The end of HIV in the USA

The USA has pledged to eliminate its HIV epidemic through treatment-as-prevention and pre-exposure prophylaxis. But there are substantial structural challenges. Talha Burki reports.

In his State of the Union address on Feb 5, 2019, Donald Trump offered an ambitious promise. "Scientific breakthroughs have brought a once-distant dream within reach", he began. "My budget will ask Democrats and Republicans to make the needed commitment to eliminate the HIV epidemic in the United States." The plan was subsequently outlined by the Department of Health and Human Services (HHS). It envisages a reduction in new HIV infections by 75% within 5 years and 90% within 10 years. The USA saw 38 281 diagnoses of HIV in 2017.

The USA has more than 3000 counties. But over half the new cases of HIV in 2016 and 2017 occurred in 48 counties, including Washington DC and San Juan, Puerto Rico. In addition, seven southern states have notably high rural burdens of HIV. These counties, cities, and states will be the initial focus of the plan to end the epidemic. Funding will be assigned in the budget for the 2019–20 fiscal year, which begins in October. The scientific and clinical basis of the elimination effort will be treatment-as-prevention and pre-exposure prophylaxis (PrEP). The intention is to deploy these tools where they are likely to do the most good.

The plan rests on four pillars: diagnosis, treatment, protection, and response. 23% of HIV infections in the USA are transmitted by individuals who are unaware of their status, a demographic thought to account for 15% of 1·1 million or so Americans who carry the virus. Expanding access to testing and diagnosis will be the responsibility of the Centres for Disease Control and Prevention (CDC). The agency expects a substantial injection of funds in the forthcoming fiscal year.

The Ryan White HIV/AIDS Programme (RWHAP), which offers assistance to low-income Americans infected with HIV, has achieved viral suppression rates of 86%. The national average is 60%. More than two-thirds of Americans who contract HIV do so from individuals who have been diagnosed but are not in care. RWHAP has had marked success in improving outcomes for key populations, such as transgender individuals, youngsters (one-fifth of new infections in 2017 were among those aged 13–24 years), and people with unstable housing. HHS Secretary Alex Azar has pledged "to leverage the programme's comprehensive system of care and treatment to increase viral suppression around the country to 90%". The Health Resources and Services Administration, which runs the RWHAP, has been promised additional funding, both to accelerate provision of treatment through RWHAP and to distribute PrEP.

The CDC estimates that 1·1 million Americans are at substantial risk of contracting HIV and should be offered PrEP. The drug is currently reaching fewer than 10% of these people, but the elimination plan hopes to raise this proportion to at least 50%. It also intends to rapidly tackle burgeoning HIV outbreaks. The National Institutes of Health will oversee the implementation science, collating data and assessing the various approaches. It will not receive any additional money in the short-term, but there is the expectation that the next fiscal year will bring a substantial boost.

Gregorio Millett was senior adviser in the White House Office of National AIDS Policy in the Obama administration and co-wrote the 2010 National AIDS Strategy. "In many ways, I see the new plan as a natural progression", he said. "There is the focus on risk groups as well as scaling up interventions in areas where they can make the biggest impact; that really builds on what we put in place years ago." Support for harm-reduction programmes for injecting drug users has been increasing in light of the worsening opioid epidemic. However, reaching suburban and rural communities provides logistical challenges; harm-reduction services tend to be in the cities. Two-thirds of Americans live at least 10 miles from a needle and syringe exchange.

The effectiveness of targeted approaches in cutting new HIV infections has been borne out by the experiences of cities, such as San Francisco and New York. "We have empirical evidence that if you get out and provide treatment to those in need and get good uptake with PrEP for those at risk, you can achieve great things", explains Chris Beyrer (Johns Hopkins University, Baltimore, MD, USA). "So there is no doubt that we can get to elimination, but it is going to take an enormous change in the way the most affected places are addressing HIV."

There are substantial structural barriers. Around 70% of new HIV infections in the USA are among men who have sex with men. 44% of new infections occur in the African-American community, even though they only represent 13% of the population. Half of new infections occur in the southern states, yet few more than a third of Americans live in this region. The 2010 Affordable Care Act mandated an expansion of Medicaid, but several southern states have refused to participate. "One concern is that we may be returning to a vertical approach to address the HIV epidemic, when what we really need is a much more comprehensive approach to access to care, particularly among the working poor", adds Beyrer.

Carol M Highsmith Archive, Library of Congress/Science Photo Library

The AIDS Memorial Quilt on the National Mall in Washington DC, USA, Oct 11, 1987.

Stigma remains a huge issue. "It is very tough for a black man in Arkansas, Oklahoma, or Mississippi to walk into a public clinic and say that he is having sex with lots of men and he needs PrEP—that needs to be addressed", stresses Beyrer. In which case, community engagement is indispensable. "HIV control only works when the community is involved and has leadership roles", said Beyrer. Changing sexual dynamics make outreach trickier, now that young people tend to find partners online. "We are going to have to use innovative technology and virtual approaches to reach people", said Beyrer.

An estimated 14% of people living with HIV in the USA have some involvement with the criminal justice system every year. They typically face treatment interruptions after they are released from prison and can very quickly become viraemic. The disproportionate rates of incarceration for black men might help explain why African-American women, despite their low sexual risk profile, have high rates of HIV. "We need re-entry programmes to keep people stable on treatment as soon as they re-enter the community", said Millett. "The lack of scale-up of these programmes has been a persistent problem for some time".

Despite these challenges, Millett is cautiously optimistic about the prospects for eliminating the HIV epidemic in the USA. He points out that the plan does not have to show immediate success everywhere. "We just need proof-of-concept that this approach can work in one place; if that happens, then policy-makers and advocates are going to ask why it cannot be brought to other places, and when that happens, it will really open the floodgates."

Talha Burki

Infectious disease surveillance update

For more **on polio in Nigeria** see http://polioeradication.org/polio-today/polio-now/this-week/

For more on **Ebola in DR Congo** see https://www.promedmail.org/post/6360031

For more on **dengue in the Philippines** see http://outbreaknewstoday.com/dengue-cases-67-percent-philippines-57691/

For more on **cholera in Yemen** see http://www.emro.who.int/pandemic-epidemic-diseases/cholera/outbreak-update-cholera-in-yemen-7-march-2019.html

Polio in Nigeria

The first case of vaccine-derived poliovirus type 2 in 2019 has been reported in Nigeria, with an onset of paralysis date of Jan 22. The case was reported in Baruten, Kwara state. Currently, Nigeria has two vaccine-derived poliovirus outbreaks: one that began in the Jigiwa state and has since spread to other areas and to Niger; the second outbreak is in the Sokoto state. The last case of wild poliovirus type 1 in Nigeria was reported in the Borno state with an onset of paralysis on Aug 21, 2016.

Ebola in DR Congo update

As of March 9, 921 cases of Ebola virus disease have been reported in the Democratic Republic of the Congo in the current outbreak; 856 confirmed and 56 probable in the North Kivu and Ituri provinces since the outbreak began in August, 2018. 308 people have recovered and 582 deaths have been reported. A further 191 cases are still under investigation. More than 40% of new cases were in people who died outside an Ebola treatment centre, and most of those with Ebola had not been identified as a contact of other patients, suggesting that the virus is spreading outside the known chain of transmission. Community mistrust is common and treatment centres have been attacked. On Feb 24 and Feb 27, two Ebola treatment centres supported by Médecins Sans Frontières were attacked by unknown assailants, resulting in the suspension of medical activities in Katwa and Butembo, North Kivu. Activities in Butembo were resumed; however, the centre was attacked again on March 9.

Dengue in the Philippines

On March 9, the Department of Health in the Philippines reported 36 664 cases of dengue between Jan 1 and Feb 23, 2019. This is 67% higher than the cases reported for the same period in 2018. Dengue is now present in the Philippines all year round, affecting mainly infants and young children. The Department of Health has re-emphasised methods to reduce dengue transmission including searching for and destroying breeding sites, especially around the home, and implementing self-protective measures, such as wearing long trousers and long sleeved tops and daily use of mosquito repellent.

Cholera in Yemen

Between January, 2018, and February, 2019, 428 317 suspected cases of cholera have been reported in Yemen, including 560 deaths. 31% of the cases were in children younger than 5 years. 22 of 23 governorates in Yemen have been affected by the outbreak. During the period Jan 21–Feb 10, the highest number of cases were reported in Amanat Al Asimah, Al Hudaydah, Ibb, and Dhamar. Since January, 2018, 11 577 samples have been collected, of which 3683 have been confirmed as culture-positive for cholera in public health laboratories in Yemen.

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