The Economist

INTELLIGENCE UNIT

# BUILDING AND ENSURING AN INTEGRATED APPROACH TO INFECTIOUS DISEASES IN THE US



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## **Executive summary**

Throughout US history, policymakers and healthcare providers have been challenged to protect its population from infectious disease threats. Although the tools are at the country's disposal to eradicate most public health threats, the nation's fragmented political and healthcare systems make it difficult to track the issues, fund research and treatment programmes and to coordinate the delivery of the necessary care.

Together, more than 5% of all deaths in the US between 1980 and 2014 were caused by infectious diseases. These threats include influenza and pneumonia, which frequently sweep through the country in epidemics. HIV/AIDS and viral hepatitis are also diseases of great public health interest in need of greater oversight and action. Emerging diseases such as Ebola, West Nile Virus and Zika, as well as diffuse ones such as antibiotic resistance, are also taking their toll on population health. The opioid epidemic, although not an infectious disease in itself, is also integrally integrated with transmitting diseases and magnifying the public health burden.

A mix of politicians and public health stakeholders are working to reduce the spread and impact of infectious diseases. Many aim to meet national calls to action. Among them the National HIV/AIDS Strategy for 2020, the National Viral Hepatitis Action Plan for 2020 and the White House's National Strategy to Combat Antibiotic-Resistant Bacteria.

To achieve these goals, and to further the incredible gains the US has made so far in combating infectious diseases, stakeholders must understand why the current system of care is fragmented and why comprehensive and sustainable policy is essential to success. For new approaches to succeed, consistency is essential in three areas: funding, diagnosis and continuity of care, and stakeholder collaboration.

- National Strategy to Combat Antibiotic Resistance. Centers for Disease Control and Prevention. January 30th 2017. https://www.cdc.gov/drugresistance/federal-engagement-in-ar/national-strategy/index.html
- 2. New Hepatitis C Infections Nearly Tripled over Five Years. Centers for Disease Control and Prevention. May 11th 2017. https://www.cdc.gov/nchhstp/newsroom/2017/ Hepatitis-Surveillance-Press-Release.html

## **About this report**

Building and ensuring an integrated approach to infectious diseases in the US is a report written by The Economist Intelligence Unit and sponsored by Gilead, developed for distribution following the New Approaches to Infectious Disease Intervention panel event. It assesses the potential for developing more standardised policy for preventative care and treatment for infectious diseases.

This report is based on extensive desk research and in-depth interviews, conducted in January 2018 with five representatives of healthcare institutions, and academic and multilateral organisations. We would like to thank the following participants (listed alphabetically) for their time and insights:

- Paul Auwaerter, president, Infectious Diseases Society of America (IDSA)
- Michele Cecchini, head of the public health unit, OECD, Paris
- **Jeffrey Crowley**, programme director of infectious disease initiatives, O'Neill Institute for National and Global Health Law, Georgetown University in Washington, D.C.
- Karen DeSalvo, professor of medicine and population health, University of Texas Austin Dell Medical School
- **Dana Goldman**, director, Schaeffer Center for Health Policy and Economics at the University of Southern California

The Economist Intelligence Unit bears sole responsibility for the content of this report. The findings and views expressed do not necessarily reflect the views of the sponsor. Andrea Chipman was the author and Rebecca Lipman was the editor.

#### **CHAPTER 1:**

## Accountability in a complex healthcare system

In the US, the challenges to the prevention and treatment of infectious disease are largely institutional and cultural. The local, state and federal systems responsible for public health emergencies are frequently hampered by variable and, in some cases scarce, resources, competing priorities and a lack of clear accountability.

#### 1. Inconsistent oversight

Today, the US's federal health system and 50 disparate state health systems have drastically different budgets, coverage and organisational oversight for infectious diseases and public health campaigns.

"There is a lack of consistency from state to state over who has control for routine infection control and outbreaks," says Karen DeSalvo, a professor of medicine and population health at the University of Texas Austin Dell Medical School and a former acting assistant secretary for health in the Obama administration.

"There are not only different providers of care, but different pay sources," she says, adding that every stakeholder has a slightly different idea of how to prioritise infection control, even in inpatient settings.

The lack of uniformity is exacerbated by the fact that most health leaders at both the state and the federal level are political appointees, rather than civil servants, leading to "a constant uptake of new information and new policies," Dr DeSalvo says. Due to their short-lived positions, the learning and ultimate handover of institutional knowledge and best practices are weakened.

"Every stakeholder has a slightly different idea of how to prioritise infection control, even in inpatient settings."

#### 2. Conflicting policies and public health objectives

Co-ordinated responses at all levels of government may not be a given when state policies openly conflict with national guidance and public health objectives.

The Centers for Disease Control (CDC), the main public body responsible for setting policy and guidelines for infectious diseases, can set guidelines for public-health programmes, including those that make vaccinations available. However, each of the 50 states have their own public health department and insurance stakeholders that may not have the funds, incentives or capabilities to handle the CDC programmes.

In the case of Hepatitis C (HCV), some state restrictions go so far as to limit access to treatment to those who are in the most advanced stages of disease. In doing so, patients are still able to transmit the disease, to the detriment of public health goals. For example, 24 states had restrictive Medicaid treatment policies for those injecting drugs in 2016, stipulating a period of sobriety to receive HCV treatment through Medicaid.<sup>3</sup> In 2017 32 states required patients to demonstrate some level of liver damage (fibrosis) to be eligible for HCV treatment under Medicaid.<sup>4</sup> This was despite the CMS's 2015 guidance that such practices are not to be used to restrict access to treatment.<sup>5</sup>

- C Campbell, L Canary, et al., "State HCV Incidence and Policies Related to HCV Preventive and Treatment Services for Persons Who Inject Drugs
  – United States, 2015-2016," CDC Morbidity and Mortality Weekly Report, May 12th 2017. https:// www.ncbi.nlm.nih.gov/pmc/articles/PMC5657985/
- Hepatitis C: The State of Medicaid Access. 2017 National Summary Report. October 23rd 2017. National Viral Hepatitis Roundtable. https:// stateofhepc.org/wp-content/uploads/2017/10/State-of-HepC\_2017\_FINAL.pdf
- 5. CMS enters the Hepatitis C drug pricing debate. November 9th 2015. Medicaid & The Law. http://www.medicaidandthelaw.com/2015/11/09/cms-enters-the-hepatitis-c-drug-pricing-debate/

#### 3. Decentralised surveillance

Responsibility for the surveillance of public health conditions across the US is about as fragmented as the country's policies.

"When it comes to outbreaks, the key is to be able to identify as quickly as possible the cause and to start monitoring it so other parts of the system can put measures in place to limit and combat the event," says Michele Cecchini, head of the public health unit at the OECD in Paris.

Although surveillance is an issue for all infectious diseases, alarm bells have been ringing lately around the issue of anti-microbial resistance (AMR). In the US, the method for tracking AMR remains decentralised. By contrast, centralised health systems such as those in many European countries and Japan tend to be more nimble at surveillance monitoring and reaction, according to Dr Cecchini.

"In the US this is certainly an issue. They have several surveillance networks, which do not provide nationally representative data, so we have poor data of incidence and rate of AMR on a national level," he says.

"The UN has recognised AMR as a crisis and there is a need for global surveillance," Dr Auwaerter adds. "The CDC and states are working to help doctors to see resistance patterns and we are moving to help organise information and big data sets."

And not all surveillance systems are created equal. Massachusetts, for example, has successfully used electronic health records to survey for communicable diseases, says Dr DeSalvo. However, Indiana's public health system was slower to recognise an outbreak of HIV/AIDS and HCV among rural intravenous (IV) drug users, leading state health officials to implement a number of new measures, including expanded use of a CDC-developed HCV mapping tool (Global Hepatitis Outbreak and Surveillance Technology, or GHOST), to monitor drug use, and earlier treatment of those who are infected.<sup>6</sup>

The unevenness of public health surveillance from state to state is highlighted in the current opioid crisis, which has reached epidemic levels in the US. A less understood consequence of the drug epidemic is that increased injection use has contributed to the spread of infectious diseases including HIV/AIDS and HCV.<sup>7</sup> The CDC surveillance data suggest that new cases of HCV infections have tripled in five years (2012 through 2017), primarily driven by injection drug use associated with the opioid epidemic.<sup>8</sup>

By monitoring, analysing and interpreting health data the state institutions can better plan targeted interventions for the populations most in need. However, continued research is needed to identify innovative solutions to the opioid epidemic. Furthermore, barriers to sharing data and lessons learned between states should be reduced or eliminated, so that states can more fully co-operate in their shared mission to improve public health.

"A less understood consequence of the drug epidemic is that increased injection use has contributed to the spread of infectious diseases including HIV/AIDS and HCV."

- Strategies used during HIV, HCV outbreak in Indiana may prevent future epidemics. Healio. March 2nd 2016. https://www.healio.com/infectious-disease/ hiv-aido/news/online/%7B61a1f0c5-bc6e-46a3-8327-45be04944b24%7D/strategies-used-during-hiv-hcvoutbreak-in-indiana-may-prevent-future-epidemics
- 7. See http://tacklingopioids.eiu.com/
- New Hepatitis C Infections Nearly Tripled over Five Years. Centers for Disease Control and Prevention. May 11th 2017. https://www.cdc.gov/nchhstp/newsroom/2017/ Hepatitis-Surveillance-Press-Release.html

#### 4. Insurance incentives at odds

Insurers also add complication to the system. Most do not view public health as within their remit. They make decisions primarily based on the clinical benefit to the individual and cost offsets. As such, private insurance companies, many of which have a presence across the country, have their own rules on coverage that sometimes come into conflict with evolving national public health guidance.

In particular, patients from vulnerable and marginalised populations are most at risk of transmitting disease. They are also less likely to have comprehensive coverage to begin with, which is tantamount to a public health approach to disease management. This is currently being discussed in relation to the opioid epidemic, which is disproportionally impacting economically distressed and high-poverty communities with less access to specialised care and which tend to rely more heavily on Medicaid funds.<sup>9</sup>

"Public health has a different outlook from insurers," says Jeffrey Crowley, programme director of infectious disease initiatives at the O'Neill Institute for National and Global Health Law at Georgetown University in Washington, DC, and the former "AIDS Czar" in the Obama administration. Mr Crowley and others stress the importance of moving to an emphasis on "population health" rather than individual health of consumers. At the same time, he acknowledged, such a transition will be difficult at a time when power is increasingly shifting to insurers, following a spate of mergers and consolidations within the sector.<sup>10</sup>

#### 5. America's individualistic approach

Beyond structure issues and power struggles, the US has a unique strain of individualism that contributes to high rates of opposition to mandatory childhood immunisations. The national take-up rate of the measles, mumps and rubella vaccine in the US was lower than in many other OECD member countries in 2015, the most recent year for which data are available. Individual states such as Colorado, California, Kentucky and Arizona have rates of vaccination that fall below that needed for herd immunity.

"In the US, we have always prided ourselves as being an individualistic society, so a lot of that also translates into how our health system responds or reacts," says Dr Auwaerter. "Certainly, there is a higher tolerance for an anti-vaccine constituency and large expenditures on complementary medicine, which are not always evidence-based."

These structural and cultural issues, as well as funding issues explored further in the upcoming sections of the report, create daily headaches for stakeholders in the system. They are difficult issues to address in isolation, and perhaps futile if not addressed collectively.

Yet without action on each front, the US remains in a weakened position to respond to infectious disease threats, And, because infectious diseases are battles fought on a long timeline, a failure to co-ordinate consistent care means the US stands to lose the hard-earned gains already made in combating chronic public health problems such as influenza outbreaks and sexually transmitted diseases (STDs).

"In the US, we have always prided ourselves as being an individualistic society, so a lot of that also translates into how our health system responds or reacts,"

- Kneebone, E., Allard, S. A nation in overdose peril: Pinpointing the most impacted communitiesand the local gaps in care. September 25, 2017. Brookings. https://www.brookings.edu/research/pinpointingopioid-in-most-impacted-communities/
- Health Insurance Effects on Preventive Care and Health: A Methodologic Review. American Journal of Preventive Medicine Volume 50, Issue 5, Supplement 1, May 2016, pages S27-S3. https://doi.org/10.1016/j. amepre.2016.01.003
- Child Vaccination rates. Accessed January 2018.
   Organisation for Economic Co-operation and
   development. https://data.oecd.org/healthcare/child vaccination-rates.htm
- 12. Charles McCoy, "Why are Vaccination Rates Dropping in America?" The New Republic, July 24th 2015

#### **CHAPTER 2:**

## Fragmented funding and limited flexibility

Underscoring the aforementioned issues is the complexity and inconsistency of the US funding structures. In the US, funding is divided between national and state budgets and between public and private expenditure. And it is often further siloed by disease, such as HIV/AIDS and viral hepatitis.

Budgets are also regularly revisited and reallocated, and subject to political transitions. Changes currently under consideration in Washington, DC, such as block grants, caps and work requirements risk coverage disruptions. Thus the funding systems lack uniformity and stability, and many stakeholders bemoan that too much time is spent lobbying to renew and increase next year's budget.

The inconsistency jeopardises long-term approaches to public health. These include public health surveillance, medical innovations and consistent patient access to preventative care and treatment of infectious diseases.

#### 1. Private versus universal systems

Fundamentally, the public health funding system in the US is patchier than in countries with universal healthcare coverage, such as those in Europe and Canada, notes Dana Goldman, the director of the Schaeffer Center for Health Policy and Economics at the University of Southern California.

"The main virtue of universal health service is that they are lifetime national plans, which means that society has internalised all the costs," he says.

To be sure, universal health systems also make determinations based on budgetary impact. And like private insurance, these considerations can limit support for public health initiatives. Still, "in a private system relying on annual insurance contracts, it is hard to get the optimal investment in preventive services."

#### 2. Competing health priorities

Infectious disease is just one of many health interests competing for budget and attention within the US government systems.

In the fiscal year 2017 the CDC received a budget of US\$11.9bn, a fraction of the estimated US\$3.3trn spent overall on healthcare in the US that same year. <sup>13,14</sup> In late 2017 Congress (the legislature) also awarded US\$34.1bn to the National Institutes of Health (NIH) for the 2017 fiscal year, an amount that includes a US\$2bn boost in funding compared with the previous year. The NIH does not directly address public health but instead covers translational or "basic" health research.

This funding disparity prompted some of those interviewed to observe the contrast in priorities between health research and public health programmes.

"I laud basic science and translational research, but those sorts of developments get a lot of press, but non-sexy public health measures, such as valence tracking, don't get the same headlines and it's harder to convince the administration and Congress to increase funding," Dr Auwaerter said, adding that both categories of investment contribute returns. "In a private system relying on annual insurance contracts, it is hard to get the optimal investment in preventive services."

<sup>13.</sup> CDC Budget Overview. February 2015. https://www. hhs.gov/about/budget/budget-in-brief/cdc/index.html

<sup>14.</sup> NHE Fact Sheet. 2016. Centers for Medicare & Medicaid services. https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html

#### 3. Budget silos

In an effort to combat specific disease threats, the government and organisations like the CDC consider and prioritise the causes within its operations, then carve out pools of money for specific disease areas.

Funding is influenced by the seriousness of the disease and the means and ease of transmission. But the figures can appear unsystematic. For example, influenza and pneumonia caused the most infectious disease deaths from 1980 to 2014, but get comparatively less dedicated funding than HIV prevention programmes or non-infectious disease areas such as cancer and heart disease.<sup>15</sup>

Those interviewed say dedicated budgets can be both a blessing and a curse. "It's frustrating, because every group that got money wants to protect their interests," says Mr Crowley.

However, he acknowledges that any measures to integrate public health programmes across budget lines run the risk of losing some expertise attached to specific programmes.

In 2017 the CDC invested nearly US\$800m in preventing HIV/AIDS (separate from the Ryan White funding), US\$39m for viral hepatitis and US\$157m on STDs. <sup>16</sup> Each of these budgets, large as they are, are insufficient to tackle the problem from all angles. This includes screening and surveillance, linkage to care, education, treatments and research for new cures.

Even in the case of high-profile diseases such as HIV/AIDS and HCV, funding is frequently ring-fenced for education or treatment, where it needs to be more flexible to account for local needs within different parts of the country.

"HIV/AIDS is difficult because we don't have a cure," Dr Auwaerter says. Despite success in decreasing HIV/AIDS infections in the US overall, there is still work to be done in certain high-risk geographies, such as the South, and populations, such as black homosexual men, and surveillance data are not as strong in areas, such as the transgender population, as it could be. Strong, sustainable budgets are needed to keep the disease in check. "At the moment, it remains a life-long enterprise."

The budget of HCV is also strained, says Mr Crowley. "We simply do not spend enough, as a nation, to prevent and treat HCV. Even with the opportunity to cure HCV, there is still a need to convince the public that this is worth the continued investment."

Some officials, including Dr Auwaerter say they favour budgeting for approaches to HCV that improve surveillance, detection and treatment that could lead to a substantial long-term decrease in the diseases.

Some dedicated funding programmes have been highly productive, serving as a model of care for other infectious disease programmes. The Ryan White Care Act, which targets people living with HIV/AIDS, is particularly well regarded. The programme helps local communities develop systems of care most appropriate for their local patient population.<sup>17</sup> In 2016 it operated on a budget from Congress of US\$2.32bn (independent of the CDC's budget), making it the US's largest federally funded programme for the disease.

What makes the Ryan White Care Act's approach so successful is the reach of its services to those most in need, as well as its continuous development of best practices for managing the disease.

"Measures to integrate public health programmes across budget lines run the risk of losing some expertise attached to specific programmes."

- "Infectious Disease Mortality Trends in the United States, 1980-2014," Research Letter, Journal of the American Medical Association, November 22nd-29th 2016. Also, see https://report.nih.gov/categorical\_ spending.aspx.
- 16. CDC's HIV Budget. Centers for Disease Control and Prevention. March 2017. https://www.cdc.gov/hiv/funding/budgets.html
- 17. Gallant, J., Adimora, A. et al., "Essential Components of Effective HIV Care: A Policy Paper of the HIV Medicine Association of the Infectious Diseases Society of America and the Ryan White Medical Providers Coalition." Clinical Infectious Diseases, Volume 53, Issue 11, December 1st 2011, pages 1043-1050, https://doi.org/10.1093/cid/cir689.

The programme now provides outpatient care and support services to affected individuals and families, and functions as the "payer of last resort" by filling the gaps for those who have no other source of coverage or face coverage limits. The programme also provides grant funding for medical and support services to the local community-based organisations that are most severely affected by HIV/AIDS, as well as grants to all 50 states and US territories to improve the "quality, availability and organisation of HIV healthcare and support services."

#### 4. Emergency resources

It is very difficult to appropriate money from Congress or any administration for something that has not yet happened, thus a significant emergency fund for infectious diseases is not currently available.

Although we cannot predict where, when or how an outbreak will happen, we can be certain that there will be another one. Unfortunately, there is little built-in financing capacity to detect early threats and address them. This is a significant concern because infectious diseases become greater problems when they are not addressed on the front end. The consequences have been seen with emerging diseases such as Ebola, West Nile Virus and Zika, as well as diffuse ones, such as antibiotic resistance, which receive low levels of discretionary funding.

"With Ebola and Zika, we didn't have the ability to respond as much as we might have due to budget restraints. And with pandemic influenza, no one is getting salaried support to deal with that," Dr Auwaerter says. Indeed, although there was a massive mobilisation in the US to respond to Ebola, it was a cost largely born by hospitals and not sustainable. And a post on PLOS blogs, a medicine and science website, in late 2016 expressed concerns that "multiple" Zika outbreaks in 2016 might have been missed due to a scarcity of federal funds and a lack of active surveillance across the US Gulf Coast.

To their credit, many states have created a rainy day fund for public health crises, such as pandemics and new viruses. However, Dr Auwaerter says they are unlikely to have the structure beneath it to respond flexibly and nimbly to emerging threats. "Many of the public health-oriented drives are done on a shoestring."

#### 5. Low incentive to specialise

Basic staffing issues further weaken the national response to infectious disease because consultants and public officials in this field are paid at the lower end of the pay structure. This makes it more difficult to attract debt-laden medical students and other healthcare professionals into the infectious disease specialty. Furthermore, there becomes a lack of medically trained leadership to champion the needs of the infectious diseases in political situations.

This workplace shortfall leads to trouble filling infectious disease health fellowships, Dr Auwaerter noted, to say nothing of public health positions. The result is a shortage in the number of trainees in areas such as HIV, tuberculosis and emerging diseases.

The shortages of dedicated workforces for these diseases also exacerbate conflicts over what insurance plans will pay for. "They [insurers] started saying that only certain infectious disease specialists can prescribe these [HCV specific] drugs," says Mr Crowley. Consequentially, "the federal government issued guidelines saying this was discriminatory."

"To their credit, many states have created a rainy day fund for public health crises, such as pandemics and new viruses. However, Dr Auwaerter says they are unlikely to have the structure beneath it to respond flexibly and nimbly to emerging threats."

- Kaiser Family Foundation. The Ryan White HIV/AIDS Program: The Basics. February 1st 2017. https://www. kff.org/hivaids/fact-sheet/the-ryan-white-hivaidsprogram-the-basics/
- About the Ryan White HIV/AIDS Program. HRSA. https://hab.hrsa.gov/about-ryan-white hivaidsprogram/about-ryan-white-hivaids-program
- 20.Smit, M., Rasinski, K. et al., "Ebola Preparedness Resources for Acute-Care Hospitals in the United States: A Cross-Sectional Study of Costs, Benefits and Challenges," *Infection Control & Hospital Epidemiology*, Volume 38 Issue 4, April 2017. Pages
- 21. Hotez, P., "2017 Global Infectious Diseases Threats to the United States," PLOS Blogs, December 22nd 2016

#### **CHAPTER 3:**

## **Continuity of care challenges**

Healthcare officials, bound by their long-standing funding and structural problems, have long struggled to address a fundamental issue: infectious diseases have disproportionately affected populations without sufficient access to healthcare.<sup>22</sup>

Unfortunately, consistency to infectious disease programmes remains limited across the 50 states and the continuity of care is still undermined by uneven levels of funding, surveillance and influence by stakeholders—both political and institutional.

#### 1. Budget uncertainties

It was the introduction of the Affordable Care Act (ACA), that began to address national access to quality healthcare, reliable funding and consistent guidelines. The underlying potential for infectious disease care was monumental. This was especially true for patients benefiting from the ACA's expansion of Medicaid, who were more likely to seek out medical care earlier for conditions such as HIV/AIDS and HCV.<sup>23</sup>

Those interviewed say the ACA is also one of the major factors that improved healthcare co-ordination. "Of course, it was about extending access, but it was also about making health services work better and about bending the cost curve," says Mr Crowley.

The ASTHO states in a framework report that when various components of the health system are adjusting to policy alterations, the key "is ensuring that services for infectious disease do not fall through the cracks and that the unique public health expertise and 'wrap-around' services are still available to all who need them."<sup>24</sup>

Despite these warnings, the political climate poses uncertainties to the availability of care. Block grants and budget caps are continuously raised as potential financing reforms for Medicaid. These are programmes through which the federal government gives state governments fixed amounts to provide services suitable for their population. These grants give control of the spending to the states, and give Congress the power to set the maximum amount of the block grants.

Because they allow a state flexibility on how that money is best spent on their populations, block grants have their appeal. However, the details present significant challenges to the continuity of care. The formula used to set a block grant or per capita cap are inflexible. If a state is allocated a certain amount to spend per patient per year for infectious diseases, that number does not grow if there is a sudden outbreak, such as HIV or Ebola. The state must siphon more funds to treat an outbreak while maintaining other services. The cost ceilings are therefore likely to limit resources for outbreaks and public health crises, ultimately creating disruptions to the established continuity of care.

Furthermore, states are skeptical of the long-term stability of block grants and budget caps. Historically, state programmes with low-budgets have by necessity become more flexible and collaborative. While this is a positive outcome in the short-term, success in this measure has been used as evidence by federal agencies to support additional budget cuts or even elimination of the grant. As budgets become smaller, programmes find it challenging to impossible to successfully operate.

"If a state is allocated a certain amount to spend per patient per year for infectious diseases, that number does not grow if there is a sudden outbreak, such as HIV or Ebola."

- 22. "State Health Department Framework: Preventing Infectious Diseases Through Healthcare," ASTHO, http://www.astho.org/Programs/Infectious-Disease/Integration/Preventing-Infectious-Diseases-through-Healthcare/
- 23. D Blumenthal, M Abrams, et al., "The Affordable Care Act at 5 Years," *The New England Journal of Medicine*, June 18th 2015 and https://www.kff.org/ hivaids/issue-brief/what-is-at-stake-in-aca-repealand-replace-for-people-with-hiv/
- 24. "State Health Department Framework: Preventing Infectious Diseases Through Healthcare," ASTHO, http://www.astho.org/Programs/Infectious-Disease/ Integration/Preventing-Infectious-Diseases-through-Healthcare/

#### 2. Decreasing support when incidents decrease

When it comes to combating diseases, success is a double-edged sword. When incidence of infections starts to decrease, this is often a time when already-tight resources begin to be reallocated or removed completely. However, gains in eradicating the diseases can be easily lost if access to screening, prevention and care measures are defunded or removed. In fact, when the incidence of infection declines it is a crucial time for public health programmes to mobilise to meet the specific needs of the remaining infected populations and those most susceptible to a resurgence.

This is currently being discussed around the diagnosis of HIV/AIDS in the US, which is decreasing overall but rising in specific populations, including black and latino gay and bisexual males.<sup>25</sup> Resources thus need to be reallocated and made flexible enough to target and provide care for these groups.

Success is also hard to define in the longer term. In public health, the interruption or eradication of the disease is often envisaged as the goal, but infectious diseases are resilient, and often re-emerge even years later as public health problems.

According to a World Health Organisation bulletin, "surveillance and continuation of control interventions are necessary to maintain achievements in infectious disease control unless transmission has been interrupted and the microbe destroyed worldwide. Our job as public health professionals is to ensure that the message is clear, that commitment and political will continue, and that financial resources remain available."<sup>26</sup>

3. Private insurance incentives

Within the world of America's private insurance providers, fundamental conflicts of interests are at play between cost and long-term benefits. These stymie the willingness to take a comprehensive approach to public health and preventative care.

Dr Auwaerter and others explain that the short tenure of most insurance contracts, which are renewed from year to year, provide little incentive to provide costly long-term treatment, preventative services or any service or treatment where the long-term impact on patient health is unlikely to accrue to the payer. In the case of HCV, for instance, this short-term approach has led some insurers to deny drug access to HCV patients until they show signs of liver damage or have proven that they aren't using IV drugs. From a public health perspective, this increases the overall risk pool of a population, and heightens potential for future disease transmission.

"When it comes to infectious disease, insurers don't fully internalise what economists would call the externalities of infection," says Mr Goldman. "If I treat IV drug users with HCV, they won't infect others, so that treatment is more valuable to other insurers. We need to start moving toward a population health approach." This includes treating populations at greater risk, such as those in correctional institutions before they are released back into the public.

"In public health, the interruption or eradication of the disease is often envisaged as the goal, but infectious diseases are resilient, and often re-emerge even years later as public health problems."

<sup>25.</sup> HIV in the United States: At A Glance. Centers for Disease Control and Prevention. November 29, 2017. https://www.cdc.gov/hiv/statistics/overview/ataglance.html

D Heymann. Control, elimination, eradication and re-emergence of infectious diseases: getting the message right. Volume 84, Number 2, February 2006, pages 81-160. World Health Organisation.

#### **CHAPTER 4:**

# Joining forces: factors for better stakeholder collaboration

The ACA established the Prevention and Public Health Fund (PPHF), the first national mandatory funding stream for improving public health. It is dedicated to expanding national investment in preventative and public health, as well as restraining the growth in costs.<sup>27</sup> In 2016 states received over US\$625m from the PPHF, which supported a number of initiatives, including vaccination programmes that predate the ACA.

As with other dedicated public health funds, the fate of these funds is uncertain. Government agencies are reviewing proposed budget cuts, block grants, and changes to Medicaid and public health funding. In response, states are rapidly reviewing their choices and examining new approaches to spending reduced funds.

#### 1. Streamlined budgets and public-private collaboration

This funding shake-up, although worrisome, does spur some needed streamlining of budgets and collaboration across programmes. The ASTHO framework, *Preventing Infectious Diseases Through Healthcare*, agree that even given ACA's uncertain future under the new administration, stakeholders need to more effectively use limited financial and workforce resources.

The ASTHO framework for public health also assumes a more significant role for private-sector provision of preventive services (if the right incentives are provided), collaboration with community health centres and more investment in health information.<sup>28</sup> It further recommends the identification of a "federal champion" to provide leadership, identify the right partners and support both the CDC and state health departments.

At the heart of public-private collaborative efforts is the relationship that local, state and national health offices have with insurers needs. Before any national infectious disease policy can be standardised, this relationship has to be revisited, and incentives altered.

It is unlikely that the private insurance-based structure of the US health system will be altered in the near future. However, Mr Goldman notes that the obstacles it poses to more comprehensive policy are "not insurmountable".

"If we were more creative about policy, there are ways you can be clever about how insurers reimburse each other." In this way, "you could approximate a national insurance plan."

Future agreements could stipulate, for example, that an insurer that passes on a patient diagnosed with HCV, but who has not been treated, might have to bear some financial responsibility. "We worry about consolidation in the insurance market, but it does make it easier to solve some of these problems," he adds. "Fewer companies means they could bypass the political system."

"If we were more creative about policy, there are ways you can be clever about how insurers reimburse each other."

Prevention and Public Health Fund. Centers for Disease Control and Prevention. https://www.cdc. gov/funding/pphf/index.html

<sup>28.</sup> State Health Department Framework: Preventing Infectious Diseases Through Healthcare," ASTHO, page 3. http://www.astho.org/Programs/Infectious-Disease/Integration/Preventing-Infectious-Diseases-through-Healthcare/

Another incentivising solution would be extending insurance contracts beyond the current one-year standard term. Kaiser Permanente, an American integrated care consortium with an emphasis on preventative care, often keeps beneficiaries for ten years or more and, consequently, invests more in preventative care, Mr Goldman notes.

There is also an important role that the private sector, in the US and internationally, can play, by collaborating with public institutions to combat infectious diseases. Both already contribute to the development of diagnostics for early detection and co-ordinated delivery of care, and their joint involvement is also important in the research and development of vaccines for emerging and re-emerging diseases. For example, as of March 2017 38 private companies are working on the development of a Zika vaccine.<sup>29</sup> And in the light of the opioid epidemic, where the scope of the disaster is vast, there are many local instances where the private sector has stepped in to support treatment centres in their states and communities, lend their skills and experience to those in the local medical community, invest in medications and technologies for treatment and care, as well as policy development.<sup>30,31</sup>

#### 2. Education and guidelines for preventative care

Preventative care is not achieved easily; each disease and population requires a unique mix of awareness, surveillance, access to care and early treatments. However, many states and localities have tested simple and cost-effective measures, and should be more encouraged to share their findings with others.

For example, partnerships between public and private organisations within the US have been effective in public health messaging, says Dr DeSalvo. California has been effective at public service influenza campaigns that advise against bringing children to visit relatives in hospital and recommend washing hands when visiting nursing homes, while Seattle has addressed anti-immunisation movements by targeting messaging to schools where there is an especially low take up of vaccines. "We don't need to broadcast the same message to the whole country; we can tailor the message," she says.

Within the US, a combination of funding, education, national guidelines and policies have been effective in reducing new HIV/AIDS infections by nearly 20% between 2008 and 2014.<sup>32</sup> The national guidelines embrace early treatment, and policies were enacted that make it difficult for insurance companies to ignore infected patients. Expanded access to healthcare helped to strengthen the message. The reduction has been impressive, but there is more to do. Gaps remain for the most marginalised populations.

Lessons can also be learned abroad. For example, in the Netherlands and Scandinavian countries, education and guidelines have helped to drastically lower rates of prescribed antibiotics—an issue with which the US can sympathise. This is because a number of European countries have used "stewardship programmes" to monitor prescriptions on a hospital level, where it is believed up to 70% of antibiotics aren't prescribed correctly.<sup>33</sup> As part of the programmes, multidisciplinary teams—including microbiologists and pharmacists—carry out education programmes for hospital staff and review all antibiotic prescriptions for patients. The programmes have led to a 40% reduction in inappropriate use of the medicines.

"Many states and localities have tested simple and cost-effective measures, and should be more encouraged to share their findings with others."

- 29. Vaccines: Shaping global health. Vaccine. Volume 35, Issue 12, March 14th 2017, pages 1579-1585. https://doi.org/10.1016/j.vaccine.2017.02.017
- The Opioid Epidemic and the Private Sector: Challenges and Solutions. FTI Journal. October 2017. http://www. ftijournal.com/article/the-opioid-epidemic-and-theprivate-sector-challenges-and-solutions
- 31. Intersector briefing: cross-sector approaches to solving the opioid crisis. Intersector. September 21st 2017. http://intersector.com/intersector-briefing-cross-sector-approaches-to-solving-the-opioid-crisis/
- HIV and AIDS timeline. Centers for Disease Control and Prevention. https://npin.cdc.gov/pages/hiv-andaids-timeline
- 33. See Cecchini, M. and Lee, S., *Tackling Wasteful Spending on Health*, Chapter 3, OECD 2017.

#### 3. Promotion of data and health technology

New technologies and big data analytics are an increasingly valuable tool for detecting potential disease threats quickly and developing treatments. Yet realising the benefits of these advancements at a national level is easier said than done.

Mr Crowley notes that there are "exciting examples in different states" from active public health surveillance and data collection to improve clinical outcomes. "But we need to find ways to standardise across the country. There is stuff that is possible thanks to big data that wasn't possible before."

"We're not going to have a surveillance system for HCV that mirrors what we have for HIV, but I don't think that means we can't do anything," Dr Auwaerter says. "We could think about budgeting more money to do more with clinical surveillance."

Data and health technology is also being used for the development of much needed treatments, such as new drugs for microbial-resistant infections. But success in these initiatives will require "both push and pull incentives, some of them regulatory and some budgetary," Dr Auwaerter notes.

#### 4. Cultural shifts

In the US, changing the cultural expectations of healthcare remains both an underlying challenge and a necessity as health systems adapt to demographic changes. Therefore, greater personal responsibility for one's health must be an intrinsic part of the evolving approach to infectious diseases, Dr DeSalvo says.

Indeed, with greater demands on healthcare systems and stretched finances, there are increasing arguments for patients to take more responsibility for their health across a range of disease areas.

Stigmas must also be addressed to break down barriers between users and the agencies offering aid and early treatment. For example, public health measures often focus on pragmatic measures such as needle exchanges and early treatment of active users living with HCV and HIV/AIDS. The CDC has also backed comprehensive syringe service programmes (SSPs) as "one of many tools that communities can use to prevent hepatitis and other injection-related infectious diseases." However a CDC study finds that "only three states have laws that support full access to both comprehensive SSPs and hepatitis C-related treatment and preventive services for people who inject drugs." 34,35

Proponents have framed SSPs as ways of averting transmission of disease, while opponents have stressed the importance of personal responsibility. It has also been stressed that by choosing to participate in these needle exchange programmes people begin to exercise the agency they have over their own healthcare.

"Americans seem to feel that whatever healthcare they want, they can get it, and pay very little for it," Mr Goldman says. "We look at healthcare policy through the lens of the patient, but the right perspective also asks, what is society's risk?"

"We look at healthcare policy through the lens of the patient, but the right perspective also asks, what is society's risk?"

- 34. New Hepatitis C Infections Nearly Tripled over Five Years. Centers for Disease Control and Prevention. May 11th 2017. https://www.cdc.gov/nchhstp/newsroom/2017/Hepatitis-Surveillance-Press-Release.html
- 35. State HCV Incidence and Policies Related to HCV Preventive and Treatment Services for Persons Who Inject Drugs United States, 2015–2016. Centers for Disease Control and Prevention. May 12th 2017. https://www.cdc.gov/mmwr/volumes/66/wr/mm6618a2.htm?s\_cid=mm6618a2\_w

## **Conclusion**

Improving public health and treatment of infectious diseases in the US remains an uphill challenge. Unique cultural assumptions about individual choice and the fragmented structure of healthcare provision and funding are only the start of the issues at play. The polarised atmosphere with regard to healthcare only further complicates the job of policymakers.

Yet infectious disease experts and health economists agree that finding creative ways of working around the current structural obstacles is a realistic prospect and a necessary one. Tackling any one issue could have significant or widespread impacts on the whole nation.

Some challenges, such as the continuing consolidation in the insurance sector will evolve into new challenges and opportunities, including the possibility of encouraging longer-term investment in public health and in commitments to patients themselves.

Greater use of partnerships, public and private, between federal and state authorities, and between public health experts and community organisations, could lead to quicker responses to emerging threats and better surveillance of infection patterns.

Finally, more will be expected of patients themselves, by taking greater responsibility for their own health and by accepting a degree of compromise over choices in the interest of a healthier population.

Better co-operation between all stakeholders in fighting infectious disease threats will be essential to improving outcomes.

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