### Table 2.6.1: Epidemiology of HIV and viral hepatitis, and harm reduction responses in North America

<table>
<thead>
<tr>
<th>Country/territory with reported injecting drug use</th>
<th>People who inject drugs</th>
<th>HIV prevalence among people who inject drugs (%)</th>
<th>Hepatitis C (anti-HCV) prevalence among people who inject drugs (%)</th>
<th>Hepatitis B (anti-HBsAg) prevalence among people who inject drugs (%)</th>
<th>Harm reduction responsei</th>
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<td>People who inject drugs</td>
<td>HIV prevalence among people who inject drugs (%)</td>
<td>Hepatitis C (anti-HCV) prevalence among people who inject drugs (%)</td>
<td>Hepatitis B (anti-HBsAg) prevalence among people who inject drugs (%)</td>
<td>Harm reduction responsei</td>
</tr>
<tr>
<td>Canada</td>
<td>90,000 (72,000-108,000)</td>
<td>11%[2]</td>
<td>68%[3]</td>
<td>nk</td>
<td>✓[4,18]</td>
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<td>✓[15]</td>
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<td>x</td>
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</tbody>
</table>

nk – not known

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**a** There are no identified reports of injecting drug use in Greenland.

**b** The number in brackets represents the number of operational NSP sites, including fixed sites, vending machines and mobile NSPs operating from a vehicle or through outreach workers.

**c** The number in brackets represents the number of operational OST sites, including publicly and privately funded clinics, and pharmacy dispensing programmes. (M) = methadone, (B) = buprenorphine, (BN) = buprenorphine-naloxone combination, (O) = any other form (including morphine and codeine).

**d** DCR = drug consumption room, also referred to as a safer injecting facility (SIF), a safe injecting site (SIS) or an overdose prevention site (OPS).

**e** These services operate in 44 of the 50 states, as well as in Puerto Rico. However, the number in Table 2.6.1 does not include Puerto Rico and civil society state that the actual figure in the table is higher as it does not include NSPs which operate clandestinely.
Map 2.6.1: Availability of harm reduction services

- Both NSP and OST available
- OST only
- NSP only
- Neither available
- Not Known
- DCR available
- Peer-distribution of naloxone
Harm reduction in North America

Overview

North America is estimated to have 17% of the total number of people who inject drugs in the world, and the highest prevalence of past-year opioid use.[7] During 2015, an estimated 47.7 million people in the United States (US) used illicit drugs or used prescription drugs for non-medical purposes, 2% of which were stimulants, the second most commonly used drugs after cannabis in the region.[7] In Canada, 13% of people had used at least one illicit drug in the past year, an increase of 2% since 2013.[9]

The prevalence of opioid use is particularly high in North America, and the region continues to experience the world’s highest drug-related mortality per capita.[27] The US now has the fastest annual percentage rise of drug-related fatal overdose ever recorded, with an increase of 21.4% between 2015-2016 alone.[27] In Canada, opioid-related deaths have also dramatically increased: 72% of deaths involved fentanyl or fentanyl analogues in 2016, and 81% of overdose deaths in Canada were linked to fentanyl.[7,10] Fentanyl and its analogues are synthetic opioids which can be 50 times more potent than heroin and 100 times more potent than morphine. Canada reports 92% of its opioid-related deaths as accidental/unintentional.[10] The worrying increase in opioid-related overdose deaths has been met with a public health response which broadly encompasses the principles of harm reduction, but to differing extents in the US and Canada.

Needle and syringe programmes (NSPs) have been scaled up in the US and Canada overall. In Canada, provinces and territories are responsible for providing public health harm reduction services such as NSPs, and therefore information is not tracked at the national level.[11] However, it is estimated that 94.5% of people who inject drugs used sterile injecting equipment at last injection. In the US, 335 NSPs operate across the country,[18] an increase of 91 in total and a 37.3% rise in programmes since the Global State of Harm Reduction last reported.[12] OST provision is less well established in the US and was only available in 8.5% of all facilities, both public and private, which can provide the medication.[9,13] In Canada OST is available in all ten provinces (but there is no national-level figure for the total number of sites across the country).

Scaled up naloxone provision and the establishment of drug consumption rooms (DCRs) or safer injecting facilities (SIFs) have been critical to the overdose response in this region. In 2016, the Canadian Ministry of Health replaced the National Anti-Drug Strategy with the Canadian Drugs and Substances Strategy, which includes harm reduction as one of its four core pillars.[24] This ushered in a number of developments in harm reduction, including a regulatory amendment making naloxone available without prescription (enabling pharmacies and others to proactively distribute the medicine to those who might experience or witness an opioid overdose) and new front-line harm reduction interventions.[14] At the time of publication there were 26 supervised consumption sites granted licenses in Canada, a scale up of 24 since the Global State of Harm Reduction last reported.[4]

In the US, community-based naloxone programmes are in operation, but the greatest barrier to distribution is its status as a prescription medication, making wider peer/community distribution more complex.[13,14] In September 2018, the governor of San Francisco rejected legislation which would have authorised the establishment of the first SIF in the US.[11] Other US cities that have recently voiced support for the implementation of DCRs include New York City, Seattle, Denver, Ithaca (NY) and Philadelphia.[15]

A noteworthy harm reduction development in this region is the increased availability of fentanyl testing strips, which have been distributed nationally in the US since 2016 through harm reduction programmes and activists,[11] and are available at harm reduction sites and within some DCRs operating in Canada.[4,18] Drug-checking services have been funded on a pilot basis by the Canadian government and operate to vary across the region for opioids and other drugs, such as MDMA, methamphetamines, cocaine and LSD.

Given that North America has the highest annual prevalence of amphetamine-type stimulant (ATS) use in the world,[28] the harm reduction response for people who use stimulants continues to fall short of need, and there remains a need to support the development, evaluation and expansion of harm reduction interventions specific to ATS use.[19,20] There is one best practice harm reduction programme for people who stimulants in Toronto[7] (please see ATS section, p.9).

Although certain harm reduction interventions have been scaled up in the community, provision of harm reduction in prisons continues to be
woefully inadequate, falling far short of meeting both international human rights and public health standards. In the United States, one in nine arrests are for drug possession, and 47% of people incarcerated in federal prison are sentenced for drug offences.

This regional chapter highlights a distinction between the United States and Canada. Under the current US administration, the “War on Drugs” and abstinence-focused rhetoric drive punitive approaches, disproportionate criminal penalties and resistance to harm reduction interventions (including SIFs and naloxone distribution). This punitive approach further manifests in involuntary confinement and forced treatment (in places like Massachusetts, Pennsylvania, New Jersey and Wisconsin) and discriminatory criminalisation of black and Latinx people for drug-related offences. Even given the difficult political climate, civil society organisations all over the United States continue to promote and practise evidence-based harm reduction. In contrast, the Canadian government has publicly, politically and financially committed to and endorsed harm reduction.

As in every other part of the globe, there remains a distinct lack of harm reduction services for women in the region. Women who use drugs face a range of gender-specific barriers to accessing harm reduction programmes and healthcare services and, in some states in the US, may face prosecution for child abuse for using drugs while pregnant, or may have their children removed by the state on grounds of drug use alone.

Developments in harm reduction implementation

Needle and syringe programmes (NSPs)

NSPs operate in both Canada and the US, with the US seeing an increase in the number of states operating these services since 2016. The US now has 335 NSPs operating across the country, an increase of 91 in total since 2016, equalling a 37.3% rise in programmes. The US also saw its first NSP vending machine open in Las Vegas in 2017. The increase in NSPs is a result of the federal government changing its position on NSPs, leading to a partial repeal of the ban on federal funding for this service. While the use of federal funds to purchase sterile needles or syringes to inject illicit drugs remains prohibited, the Consolidated Appropriations Act 2016 enables federal funds to be allocated to other aspects of NSPs, including HIV and HCV testing, naloxone provision, human resources, rent and other expenditures needed to keep them in operation. The partial repeal of the ban on federal funding has had the most impact across the Appalachian region and in the Southern states. In the Appalachian region in 2013, prior to the government changing its legal position on NSPs, only one service was operational, with NSPs illegal in Kentucky and North Carolina. Since the partial repeal of the ban, both Kentucky and North Carolina have legalised NSPs; there are now 53 NSPs in operation across these two states. North Dakota, Montana and Michigan have also seen an increase in NSPs. Although NSP coverage has improved in some states, provision of this service overall remains patchy, with other states, such as Iowa, having only one registered NSP in operation.

The United States saw annual HIV diagnoses among people who inject drugs decrease by approximately 48% between 2008 and 2014. Of note, however, is a shift in trends in injecting drug initiation and unsafe injecting practices. Overall heroin use, for example, has increased more than 114% among white people, and 46% of new injectors (people who have been injecting drugs for a period of five years or less) are reported to practice unsafe injection, such as the sharing or reusing of needles and syringes.

Large hard-to-access rural areas are often neglected, and major gaps in service provision exist in the Mountain, South and Midwest regions of the US, where there is sometimes no NSP access at all. These states, due to sanctions and funding, leave people with no safety net, and rural outreach is often a tricky and costly pursuit when not utilising peers and community health workers. Pregnant or parenting women are also often fearful of seeking services from NSPs due to stigma and punishment, which forms a major barrier for them. While targeted efforts to reach women exist, they are limited and often small-scale. Awareness and cultural relevance of NSPs also remain issues, which not all services are addressing. The vast majority of messaging and materials cater to people who inject opioids, unintentionally excluding populations which would benefit from harm reduction tailored to ingestion techniques, particularly given the changing cohort of people who use opioids in the United States.

In Canada, provinces and territories are responsible for providing public health prevention services, such as

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1 Latinx is the gender-neutral alternative to Latino, Latina and Latin@.
2 This figure does not include Puerto Rico. Please refer to the Caribbean chapter (p81) for information on Puerto Rico.
as NSPs.[11] It is estimated that 94.5% of people who inject drugs used sterile injecting equipment at last injection.[36] Barriers to access remain, especially in northern, rural and remote communities (where there is a lack of access to healthcare more broadly, especially for people who use drugs), with a disproportional impact on the many Indigenous (First Nations, Métis and Inuit) communities who reside in northern, rural and remote regions of Canada.[4] Some municipalities have also passed discriminatory zoning bylaws that prevent NSPs and other harm reduction services from operating in certain areas, thus imposing geographical barriers.[42]

**Opioid substitution therapy (OST)**

OST provision is available in both the United States and Canada. In the US, approximately 2.1 million people had used either medically prescribed or illicit opioids during the course of 2015. During the same period, 411,331 people accessed OST services.[35] OST in the US is available in the form of methadone, buprenorphine and naltrexone.[15] It was estimated that between 2006 and 2016, OST was only available in 8.5% of all facilities, both public and private, that can provide this medication in the United States.[28]

Methadone is more strictly regulated through federal and state laws in the United States, and although it is available both publicly and privately, 64% of people who received methadone in 2016 received it from a private facility.[28] Buprenorphine is more widely available, with access broadened in 2016 when President Obama signed into law Section 303 of the Comprehensive Addiction Recovery Act (CARA).[37] This law extended buprenorphine prescribing privileges to nurse practitioners and physician assistants, following the successful completion of 24 hours of training. Physicians who dispense buprenorphine must qualify for a physicians’ waiver and complete eight hours of training.[33,38] Although the law enables the extension of OST services, in practice 28 states prohibit nurse practitioners from prescribing buprenorphine unless they are working in collaboration with a doctor who has a federal licence, and half of all the counties in the US do not have a single physician with a licence.[39]

There are, however, pockets of good practice emerging, with the state of Vermont integrating hub-and-spoke models of OST provision.[15,40,41] This model uses regional hubs offering daily OST support together with local spokes, including doctors, nurses and counsellors for people using opioids or transitioning to OST who can oscillate between the two, subject to need.[40] Vermont now has the highest capacity for OST in the USA, seeing a 64% increase in physicians able to prescribe buprenorphine, and a 50% increase in people seen per (waivered) physician.[40] A small study in New York demonstrated harm reduction service providers are the preferred site of buprenorphine provision for 51% of people who use opioids.[13] Expanding prescribing authority to harm reduction service providers across the US could best meet user preferences and significantly increase access.

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<sup>1</sup> This figure does not include the number of people using extended release naltrexone for detoxification.

<sup>m</sup> As naltrexone requires people to stop using opioids and to undergo a detoxification programme, and its links to overdose mortality since last injection remain unclear,[26] it will not be covered within the body of this report.
In Canada, OST is available in the forms of methadone, buprenorphine, buprenorphine/naloxone combinations (for example, Suboxone) and injectable prescription heroin known as heroin-assisted therapy (HAT).\(^{4,18}\) OST is available in all 10 provinces in Canada through a variety of models, including government-funded programmes, private clinics and family practice; but the total number of sites is unknown due to a lack of aggregated national surveillance.\(^{4,18}\)

In Ontario, Canada’s largest province, the number of people receiving OST has increased from 6,000 in 2000 to over 40,000 in 2016,\(^{48}\) highlighting the scaling up of services. However, even with the increases in provision, a number of barriers to accessing OST remain. These include a lack of treatment providers, particularly in rural and remote areas; burdensome requirements such as weekly clinic visits (not required by treatment standards); a lack of OST integration into primary care services; unaffordable clinic fees; and until March 2018, the requirement for physicians to obtain an exemption from the federal Controlled Drugs and Substances Act (CDSA) to prescribe methadone.\(^{4,18}\)

Policy developments to reduce barriers to the implementation of HAT have taken place in Canada. For example, in 2015 the Supreme Court in British Columbia ruled that people who were receiving HAT as part of a clinical trial (at time of publication the only mode of accessing HAT in Canada) would be able to continue receiving the medication outside a research setting.\(^{48}\) Although clinical trials have illustrated significant positive outcomes, including a reduction in street heroin use of 70%, HAT had not been expanded outside research settings at the time of reporting.\(^{19}\) In March 2018, the Canadian government took measures to facilitate access to OST by removing regulatory barriers to the prescription of methadone and heroin-assisted therapy (HAT). These amendments removed the requirement for physicians to apply for a CDSA exemption to obtain and prescribe methadone, and allow both physicians and nurse practitioners to administer methadone and HAT outside of hospital setting.\(^{49}\)

Amphetamine-type stimulants (ATS), cocaine and its derivatives, and new psychoactive substances (NPS)

North America has the highest annual prevalence of amphetamine-type stimulant use in the world, with 2% of 15-64 year olds using a stimulant in the past year.\(^{2,18}\) Stimulants, including cocaine and the non-medical use of prescription stimulants such as Ritalin, were used by nearly 11 million people in the United States in 2015.\(^{8}\) In Canada, although prevalence of past-year use of at least one illicit drug had increased by 2% (from 11% in 2013 to 13% in 2015), the number of people in Canada reporting using a stimulant in the past year remained unchanged at 1%.\(^{31}\)

As in other regions of the world, ATS use is generally increasing, including within the market of new psychoactive substances (NPS), with 36% of all NPS on the global market being stimulants.\(^{31}\) And although there are a small handful of harm reduction services for people who use stimulants, there remains a serious need to support the development, evaluation and expansion of harm reduction interventions specific to ATS.\(^{19,20}\) This need is apparent when looking at the increase in emergency room visits related to the use of methamphetamine (rising from 68,000 in 2007 to 103,000 in 2011) in the US,\(^{31}\) and rates of drug overdose deaths involving (psycho)stimulants, which increased 23% between 2008 and 2015.\(^{31}\) The rise in ATS use in the US, particularly methamphetamine, is not adequately covered by the harm reduction response.\(^{20,16}\)

A recent report by Mainline, a Netherlands-based harm reduction organisation, provides the most comprehensive review of stimulant harm reduction programmes and practices to date.\(^{16}\) The report provides a literature review on various types of stimulants, routes of administration and harm reduction strategies; seven case studies from across the globe; and reviews interventions more specific to people who use stimulants. The potential health-related harms of stimulant use are different to that experienced by people who use opioids. People who use stimulants report feeling that they belong to different (social) networks of people who use drugs, meaning they may feel opioid-focused harm reduction services are irrelevant or inaccessible to them.\(^{19}\) However, similar to people who use opioids/inject drugs, there is no single intervention which is recommended but a comprehensive body

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\(^{n}\) During 2015, 4,828,000 people used cocaine in the past year, 1,713,000 used methamphetamine and 5,251,000 misused prescription stimulants.
of interventions.[19] These include: safer smoking kits for people who smoke crack cocaine and/or methamphetamines; prevention of sexual risk; female-focused interventions; drug consumption rooms; self-regulation strategies; substitution; outreach and peer-based interventions; drop-in centres; housing first; therapeutic interventions; and drug-checking services.[19]

In the US, a small handful of the above interventions exist. DanceSafe is one popular harm reduction and peer-based education intervention which offers a drug-checking service (EcstasyData.org) and the only publicly accessible laboratory analysis of ecstasy data in the US. [152] It also provides testing kits to purchase online, including for methamphetamines, opioids, MDMA and psychedelics such as LSD, as well as fentanyl test strips. [152] One of the central issues for drug-checking services is they often have to overcome legal challenges around licences to possess and work with scheduled substances, with many countries still not accepting drug-checking as a valid argument to issue an exemption. [150] The limited programmes that exist in the US do not meet need and are underfunded. With a steadily increasing prevalence of ATS use in the United States, [154] it is clear that comprehensive, accessible harm reduction services are much needed.

In Canada, the harm reduction response for people who use ATS is a little more established, and over recent years federal and provincial governments have scaled up drug-checking services in the country. [4,18] These services are more recently funded by the federal government and operate at a number of supervised injection and overdose prevention sites (see DCR section). [18] Although much of the emphasis on the scaling up and adoption of new harm reduction services has been in response to the opioid crisis, [18] drug-checking services throughout the country also target other subpopulations of people who use drugs and some technologies (e.g. fentanyl test strips) are available for purchase. [155] In late 2017, Health Canada committed to authorising and funding pilot projects providing drug-checking services at supervised consumption sites in British Columbia and Ontario. [56] British Columbia has also funded publicly available anonymous drug-checking services, acknowledging that some overdose deaths are caused by fentanyl contamination of non-opioid drugs such as cocaine. [4]

Other harm reduction programmes for stimulant users have also been established in Canada, such as COUNTERfit in Toronto, a best practice example of a harm reduction programme for people who smoke either crack cocaine or methamphetamine. [19] COUNTERfit has around 73% of service users using ATS and around 90% of service users engaging in polydrug use. [19] Operating since 2000, COUNTERfit was the first in Canada to address the needs of non-injectors by distributing kits for safer crack and methamphetamine smoking. [19] The programme’s success comes in meeting the health and social needs of people who use drugs via a number of access points: a fixed site; mobile outreach services offering an out-of-hours delivery service; and at the homes of trained service users within their network via community or agency-based satellite services. [19] In 2017, the programme distributed 67,500 crack stems to service users, reaching approximately 150 people every day. [19] People can order both sterile needles and injecting equipment alongside smoking equipment for free. The programme also offers a women’s harm reduction programme and an aboriginal support group, recognising the unique needs and challenges of both groups. [19] The majority of COUNTERfit’s funding comes from Ontario’s Ministry of Health and Long Term Care, with some financial support from the municipal government of Toronto. [19]

Other harm reduction interventions, such as cannabis as a means of reducing the frequency of crack cocaine consumption, have also been made available in Canada, [151] but predominantly as research/pilot studies. The first federally sanctioned supervised inhalation services opened in Lethbridge and Calgary, Alberta in 2018. [158]

While there is less evidence on harm reduction interventions for people who use stimulants than for opioid users, new research and the handful of harm reduction programmes for stimulant users are showing promising results. [19] More research, including into some of the strategies highlighted in the 2018 Mainline report, better monitoring of impact, and sharing of best practices and funding for inclusive harm reduction services for people who use stimulants (including cocaine and its derivatives) are much needed in North America. [20,19]

Overdose, overdose response and drug consumption rooms (DCRs)

In a 15-year period (2000-2015), the US saw almost 600,000 fatal overdoses. [160] This is the equivalent to a population the size of Baltimore disappearing. In 2016, 63,632 people died from a drug overdose in the US, 66.4% of which involved opioids. [59] In New York City alone, a fatal overdose occurs every seven hours. [59] There are more annual deaths from an opioid overdose in New York than fatal car accidents, suicides and homicides combined. [60]
Important developments have taken place in response to the unprecedented number of overdose-related deaths in North America. Naloxone is a highly effective opioid antagonist used to reverse the effects of opioid overdose in minutes. The medicine, which can be delivered in various ways (intranasal, sublingual and buccal) can, however, only be effective if accessible. Many community-based naloxone programmes in the US are in operation, some staffed by individuals who identify as peers or having lived experience with drug use, and some via formal peer-distribution where people are given large quantities of the medicine to distribute through their personal networks. The greatest barrier to distribution, however, is the fact that naloxone remains a prescription medication in the US, meaning wider peer/community distribution can only operate with a medical gatekeeper who can procure a licence to purchase the medicine with the authority to distribute it under a standing order.

Civil society organisations and activists have been remarkable in overcoming these challenges, with an estimated 1 million doses of naloxone distributed across the US via community-based programmes in 2017. Naloxone programmes have expanded in at least seven states (including Nevada, Iowa, North Dakota, Virginia, Michigan, Texas and Florida) and several indigenous communities in Minnesota and Wisconsin have begun naloxone distribution, including establishing the first tribal-approved contracts to purchase and distribute the medicine. In 2017, the state of New York implemented a naloxone co-payment assistance program (N-CAP) through a New York State Department of Health access initiative, the first and only subsidised programme for naloxone obtained at pharmacies in the United States. This means that in over 2,000 pharmacies in New York state, a person can pick up naloxone treatment valued at US$40 (including nasal spray, intranasal and intramuscular) at no cost to the individual.

In an evaluation of community opioid overdose prevention, researchers found 83-100% survival rates post-naloxone treatment, demonstrating that non-medical bystanders trained in community opioid prevention techniques were effectively able to administer naloxone. Yet in some states, public health funding for naloxone is being diverted from services for people who use drugs into the purchase of naloxone for law enforcement officers. Efforts to expand naloxone to first responders is vital, but should not supersede community-based peer-distribution.

Inflammatory media reports in the US also represent a barrier to the roll out of naloxone; for example, false narratives on naloxone-resistant fentanyl, stories of “narcan parties” and allegations of first responders’ exposure to fentanyl (by air or skin) resulting in “overdose” have the effect of transforming an essential medicine into a fabricated moral hazard.

Similarly to the US, Canada has witnessed a dramatic increase in opioid-related deaths. In 2017, 3,987 opioid-related deaths were recorded, 72% of which involved fentanyl or fentanyl analogues. Canada is larger than the US in terms of landmass and has just one tenth of the US population. Canada’s response to the overdose crisis has been multifaceted. As noted above, the Canadian federal government removed many barriers to accessing naloxone in 2016 now, instead of requiring a prescription for each individual in need of naloxone, pharmacies are able to proactively distribute naloxone to those who might experience or witness an opioid overdose.

In May 2017, a new law (Bill C-37) was passed in Canada which included amendments to the Controlled Drugs and Substances Act to streamline and simplify the application process for opening supervised consumption sites, and 26 sites were approved at the time of publication. Across Canada, grass roots leaders have established pop-up overdose prevention sites (OPS) to better respond to the high rates of overdose, and use the language of OPS to convey the importance of these interventions to the community at large. These new pop-up OPS originated in Vancouver in response to delays from the government, with members of the community setting up a tent in an alley in the Downtown Eastside area and stocking it with needles and naloxone, enabling people to inject safely. Activists in Toronto and Ottawa followed suit, providing unsanctioned spaces for people to use drugs in the presence of others (including healthcare and harm reduction volunteers) and providing naloxone. In April 2016, in response to the alarming rise in overdose deaths, British Columbia’s minister of health declared a public health emergency under the provincial Public Health Act. By December 2016, the health minister had signed a ministerial order to activate overdose prevention services as a means to provide temporary safe spaces for people who use drugs to be monitored in the case of an overdose. Since this order, at least 25 of these facilities have been established across the province. In other provinces, such as Ontario (which saw 850 opioid-related deaths in 2016), unsanctioned OPS were established by communities in response to the overdose crisis in 2017. However, a recent change in the Ontario provincial government – led by a premier who has publicly stated his opposition to overdose prevention services – means the future of these in the province is unclear.
In Vancouver, Sister Space, a women-only overdose prevention site, also opened in 2018 and is the first female-only space where women can access NSPs and overdose prevention. In late 2017, the federal government announced that Health Canada would authorise emergency overdose prevention sites for those provinces and territories that requested them; the Ontario government formally requested approval, with eight approved sites operating in the province at time of publication. OPS sites currently operate in four provinces (British Columbia, Alberta, Ontario and Quebec), with the first federally-sanctioned supervised inhalation service opening in Alberta in 2018.

Another harm reduction measure designed to contribute towards addressing the overdose crisis in North America is drug-checking services. The rise in fatal overdoses in the region is driven partly by prescribing practices and in part by a surge in fentanyl contamination of the street drug market, a synthetic opioid significantly more potent than heroin. Prescribing practices over the last decade have been postulated as resulting in people seeking out illicit opioids for pain relief once their prescription has been retracted, and receiving fentanyl or fentanyl-laced drugs which are much stronger than the person is used to and therefore contributing heavily to fatal overdose rates. In the United States, fentanyl deaths have increased by 540% in three years. Given this, in 2016 harm reduction service providers and activists began distributing fentanyl testing strips, shown to be an effective overdose prevention strategy within the community of people who use drugs. Testing strips, like all harm reduction interventions, are dependent on funding; although several programmes in the US have received monies to provide this service, others are forced to raise private funds (some through crowdfunding sites) to sustain their activity.

When the Global State of Harm Reduction last reported in 2016, there were no safer injection facilities (SIFs) in the US. Since then, momentum has been building around SIFs, with several cities supporting policies on the implementation of these spaces, including New York, San Francisco, Seattle, Denver and Philadelphia. At time of publication, no sanctioned SIFs were operating in the US, although at least one facility was operating “underground” in the country. In September 2018, the governor of San Francisco rejected legislation which would have authorised the establishment of the first SIF in the US.

The US and Canada both have Good Samaritan laws, which protect people from arrest or prosecution for drug possession when they call for help in the event of an overdose, and support a legal and policy environment conducive to harm reduction. In the US, 40 states and the District of Columbia have now enacted some form of Good Samaritan laws. In May 2017, the Good Samaritan Drug Overdose Act was passed in Canada, amending Canada’s Controlled Drugs and Substances Act to exempt a person from being charged or convicted of the offence of possession of drugs when emergency help is sought for an overdose, and evidence of drug possession was obtained or discovered as a result of the person having sought assistance or having remained at the scene. Seeking emergency help could include calling 911, leaving the scene to call 911 or leaving the scene to locate emergency medical assistance. The increase in drug-induced homicide laws undermines the provision of Good Samaritan laws in the US.

Viral hepatitis

Viral hepatitis continues to disproportionately affect people who inject drugs in North America. In the United States an estimated 4.4 million people are living with a chronic viral hepatitis infection, with the number of new hepatitis C infections increasing rapidly, prior progress in reducing new hepatitis B infections stalling and hepatitis-related deaths increasing. Injecting drug use continues to be the most common risk factor for acquiring hepatitis C through unsafe injecting practices such as the sharing or reusing of needles and syringes, and between 2010 and 2014 a 350% increase in hepatitis C among people who inject drugs was seen in the US. In a research paper examining trends in incidence of acute hepatitis C among young people, 88% of the 34 reporting states in the US observed a higher incidence of acute hepatitis C in 2012 than 2006, with 75% (n=635) of interviewees reporting injection drug use. Diagnosing and treating people who inject drugs improves health outcomes and prevents transmission of hepatitis viruses to others; however, links to hepatitis C care and treatment remain poor.

A central issue in the US is the criteria limiting access to hepatitis C treatment for people who inject drugs via Medicaid programmes. Currently, the most effective treatment for hepatitis C is direct-acting antivirals (DAAs), but patient access is often subject to fibrosis stage, abstinence from drugs and alcohol, and prescriber eligibility (which can be limited to

Medicaid is a joint federal and state programme that may assist with medical costs for people with limited income and resources.
certain categories of specialist practitioners.\textsuperscript{[78]} Although efforts have been made to eliminate these restrictions, 24 states continue to have restrictive Medicaid treatment policies that require a period of abstinence before receiving treatment, and 18 states have no laws authorising syringe exchange programmes.\textsuperscript{[79]} Access to needles and syringes is a public health strategy used to reduce the risk of infection from blood-borne viruses such as hepatitis.

In Canada, it is estimated that between 220,697 and 245,987 people were living with chronic hepatitis C in 2011.\textsuperscript{[80]} Similar to the US, unsafe injecting practices such as the reusing or sharing of needles and syringes is considered the most significant mode of hepatitis C transmission in the country,\textsuperscript{[81]} with 54-70% of hepatitis C infections contracted via this route of transmission.\textsuperscript{[81]} However, whereas in the US rates of hepatitis C are steadily increasing, in Canada the rate of reported cases of hepatitis C have decreased from 40.2 per 100,000 in 2005 to 29.3 per 100,000 in 2014.\textsuperscript{[82]} Public health interventions, such as NSP and OST provision, believed to have impacted hepatitis rates among people who inject drugs.\textsuperscript{[3]}

Although Canada does not have a national policy on hepatitis C, testing and treatment are theoretically available to people who use drugs, with at least eight provinces and territories removing a fibrosis stage requirement for hepatitis C treatment (including British Columbia, Ontario, Quebec, Saskatchewan, Manitoba, Alberta, Yukon Territory and Prince Edward Island).\textsuperscript{[83]} While coverage of testing and treatment is difficult to assess in Canada due to a lack of centralised data, civil society reports that in practice, access remains a challenge for many.\textsuperscript{[84]} In Newfoundland, for example, people who use drugs have been disqualified from accessing hepatitis C treatment.\textsuperscript{[84]} In a national sample of people who inject drugs, 20.2% of people who tested positive for hepatitis C were unaware of their status\textsuperscript{[85]} and only 15.3% of those who knew their status were taking medications prescribed for hepatitis C.\textsuperscript{[86]} A primary deterrent to seeking testing and treatment among people who use drugs in the country remains the fear of stigma and discrimination in healthcare settings, and the variable degree to which hepatitis C testing and treatment is integrated into harm reduction or HIV programmes.\textsuperscript{[84]}

Tuberculosis (TB)

Data on TB prevalence, prevention, treatment and care among people who inject/use drugs in the region continues to be scarce, limiting the effectiveness of policies and programmes designed to address this issue and making it difficult to provide a useful overview of the situation in the region. In Canada, around 1,600 new cases of TB are diagnosed each year, with TB rates higher among Indigenous populations.\textsuperscript{[87]} There are multiple reasons for this, including poor housing conditions, higher rates of malnutrition and reduced access to medical care, highlighting the health and socio-economic disparities often seen in these populations.\textsuperscript{[88]}

Similar to all regions of the world, people who use drugs in North America have increased rates of TB infection, particularly if they are living with HIV.\textsuperscript{[86]} When TB treatment is integrated with HIV, hepatitis C and OST, improved outcomes for each condition have been observed, as well as improved adherence and retention in tuberculosis treatment for those living with TB.\textsuperscript{[85]} International standards require a coordinated and integrated response to the needs of people who use drugs in order to provide universal access to prevention, treatment and care services at all entry points.\textsuperscript{[84]}

Antiretroviral therapy (ART)

In the United States, an estimated 1,122,900 people were living with HIV at the end of 2015, with an estimated 38,500 new HIV infections that year, 9% attributed to injecting drug use.\textsuperscript{[89]} Among all populations in the US, the estimated number of new infections declined between 2011 and 2015. However, for the 1.1 million people thought to be living with HIV, only 48% of people were retained in continuous HIV care, and only 49% of people had achieved viral suppression.\textsuperscript{[87]} In Canada, an estimated 63,111 people are living with HIV, with 2,165 new infections reported in 2016.\textsuperscript{[80]} Among the estimated new infections, approximately 244 were among people who inject drugs, accounting for 11.3%.\textsuperscript{[81]} At the end of 2016, 81% of those diagnosed with HIV were estimated to be on treatment, and 91% of people on treatment had suppressed viral load.\textsuperscript{[84]} In First Nation communities, of the individuals known to be living with HIV, 77% were on treatment and 75% of those in treatment had achieved viral suppression.\textsuperscript{[88]}

People who inject drugs continue to be at high risk of transmitting or acquiring HIV for several reasons, including laws criminalising the possession and use of drugs, the resulting high rates of incarceration, and variable access to sterile syringes and injecting equipment. Research has also highlighted a new generation of heterosexual people who inject...
drugs sharing needles and increasingly interested in methamphetamine.[90] The changing trends in injecting drug use, particularly in terms of methamphetamine injecting, has the potential to increase vulnerability to transmission of HIV in the US.[90] One study found that among men who have sex with men who admitted sharing injecting equipment, their last sharing partner had been a woman in 31% of cases and a heterosexual man in 14% of cases.[90]

In Canada and the US, although access to HIV testing and treatment are available for everyone, people who use drugs continue to have trouble accessing these services.[4] Persistent stigma and discrimination sadly remain, but other systemic factors such as a lack of secure housing, a lack of access to healthcare services (particularly in rural and remote areas) and poverty appear as central barriers to ART initiation and adherence among this population.[9,13]

Harm reduction in prisons

As the Global State of Harm Reduction reported in 2016, the US continues to have the second highest rate of incarceration in the world, with 698 people incarcerated per 100,000.[91] To put this in context, the global average is 144. Nowhere in the world do we see the human consequences of the “war on drugs” as starkly as in the United States, with one in nine arrests – one every 25 seconds – being for drug possession,[22] and 47% of people incarcerated in federal prisons sentenced for drug offences.[23]

In 2010, Michelle Alexander stated “nothing has contributed more to the systematic mass incarceration of people of color in the United States than the war on drugs”.[92] Research clearly illustrates the vastly unequal consequences across racial groups that the “war on drugs” has perpetuated. Although rates of drug use and sales are similar across racial and ethnic lines, black and Latinx people are far more likely to be criminalised for a drug-related offence than white people.[20] Prosecutors are twice as likely to pursue a mandatory minimum sentence for black people as for white people charged with the same offence.[20] One in nine black children has an incarcerated parent, with the rates one in 28 and one in 57 for Latinx children and white children respectively; and 40% of those incarcerated in a state or federal prison for drug violations are black, 37% Latinx.[20]

A 2015 estimate of the cost of “hyperincarceration” stated that each year the US spends $80 billion on imprisoning people,[92] however, a later study noted that for every dollar spent on correctional costs, incarceration generates an additional ten dollars in social costs, bringing the aggregate burden per year to $1 trillion.[93] Although it is clear there is an unmanageable trend for over-incarceration and punishment for people who use drugs, former US attorney general Jeff Sessions rescinded the 2013 Cole Memo (which allowed federal prosecutors to choose not to prosecute marijuana offences in the states that allow adults to consume it) as well as the Smart on Crime initiative, which addressed racial disparities and disproportionate drug sentencing.[94]

In Canada, prison numbers are considerably lower than the US, with 106 people incarcerated per 100,000.[90] However, similarly to the United States there is an over-representation of racialised communities entering the prison system, particularly the Indigenous population.[95] Between 2007 and 2016, although the general prison population in Canada increased by just under 5%, the Indigenous prison population increased by 39%, and incarcerated Indigenous prisoners were much more likely to experience segregation in solitary confinement (36.5%).[95]

Imprisoning people for drug use is not only costly and systematically discriminatory, it also appears one of the most counterproductive criminal sanctions, as drug use continues within the prison setting.[96,97] In 2014, the World Health Organization estimated that every sixth prisoner is thought to be using drugs in prisons.[97] A study undertaken in 2015 in Baltimore found that incarceration did not only fail to curtail injecting drug use among former injectors, but that longer periods of incarceration were actually associated with increases of injecting among former injectors.[98] Between 2012 and 2017 the percentage of positive drug tests via random urine analysis in Canadian prisons fluctuated between 5.6%-6.3%, despite significant investments in detection and surveillance to stop drugs from entering prisons. [99]

Despite evidence of drug use in prisons and the clear need for harm reduction in these settings, provision continues to be extremely limited, falling far short of meeting international human rights and public health standards.[100] HIV prevalence among prisoners in the United States is 3-5 times greater than the general population,[99,100] and 20-26% of people living with HIV/AIDS in the US will have spent time in the correctional system at one point in their life.[100] Prevalence of HCV among prisoners is also much higher than the general population, with the largest population of HCV-positive inmates in the world found in North America (553,500-784,000).[102]
Tuberculosis has also been reported to be up to 100 times higher among prisoners,[103] with 29 cases per 100,000 in local jail inmates, 8 per 100,000 in state prisons, and 25 per 100,000 in federal prisons in the United States.[104] Prisons continue to represent high-risk environments for the transmission of blood-borne infections for a number of reasons. These include: the over-incarceration of vulnerable and disadvantaged groups who are more likely to suffer from poor health; the criminalisation of people who use drugs; risky behaviour in prisons, such as unsafe injecting drug use; inadequate health care and late diagnosis of disease; substandard prison conditions and overcrowding; poor ventilation and repeated prison transfers which encourage transmission of viruses; and the absence of harm reduction services.[105]

Although the US has the largest prison population in the world, critically needed harm reduction programmes, such as NSPs, remain unavailable in 2018. In June 2018, Canadian civil society had a breakthrough success in their advocacy for NSPs in prisons, with a prison needle exchange programme authorised to begin operating in one men’s federal prison and one women’s federal prison, where people are serving a sentence of two or more years, and plans to roll-out the initiative across all federal prisons the coming years.[106,107] Details of the new programme, however, reveal serious deficiencies that will likely curtail prisoners’ access, and civil society advocates will continue to push for a better model that reflects the principle of healthcare equivalency.[4]

OST in the form of methadone or buprenorphine remains available in only a small number of American state prisons,[4] meaning coverage for those who have been incarcerated remains extremely poor.[110] OST is a vital service to offer in the prison setting, given that between 24-36% of people who use heroin will pass through the prison system at one point in their life,[108] and the fact that this population is also between 8 and 129 times more likely to overdose in the first two weeks post-release from prison.[109] It is estimated that nearly 90% of people currently receiving OST outside prisons in the US would have their treatment removed if incarcerated.[110]

Of the existing OST programmes in state prisons in the US, many have severe restrictions (i.e. only pregnant women, or a continuation of treatment rather than initiation), with Rhode Island and New Mexico an exception to this rule. In Rhode Island, where OST is available to people in prison in the form of methadone, buprenorphine or naltrexone, there has been a 61% decrease in post-incarceration overdose deaths among those recently released.[111]

The evidence is abundantly clear, yet provision of this medication across the majority of the US remains wholly inadequate, with just 40 local/county jails/ state and federal prisons providing this service out of 5,000 facilities.[109]

In Canada, OST has been available within some prison settings since 1999. OST initiation and continuation is available in all 43 of the country’s federal prisons.[14] However, in provincial and territorial prisons in Canada, OST availability varies, with most provinces offering OST continuation but some not offering initiation, citing difficulties with locating treatment providers, fear of diversion, short length of incarceration, and a lack of staffing and resources, leaving inadequate provision for people who use drugs.[14,18] Harm reduction measures such as OST are also not implemented to the same extent in women’s prisons.[27]

At the time of publication, naloxone provision in US prisons was available in New York State and New Mexico, and on release only. New York State’s Overdose Education and Naloxone Distribution Program was a result of a joint collaboration between the Harm Reduction Coalition, the New York State Department of Health and the New York State Department of Corrections and Community Supervision, and at the end of 2017 over 20,000 people within the prison setting had been trained to use naloxone.[15] In mid-2018, the New Mexico Corrections Department began a naloxone programme similar to the New York model, whereby people are trained whilst incarcerated and offered naloxone on release.[15] In Canada, a take-home naloxone programme began in federal prisons in British Columbia in November 2016, and has since been expanded country-wide, with 4,950 kits expected to be supplied to prisoners on release between 2017 and 2020.[112] The programmes are aimed at inmates who are already on OST or who have a history of opioid use. In federal prisons in Canada, healthcare and some correctional staff also have access to naloxone.[4] However, the situation varies in provincial and territorial prisons.[4]

Research has indicated that prisoners are more likely to be exposed to blood-borne viruses in the prison setting.[102,113] and reports of injecting drug use in prisons are found worldwide.[114] In prisons in the United States, only 37.9% of people newly diagnosed with HIV were linked to HIV services within 90 days.[115] In Canada, voluntary HIV testing and treatment is offered in all federal, provincial and territorial prisons.[18] The estimated HIV prevalence among people who are in federal prison has declined

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in Canada, going from 2.02% in 2007 to 1.2% in 2017, with 94% of people known to have HIV receiving ART treatment.[115] Disruptions to treatment occurring during transfers between institutions and to/from the community remain a challenge.[4]

In Canada, it is estimated that around one in four prisoners have hepatitis C.[117] Voluntary testing is offered in all federal, provincial and territorial prisons,[4] with the treatment budget for this population in federal prisons increasing fourfold since 2010 (CAN$16.5 million between 2017-2018).[118] All federal prisoners diagnosed with hepatitis C in Canada are eligible for treatment, regardless of fibrosis stage.[4] In the United States, recent analysis suggests that only around 10% of the prison population who have chronic hepatitis C can access medication.[118] Studies also indicate that hepatitis C testing is limited for people who use drugs, and that treatment for people in prisons is uncommon.[119]

TB diagnostics and treatment is available for people who use drugs in prisons in both Canada and the United States.[4,119] However, it is unclear the extent and ease of access. Condoms are only available in prisons and jails in three American states: Vermont (since 1992), Mississippi (since 1992 and limited to married prisoners receiving conjugal visits) and California (since 2014), as well as several other cities.[121] In Canada, condoms are available in all federal prisons, although barriers to access have been reported, including as a result of inconsistent stock or condoms only being available through healthcare staff.[4]

### Policy developments for harm reduction

Since the Global State of Harm Reduction last reported, important harm reduction policy developments have taken place in both the United States and Canada. On 22 July 2016, President Obama signed into law Section 303 of the Comprehensive Addiction and Recovery Act (CARA) in the United States.[37] This law aimed to improve access to certain harm reduction interventions, such as overdose prevention medication and access to OST.[122] That same year also saw the 21st Century Cures Act signed into law, which over a nine year period (beginning in 2016), would authorise US$500 million to cover the costs of accelerating medical product development and bring new innovations and advances to people who need them,[123] having the potential to improve provision of OST and naloxone.[15] The amendment to the longstanding federal funding ban on NSP also occurred in 2016, with the US government changing its position on NSPs, resulting in a partial repeal of the ban on federal funding for this service. While the use of federal funds to purchase sterile needles or syringes to inject illicit drugs remains prohibited, the Consolidated Appropriations Act 2016 enables federal funds to be allocated to other aspects of NSPs, including HIV and HCV testing, naloxone provision, human resources, rent and other expenditures needed to keep NSPs in operation.[11,31]

In the two years since CARA’s initiation and the partial repeal of the ban on funding, NSP services in the US have increased.[15] Although OST in the form of buprenorphine is more widely available due to the extension of prescribing privileges, over half of US states continue to prohibit nurse practitioners from prescribing OST.[39]

In 2016, the Canadian Ministry of Health reformed the National Anti-Drug Strategy to become the Canadian Drugs and Substances Strategy, which includes harm reduction as one of its four core pillars.[14] This new strategy led to the adoption of regulatory amendments to make naloxone available without prescription (enabling pharmacies to proactively distribute the medicine to those who might experience or witness an opioid overdose); supported new front-line harm reduction interventions to reduce the risk of blood-borne viruses and sexually transmitted infections resulting from sharing drug use equipment and other related behaviours; created a streamlined application process for communities that wish to open supervised consumption sites; noted the importance of harm reduction to federally funded health services for Inuit and First Nations communities; and endorsed public education, awareness and monitoring programmes before and after legalising and regulating cannabis.[14] Prior to May 2017, organisations seeking to operate supervised consumption services without the risk of criminal prosecution were required to apply for an exemption from Canada’s Controlled Drugs and Substances Act by the federal Ministry of Health.[4] Without this exemption, people who use drugs and staff members were at risk of criminal charges for drug possession. In May 2017, Bill C-37 repealed the 26 onerous conditions required for exempting new supervised consumption sites, making the establishment of supervised consumption services more feasible.[18]

At the international level, Canada has also been vocal in its support for harm reduction. At the Commission on Narcotic Drugs in March 2018, Canada led efforts resulting in the first-ever resolution on stigma against

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5 Naloxone is a highly effective opioid antagonist used to reverse the effects of opioid overdose in minutes.
people who use drugs. In contrast, the current US administration favours a “war on drugs” rhetoric and harsher sanctions for people who use drugs, despite their lack of effectiveness. Since January 2017, the US president called for the death penalty for people who sell drugs, a tougher stance on minimum mandatory sentences for drugs and greater use of drug-induced homicide laws.

Civil society and advocacy developments for harm reduction

Since the Global State of Harm Reduction last reported in 2016, important civil society events have taken place in both Canada and the US.

In October 2018, approximately 2,000 delegates convened at the 12th National Harm Reduction Conference in New Orleans. The conference is the only national multidisciplinary conference focused on improving the health of people who use drugs. In May 2017, the 25th Harm Reduction International Conference took place in Montréal. It was one of the largest conferences in the international series to date, with approximately 1,000 delegates from over 70 countries. During the conference, people who use drugs protested during a speech by the then Canadian minister of health under the banner “They Talk, We Die”, in reference to the growing overdose rates in the country and the lack of adequate harm reduction provision. With overdose deaths remaining the leading cause of mortality among people who use drugs in Canada, an annual National Day of Action on the Overdose Crisis was established in 2017.

Canada’s Drug Futures Forum took place in Ottawa in 2017, where more than 120 researchers, policymakers, public health officials, law enforcement professionals, drug users and community organisers met to examine the future of Canada’s domestic and international drug policies. The four focus points of the conference were international control and management of drugs; decriminalisation, regulation and harm reduction; integrating policing and public health; and strategies for health and social equity in drug policies.

Within the US, federal government engagement with harm reduction organisations or drug user groups appears to be minimal. In Canada, people who use drugs and harm reduction organisations are increasingly being included at both federal and provincial levels in the development of harm reduction and drug policies.

In Canada, advocacy towards the decriminalisation of drug possession for personal use made notable progress, with two major federal parties (the New Democratic Party and the Liberal Party of Canada) passing policy resolutions endorsing the decriminalisation of drugs for personal use.

Drug user networks also operate at the national level, although they are not active among all communities throughout Canada. The Canadian Association of People who Use Drugs is part of the wider umbrella network of the International Network of People who Use Drugs (INPUD). In the US, the National Urban Survivors Union, a grass roots coalition of drug users (both former and active) dedicated to ensuring respect and social justice for the community, operates in San Francisco and North Carolina and is affiliated with the North American Network of People who Use Drugs (NANPUD).

In Canada, funding for harm reduction has increased at both the national and provincial levels, including through the Substance Use and Addictions Program administered by Health Canada, which provides CAN$26.3 million yearly to address substance use problems through treatment, prevention,
harm reduction and health promotion.\textsuperscript{[132]} The federal government also established a new Harm Reduction Fund, administered by the Public Health Agency of Canada, which will invest CAN$30 million between 2018 and 2022 to support harm reduction projects.\textsuperscript{[134]} These funds significantly contribute to the harm reduction response, yet Canada still does not consistently meet international recommendations for coverage of services, and could improve its adherence to its international human rights commitments.