



History of naloxone kits in BC: From inception to expansion

The Take Home Naloxone program's history, how far we've come since its inception, and the work yet to be done.

Vivian W.L. Tsang, MGC, Jane A. Buxton, MBBS, MHSc, FRCPC

The spike in overdose deaths in BC due to COVID-19 serves as a reminder that the lack of access to harm-reduction services has significant implications for people who use drugs (PWUD). One of the cornerstones of harm-reduction services in BC is the Take Home Naloxone (THN) program created in 2012. We hope that by providing insight into the program, medical providers will discuss and offer the lifesaving THN kits in clinics and hospital settings when appropriate.

Ms Tsang is a fourth-year medical student in the Vancouver Fraser Medical Program in the UBC Faculty of Medicine. Dr Buxton is physician epidemiologist and medical lead for harm reduction at the British Columbia Centre for Disease Control.

This article has been peer reviewed.

Increasing numbers of heroin-related deaths in 2011 due to a toxic drug supply was a precursor to the overdose crisis in British Columbia. At that time, naloxone was not widely available in Canada despite its 40-year approval history for use in opioid respiratory depression reversal. Naloxone has greater affinity for μ -opioid receptors in the brain than opioids and thus naloxone acts as a competitive antagonist.¹ This allows for effective reversal of the symptoms of opioid toxicity, including respiratory depression for up to 60 minutes while emergency services are called.² While Europe, Australia, and the United States had developed THN programs in some jurisdictions for PWUD, BC, a front-runner on the harm-reduction scene, had not yet responded.³

Peers with lived experience in the community were witnessing friends and family die with no means of intervention. Their voices fueled the determination to make changes to

the existing availability of naloxone to reduce morbidity and mortality among PWUD. The BC Centre for Disease Control (BCCDC) harm-reduction team received approval to implement a pilot THN program in 2012. The team visited a program that had been initiated in 2005 in Edmonton and, with input and generous support from colleagues in the US, began developing training and data collection materials and source supplies.

The pilot was a grassroots effort, with the first THN kits designed from sunglasses cases bought in bulk in Vancouver's Chinatown. They were assembled in the BCCDC pharmacy, but during times of high demand, staff volunteers from across the centre would put them together during their lunch breaks. The naloxone ampoules were added by the pharmacy, where lot numbers and expiry dates were recorded in the kits. This made it possible to achieve central distribution despite limited resources.

Still under Schedule I regulations at the time (prescription-only medication), naloxone had to be prescribed by a physician, which led to the development of stock stickers that would be filled out in advance with information including naloxone batch number, prescriber details, and patient identification. The stickers were placed on pill bottles containing two ampoules of naloxone. The early program also kept a record of every patient who had been prescribed naloxone and received a THN kit.

The major policy issues of the THN program were increasing access to naloxone, tackling public and professional pushback through promotion and education, and identifying physician champions, who in the early days, were critically important to the program's expansion. The rollout of the program was slow and resistance emerged. The first community training session at the Vancouver Area Network of Drug Users (VANDU) was put on hold until concerns stemming from a lack of understanding of the action and scheduling of naloxone were allayed. Emergency departments in Vancouver

were approached, and although supportive in principle, they declined to participate initially as they felt unable to manage the burden of training in a busy clinical environment.

Three components needed for site enrollment were identified: an educator, a prescriber, and a dispenser, and approval from the regional health authority was obtained.⁴ Champions in the Royal Inland Hospital Emergency Department initiated the first THN program in any emergency department in Canada in 2014.⁵ By the end of that year, the program had been implemented at 61 sites, and 1198 THN kits had been distributed to clients in the community [Figure].⁶ The SAVE ME procedure (stimulate, airway, ventilate, evaluate, muscular injection with 1 mL of naloxone 0.4 mg, and evaluate) was used for training and displayed on posters distributed at

sites where THN kits were available. Providers were educated on the distribution and use of naloxone, as well as how to challenge common misperceptions about naloxone as an enabler to opioid use.⁷ Fiscal and time constraints, coupled with work to retain prescribers, were identified as barriers for expansion at that time.⁴

Over the next few years, a number of factors came into play. First, the emergence of fentanyl and its analogs in the toxic street-drug supply led to an unpredictable potency of illicit opioids and an exponential trend in overdose deaths.⁸ A series of

regulatory changes in 2016 and 2017 reduced barriers to naloxone access. In 2016, the federal Minister of Health removed naloxone from the Prescription Drug List, and in September 2016 naloxone was made unscheduled by the College of Pharmacists of BC, allowing it to be

Champions in the Royal Inland Hospital Emergency Department initiated the first THN program in any emergency department in Canada in 2014.

	2012	2013	2014	2015	2016	2017	2018	2019	2020 ^a
Active THN Sites (includes pharmacies) Newly joined in year (Cumulative total in year)	6	27 (33)	28 (61)	45 (106)	349 (455)	527 (982)	467 (1,449)	246 (1,695)	100 (1,795)
Kits Shipped to Sites Shipped in year (Cumulative total in year)	350	1,252 (1,602)	1,973 (3,575)	5,886 (9,461)	52,262 (61,723)	140,748 (202,471)	195,696 (398,167)	232,312 (630,479)	245,953 (876,432)
Kits Reported Distributed to Clients Distributed in year (Cumulative total in year)	106	617 (723)	1,198 (1,921)	3,152 (5,073)	21,519 (26,592)	63,297 (89,889)	60,463 (150,352)	51,498 (201,850)	27,301 (229,151)
Overdose Reversals Reported using THN Kits^b Reported in year (Cumulative total in year)	5	36 (41)	127 (168)	397 (565)	3,941 (4,506)	15,521 (20,027)	21,247 (41,274)	20,575 (61,849)	14,039 (75,888)

a. THN site (excluding inactive sites) and order counts are complete until November 30, 2020; distribution data is reasonably complete to June 30, 2020, due to lag in kit distribution record return to Harm Reduction Services, but includes all records to November 30, 2020.

b. Based on client kits refilled due to naloxone use on self/others to reverse an overdose (distribution data).

FIGURE. Number of THN sites, kits shipped and reported distributed, and overdose reversals 2012 to 30 November 2020.^{6,15-17} [source: BCCDC]

distributed in the community without a physician prescription.⁹ Following the declaration of a public health emergency in BC on 14 April 2016, the program expanded quickly, with increased public awareness and acceptance. Two months later, naloxone became available at all emergency departments through a ministerial directive.¹⁰ In October 2016, the kit production (without naloxone) was outsourced to an external company. Evidence shows that naloxone successfully reduced overdose deaths, improving overall overdose morbidity and mortality.^{11,12}

The Facility Overdose Response Box program was launched in late 2016 to support community site staff and non-health care service providers on site to have ongoing access to naloxone and other resources, and ensured training, protocols, and policies were in place to support overdose events.¹³ Increased overdose deaths and delays in federal approval of supervised consumption site applications led the BC Minister of Health to enact a ministerial order to establish overdose prevention services, which enable clients to use drugs in an observed setting.¹⁴ In 2016, additional THN distribution sites were added to satisfy the twentyfold increase in demand for naloxone [Figure].¹⁵⁻¹⁷ A massive scale-up of the program occurred during the initial peak of the overdose crisis, with distribution increasing from 4688 kits per month in November 2016 to 11 000 kits per month in January 2017.¹⁵

Development of multiple educational resources also increased in 2017 for both providers and the public. It was noted that youth in particular experienced an improvement in their internal locus of control and a sense of safety with THN training.¹⁸ Pharmacists were trained to dispense naloxone kits at community pharmacies, and this laid the foundation for THN kits to eventually be free of charge from pharmacies in BC.¹⁹ High-quality, low-barrier training is available to anyone before or when attending a community pharmacy to obtain a kit (<http://naloxonetraining.com>). It includes an assessment of understanding and a certificate of completion to ensure standardized training occurs.

By 31 December 2020, more than 900 000 kits had been shipped to 1819 active THN distribution locations across BC. Over 80 000

naloxone kits have been reported as used to reverse an overdose, but this is a considerable underestimate.²⁰

Ongoing administrative data collection and research have allowed various aspects of the program to be evaluated.²¹ Research was conducted to investigate correlates of THN possession in BC, which was found to be positively associated with male recipients in 2017 and

Demand for THN kits has risen in the past months as the number of overdoses has increased due to COVID-19.

2018, primarily those aged 31 to 60.²⁰ More than two-thirds of those who received a kit reported being at risk of overdose.²⁰ A recent cross-sectional analysis revealed lower rates of THN kit possession among people who use drugs by non-injection routes.²² However, smoking is the preferred mode of opioid use in BC, and Coroners Service data also revealed the highest proportion of deaths for PWUD are among those who smoked drugs.²³ This disparity reveals the need for increased education on the overdose risk associated with smoking drugs and the importance of having a THN kit to keep friends and community members safe regardless of the mode of drug use.

Demand for THN kits has risen in the past months as the number of overdoses has increased due to COVID-19. With reduced attendance at supervised consumption sites and overdose prevention sites, people with lived experience are acting as first responders, using THN kits to assist members of their community.²¹ October 2020 saw the highest number of THN orders with more than 33 800 THN kits shipped to community sites, pharmacies, correction centres, clinics, and nontraditional

sites across BC.^{1,24} In line with increasing access to naloxone, continuing education on overdose response and naloxone administration, supporting site coordinators to report, and collecting data will allow for a sustainable program and future research.

BC's actions with THN are leading the way for many other provinces. Training, harm reduction, and naloxone administration materials are used across Canada from Alberta to New Brunswick.²⁵ Understanding the history and barriers to THN program initiation and expansion will help organizations planning to start or expand similar programs. Physicians and medical providers play a huge role in reducing the stigma around drug use. Offering THN kits is an easy way to create safe spaces for clients to discuss drug consumption practices. Medical students, physicians, and other providers should be encouraged to provide training, carry a THN kit, and act as champions to reduce drug-related deaths in their communities.

All individuals who fit the eligibility criteria and are seeking training and a personal THN kit can go to www.towardtheheart.com/site-finder to locate their nearest community site or pharmacy for access. Physicians can also share a list of THN distribution sites with their patients. THN kits are provided at no cost to individuals at risk of experiencing or witnessing overdose, such as family or friends of PWUD.²⁶ BC physicians can purchase naloxone and supplies required for use in their clinics at their local pharmacy.²⁶

Physicians interested in further advocacy and support of this program can contact their regional harm reduction coordinator and/or the BCCDC naloxone program. ■

Acknowledgments

The authors would like to thank Sierra Williams, Dylan Collins, Sympascho Young, and Amina Moustaqim-Barrette for their insights on the history of the THN program for this article.

References

1. Moustaqim-Barrette A, Papamihali K, Mamdani Z, et al. Accessing take-home naloxone in British Columbia and the role of community pharmacies: Results from the analysis of administrative data. *PLoS One* 2020;15:e0238618.
2. McDonald R, Strang J. Are take-home naloxone programmes effective? Systematic review utilizing

- application of the Bradford Hill criteria. *Addiction* 2016; 111:1177-1187.
- Buxton JA, Pursell R, Gibson E, Tzemiz D. Increasing access to naloxone in BC to reduce opioid overdose deaths. *BCM J* 2012;54:231-232.
 - Banjo O, Tzemiz D, Al-Qutub D, et al. A quantitative and qualitative evaluation of the British Columbia Take Home Naloxone program. *CMAJ Open* 2014;2: E153-E161.
 - The take home naloxone program saves lives. *Hospital News*. 2014. Accessed 22 February 2021. <https://hospitalnews.com/take-home-naloxone-program-saves-lives>.
 - BCCDC. BC Take Home Naloxone Program In: THN sites, 2020, editor. Vancouver, BC, Canada: British Columbia Centre for Disease Control; 2020.
 - Buxton J, Tsang E, Amlani A, Ferris C. BC take home naloxone program. *This Changed My Practice (UBC CPD)*. 2015. Accessed 22 February 2021. <https://thischangedmypractice.com/bc-take-home-naloxone-program>.
 - Jafari S, Buxton JA, Joe R. Rising fentanyl-related overdose deaths in British Columbia. *Can J Addiction* 2015; 6:4-6.
 - National Association of Pharmacy Regulatory Authorities. National drug schedules: Final recommendation on naloxone hydrochloride. 2016. Accessed 4 March 2021. <https://napra.ca/national-drug-schedules>.
 - BCCDC Harm Reduction Services. Timeline of community naloxone in British Columbia, background. 2019. Accessed 22 February 2021. <https://towardtheheart.com/resource/thn-program-timeline/open>.
 - Irvine MA, Buxton JA, Otterstatter M, et al. Distribution of take-home opioid antagonist kits during a synthetic opioid epidemic in British Columbia, Canada: A modelling study. *Lancet Public Health* 2018;3(5):e218-e225.
 - Irvine MA, Kuo M, Buxton JA, et al. Modelling the combined impact of interventions in averting deaths during a synthetic-opioid overdose epidemic. *Addiction* 2019;114:1602-1613.
 - Williams S, Lewis-King T, Buxton JA. Evaluation report: Evaluation of British Columbia's Facility Overdose Response Box (FORB) program. Vancouver, BC. BC Centre for Disease Control. 2019. Accessed 21 February 2021. <https://towardtheheart.com/resource/forb-program-evaluation-report/open>.
 - BC Gov News. Ministerial order supports urgent overdose response action. 2016. Accessed 21 February 2021. <https://news.gov.bc.ca/releases/2016HLTH0094-002737>.
 - Young S, Williams S, Otterstatter M, et al. Lessons learned from ramping up a Canadian Take Home Naloxone programme during a public health emergency: A mixed-methods study. *BMJ open* 2019;9:e030046.
 - Ambrose G, Ishiguro S, Amlani A, Buxton JA. Overdose recognition and response: The BC Take Home Naloxone program evaluation. Review of data from Sept 2012–Mar 2015. Accessed 21 February 2021. www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/Epid/Other/Naloxone%20Program%20Research%20Summary%20FINAL.pdf.
 - Klassen D, Buxton J. Overdose recognition and response in the BC Take Home Naloxone program. Review of data up to July 2016. Accessed 15 March 2021. <https://towardtheheart.com/resource/evaluation-july-2016/open>.
 - Mitchell K, Durante SE, Pellatt K, et al. Naloxone and the Inner City Youth Experience (NICYE): A community-based participatory research study examining young people's perceptions of the BC take home naloxone program. *Harm Reduct J* 2017. doi: 10.1186/s12954-017-0160-3.
 - Mamdani Z, Buxton JA. Evaluation of British Columbia's take home naloxone program in community pharmacies. Vancouver: BC Centre for Disease Control. (2019). Accessed 15 March 2021. <https://towardtheheart.com/assets/uploads/1571953664uujs4Wj82uoRg5EBNAHxsi87cDYPgkMRp2TyV9t.pdf>.
 - Moustaqim-Barrette A, Papamihali K, Buxton JA. Take home naloxone program report; review of data to December 2018 Vancouver, BC. BC Centre for Disease Control. 2019. Accessed 15 March 2021. <https://towardtheheart.com/resource/thn-evaluation-report-2019/open>.
 - BCCDC. Harm reduction studies. Accessed 21 February 2021. www.bccdc.ca/our-research/projects/harm-reduction-studies.
 - Moustaqim-Barrette A, Papamihali K, Crabtree A, et al. Correlates of take-home naloxone kit possession among people who use drugs in British Columbia: A cross-sectional analysis. *Drug Alcohol Dependence* 2019;205:107609.
 - BCCDC. Overdose response reports. Accessed 21 February 2021. www.bccdc.ca/health-professionals/data-reports/overdose-response-reports.
 - Pearce LA, Mathany L, Rothon D, et al. An evaluation of Take Home Naloxone program implementation in British Columbian corrections facilities. *Int J Prison Health*. 2019;15:46-57.
 - Moustaqim-Barrette A, Elton-Marshall T, Leece P, et al. Environmental scan: Naloxone access and distribution in Canada. Canadian Research Initiative in Substance Misuse (June 2019) and Timeline of naloxone distribution in Canada. Vancouver, BC, Canada: British Columbia Centre for Disease Control 2019. Accessed 15 March 2021. https://crism.ca/wp-content/uploads/2019/06/CRISM_Enviro-Scan_Final-Draft_June18.pdf.
 - Buxton J, Gilbert M, Kuo M, et al. Patient and physician resources for naloxone use in BC. *BCM J* 2018;60:84-85.

Available for streaming on
all podcast platforms



BURNOUT AND COVID-19

Warning signs and when to act

with guests
Dr Jennifer Russel
and Dr Lawrence Yang

DocTalks
A Doctors of BC Podcast