatment — also markedly reduced HCV transmission<sup>7</sup>. Once drug users learned about how HIV was spread, and barriers to obtaining sterile injection equipment were lowered, users eagerly

**Liver disease rates will continue to rise, and about 150,000 Americans will die from viral hepatitis in the next decade.**

adopted safer injection techniques, and both HIV and HCV incidence rates fell by as much as an order of magnitude from the late 1980s to the late 1990s.

HCV transmission rates were, however, far higher than those for HIV to begin with, and they remain unacceptably high. But HCV incidence rates in injection drug users fell from 15–20% per month in the 1980s to 10–25% per year after HIV prevention interventions were introduced. The median time between the first use of injection drugs and HCV infection rose from 3–4 months in the 1980s to 4–7 years in the

OASIS CLINIC

## PLAN OF ACTION

## Confronting the epidemic

**PREVENTION:** Provide needle-exchange facilities, syringe access, community-based outreach and education, community-based services, testing and counselling, links to care and substance-use treatment to all those in need.

**TESTING:** Provide hepatitis C testing to populations with an elevated prevalence wherever HIV testing is available.

**CARE:** Provide multidisciplinary services, comprehensive and continuing primary and specialty medical care, substance-abuse treatment, mental healthcare, case management, support services, and provider education and training nationally to all those in need.

**PRISONS:** Provide HCV prevention, testing and treatment services in correctional institutions.

**SURVEILLANCE:** Develop and implement surveillance systems for those currently overlooked by current systems.

**RESEARCH:** Prioritize the development of better interventions so that prevention, testing and care can be more effectively and efficiently provided to those who need it.

1990s, opening a window of opportunity in which to slow the spread of the virus. But effective preventive interventions are not available in many locations and are poorly funded where they do exist. And research on new interventions to reduce transmission further, which is urgently needed, is not a priority at the National Institutes of Health (NIH).

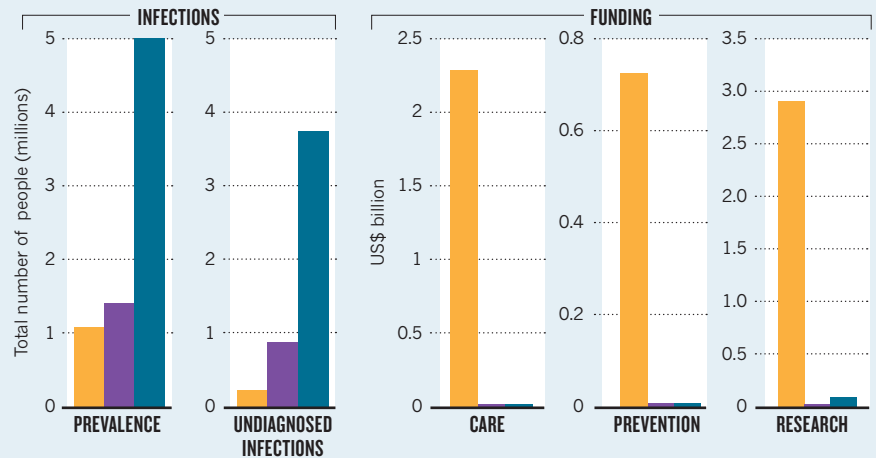
About half of all HCV infections can be cured with a single 6–12-month course of therapy, and new drug regimens will be more effective. But the resources to provide testing and deliver care are missing. US government policy recommends that all adults be screened for HIV, and there has been significant progress towards that goal: 83 million people have been tested, and CDC grants provide funding for another 1.4 million tests each year. But no such policy or funding supports HCV testing — even though more than ten times as

many Americans have undiagnosed HCV as have undiagnosed HIV infection, and half or more of them could be cured with

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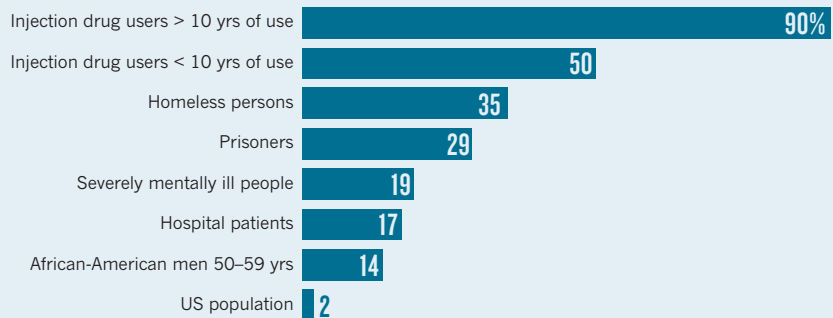
## US RESPONSE TO HIV AND VIRAL HEPATITIS EPIDEMICS

Hepatitis C infection is at least five times more prevalent as HIV infection in the United States, yet funding lags far behind.



## HEPATITIS C IS A DISEASE OF THE MARGINALIZED

Hepatitis C disproportionately affects groups who are under-represented in health surveillance systems and who are underserved by the healthcare system. Percentage of each group testing positive for HCV infection.



a single 6–12 month course of therapy. Moreover, public-health programmes stop at the doors of most correctional facilities, abandoning the infected and those at risk at the moment when providing prevention and treatment services would be most practical. In 2009, the IOM put the development of better treatment strategies for at-risk populations such as injection drug users on its list of the nation's top research priorities<sup>8</sup> — but the NIH has yet to respond to the call. As a result, liver disease rates will continue to rise, and about 150,000 Americans will die from viral hepatitis in the next decade<sup>2</sup>. Public and private healthcare expenditure on hepatitis C, which is estimated at US\$30 billion today, is expected to exceed US\$80 billion, with an increasing proportion of the cost falling to public sources<sup>9</sup>. If we fail to act now, these expenses will overwhelm our already overburdened public healthcare system.

The United States launched a vibrant response to the HIV/AIDS epidemic and made great advances in surveillance, prevention, care and treatment by investing in research and services in these areas. A timely, proportionate response to HCV will

require leadership and resources. Nothing less will mitigate the extraordinary toll that viral hepatitis could take on the public's health and on the healthcare system. ■

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