Burnet Institute
Medical Research. Practical Action.

Opioid overdose – what next?

Paul Dietze
Behaviours and Health Risks Program, Burnet Institute
National Drug Research Institute, Curtin University

Disclosures

- Investigator-driven funding from Gilead Sciences Inc for work related to hepatitis C treatment and an untied educational grant from Indivior for work related to buprenorphine/naloxone

- Unpaid member of an Advisory Board for a Mundipharma intranasal naloxone product

Background

Opioid overdose is a **major public health issue**

Opioid overdose deaths are **preventable**

Interventions are available

We've spent all of this money on the problem of hepatitis C, why haven't we solved it?

New treatments for hepatitis C

Sofosbuvir and ledipasvir fixed-dose combination with and without ribavirin in treatment-naive and previously treated patients with genotype 1 hepatitis C virus infection (LONESTAR): an open-label, randomised, phase 2 trial

Eric Lawitz, Fred F Poordad, Phillip S Pang, Robert H Hyland, Xiao Ding, Fernando E Membreno

Summary

Background Interferon-based treatment is not suitable
because of contraindications such as psychiatric illness,
and safety of an interferon-free regimen—a fixed-dose co
(400 mg) and the HCV NS5A inhibitor ledipasvir (90 m
hepatitis C infection who were treatment-naive or previo

中国日报网 Wed, Dec 4, 2013

中文 | US | EUROPE | ASIA

CHINADAILY.com.cn

开通网上订阅 Subscript

Home | China | World | Business | Sports | Life | Entertainment | Photo | Video | Opinion

theguardian

News | Sport | Comment | Culture | Business | Money | Life & style

News › Science › Medical research

Hopes of hepatitis C cure raised after antiviral drug treatment success

Sofosbuvir and ledipasvir stop virus replicating in 97% of patients in study reported in the Lancet journal

Alok Jha
theguardian.com, Tuesday 5 November 2013 18.44 GMT

spaper China Daily | US Edition | European Weekly | Asia Edition | HK Edition | 21st Century

unday Edition / Science and Technology

atitis C meets its match

2013-11-17 07:13

w Pollack (The New York Times)

Mail | Large Medium Small | Share 0

ined to get rid of the hepatitis C infection that was slowly destroying his liver, Arthur
tried one experimental treatment after another. None worked, and most brought side
like fever, insomnia, depression, anemia and a rash that "felt like your skin was on fire."

New treatments for hepatitis C - What's the potential?

- Effective
- Tolerable
- Short duration
- Simple to take

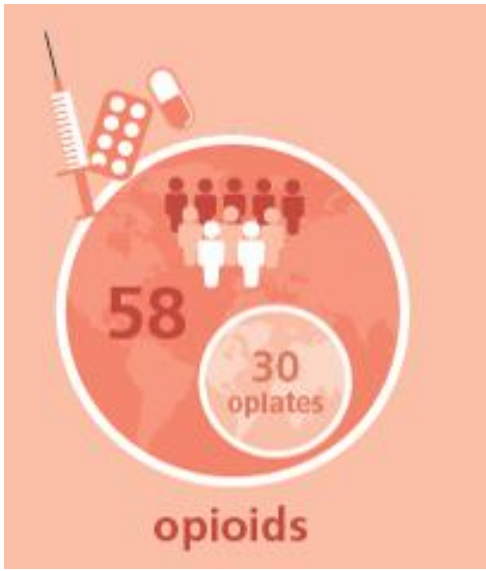
We can contemplate eliminating hepatitis C

The Global situation

1.2% of population 15-64 yrs, **58 million people using opioids** (UNODC,2020)

0.5 million deaths attributable to drug use annually (WHO)

115 000 people died of opioid overdose in 2017 (WHO)



UNODC,WDR, 2020

UNODC
United Nations Office on Drugs and Crime

The US situation

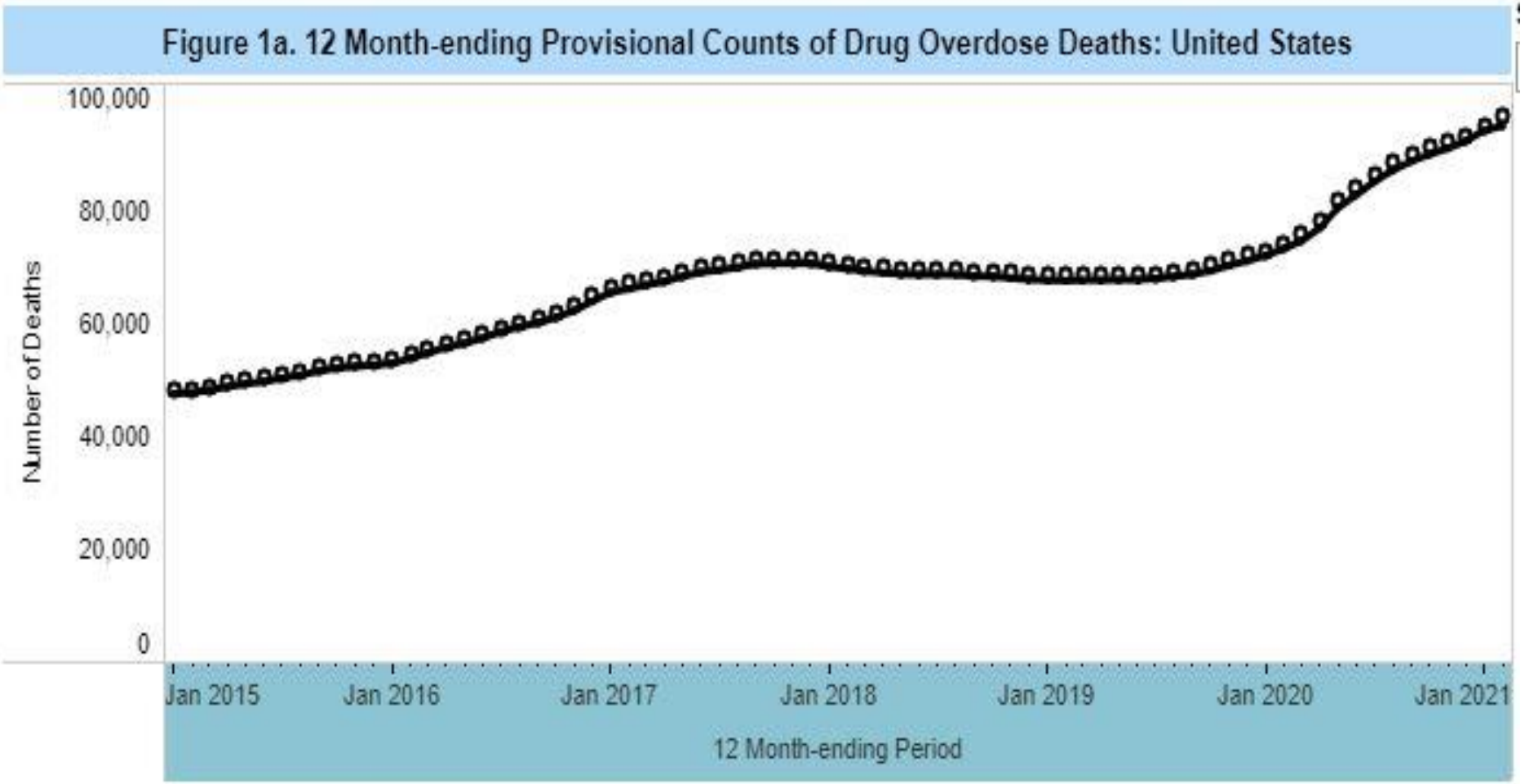
"The opioid crisis is an emergency, and I'm saying officially right now it is an emergency. It's a national emergency. We're going to spend a lot of time, a lot of effort and a lot of money on the opioid crisis."

Trump: Random golf club chat, 2017

"We must get much tougher on drug dealers and pushers if we are going to succeed in stopping this scourge," Trump said. "My administration is committed to fighting the drug epidemic and helping get treatment for those in need, for those who have been so terribly hurt. The struggle will be long, and it will be difficult. But as Americans always do, in the end, we will succeed. We will prevail."

State of union, 2018

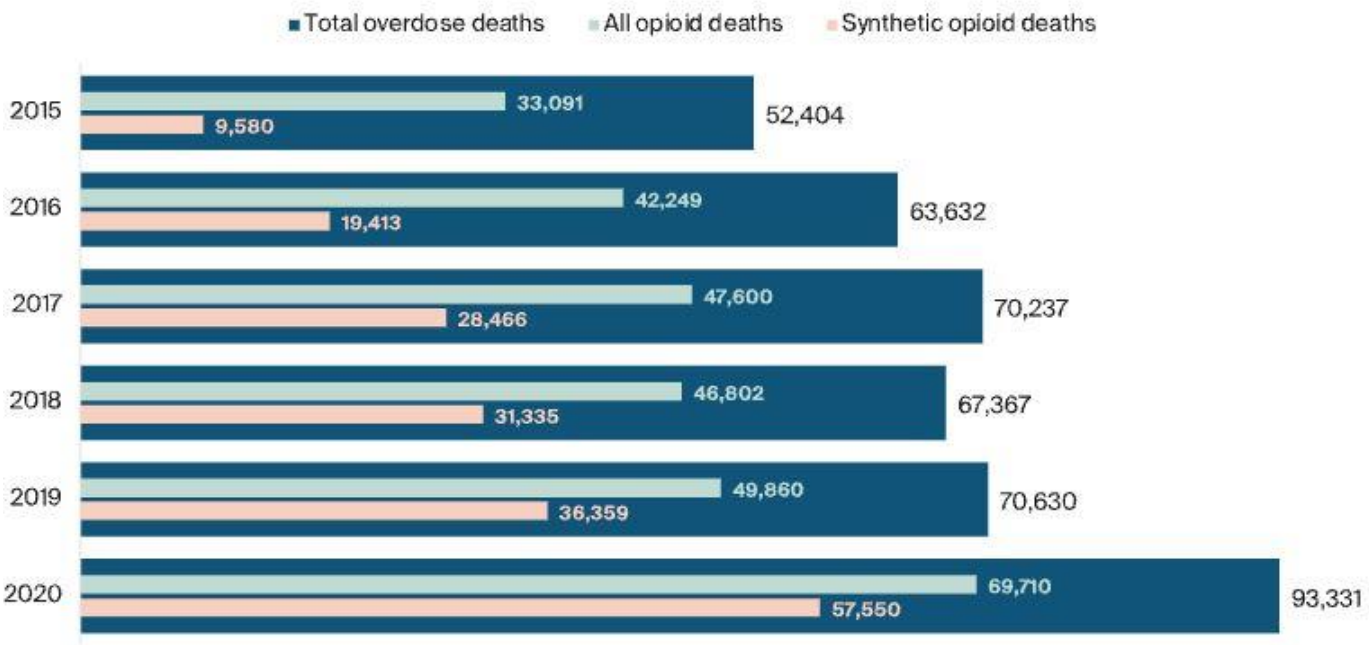
The US situation



The US situation

Overdose deaths exploded to more than 90,000 in 2020, and synthetic opioids were involved in more than 60 percent of all overdose deaths.

Annual drug overdose deaths



Note: Synthetic opioid deaths exclude those from methadone. Specific drug-class deaths are not mutually exclusive, as some deaths are attributable to multiple drug types.

Data: 2015–2019 – Final data from CDC WONDER; 2020 – National Vital Statistics System, Provisional Drug Overdose Death Counts, Dec. 2020 predicted totals (not final data, subject to change).

The US situation

BRIEFING ROOM

Biden-Harris Administration Calls for Historic Levels of Funding to Prevent and Treat Addiction and Overdose

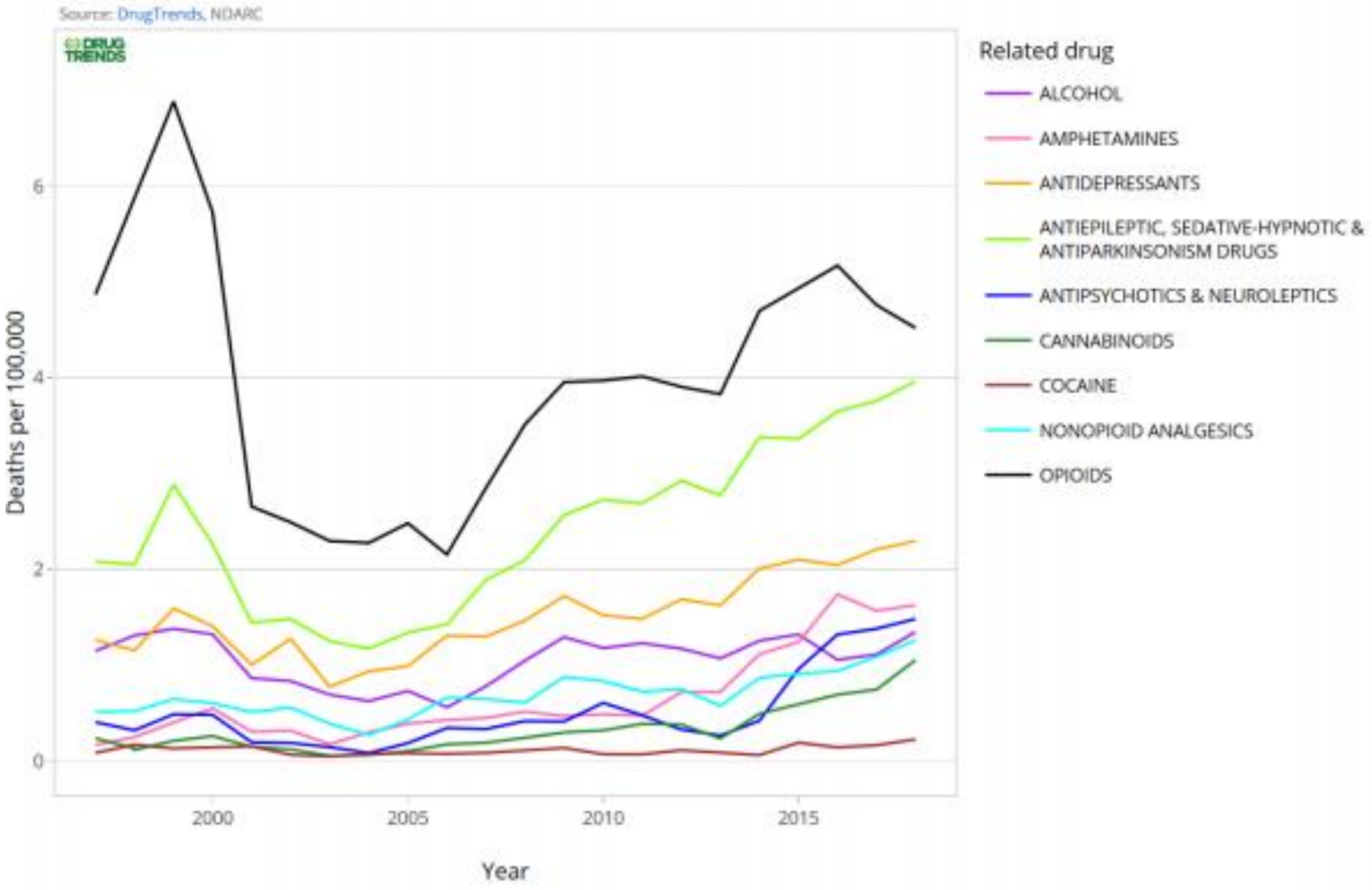
MAY 28, 2021 • PRESS RELEASES

Largest funding increases are for treatment and prevention services

The Budget supports the Biden-Harris Administration's Drug Policy Priorities for Year One:

- expanding access to evidence-based treatment;
- advancing racial equity issues in our approach to drug policy;
- enhancing evidence-based harm reduction efforts;
- supporting evidence-based prevention efforts to reduce youth substance use;
- reducing the supply of illicit substances;
- advancing recovery-ready workplaces and expanding the addiction workforce; and
- expanding access to recovery support services.

Crisis of drug induced deaths in Australia



Overdose prevention – available interventions

- ***Context: Universal healthcare, harm reduction for blood borne viral infections***
- **Drug & other treatment options (OAT)**
- **First responders (e.g. ambulance paramedics and fire brigade)**
  - **Direct response**
  - **Discretionary law enforcement**
- **Education – overdose recognition and response**
- **Take-home naloxone**
- **Supervised injecting facilities**
- **Primary care for key populations**

Overdose prevention – available interventions and uptake in SuperMIX

Intervention	%
Opioid agonist treatment	67%
Take-home naloxone	58%
Supervised injecting facilities	84% (Richmond) 32% Melbourne
Primary care for key populations	5.1% in past month

Coverage is incomplete even with universal healthcare

UNODC-WHO: preventing and reducing opioid overdose mortality (2013)

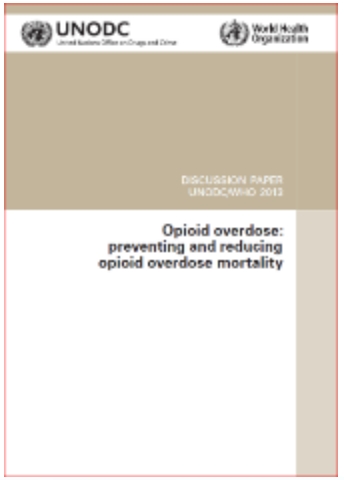
Effective measures

Reducing the availability of opioids and harmful opioid use

Providing access to effective treatment for people with opioid dependence

Availability of drug dependence treatment in prisons

Effective treatment of opioid overdose

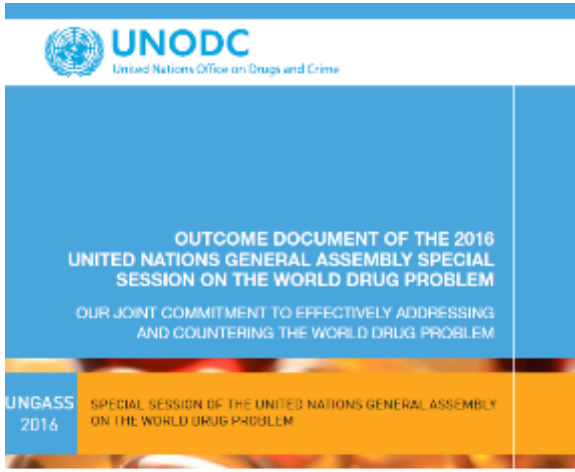


CND resolution 55/7 (2012)

Promoting measures to prevent drug overdose, in particular opioid overdose: *Encourages* all Member States to include effective elements for the, in national drug policies,…, and to share **prevention and treatment of drug overdose, in particular opioid overdose** best practices and information on the prevention and treatment of drug overdose, in particular opioid overdose, including the use of (…) naloxone (…) and *requests* the UNODC (…) to include initiatives to prevent mortality from drug overdose, in particular opioid overdose (…) as part of drug demand reduction programming;

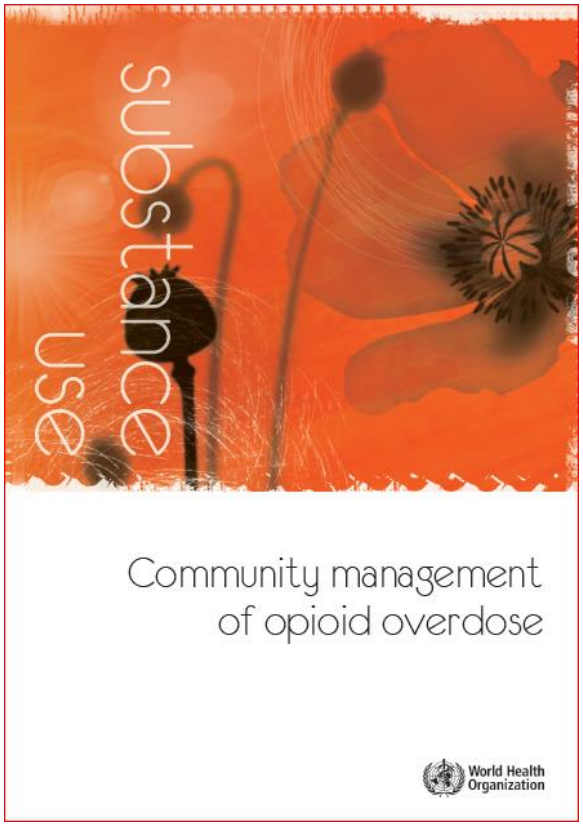
UNGASS April 2016

Promote the inclusion in national drug policies, in accordance with national legislation and as appropriate, of elements of the prevention and treatment of drug overdose, in particular opioid overdose, including the use of opioid receptor antagonists such as naloxone to reduce drug-related mortality (OP1m)



Thirtieth Special Session
General Assembly
New York, 19-21 April 2016

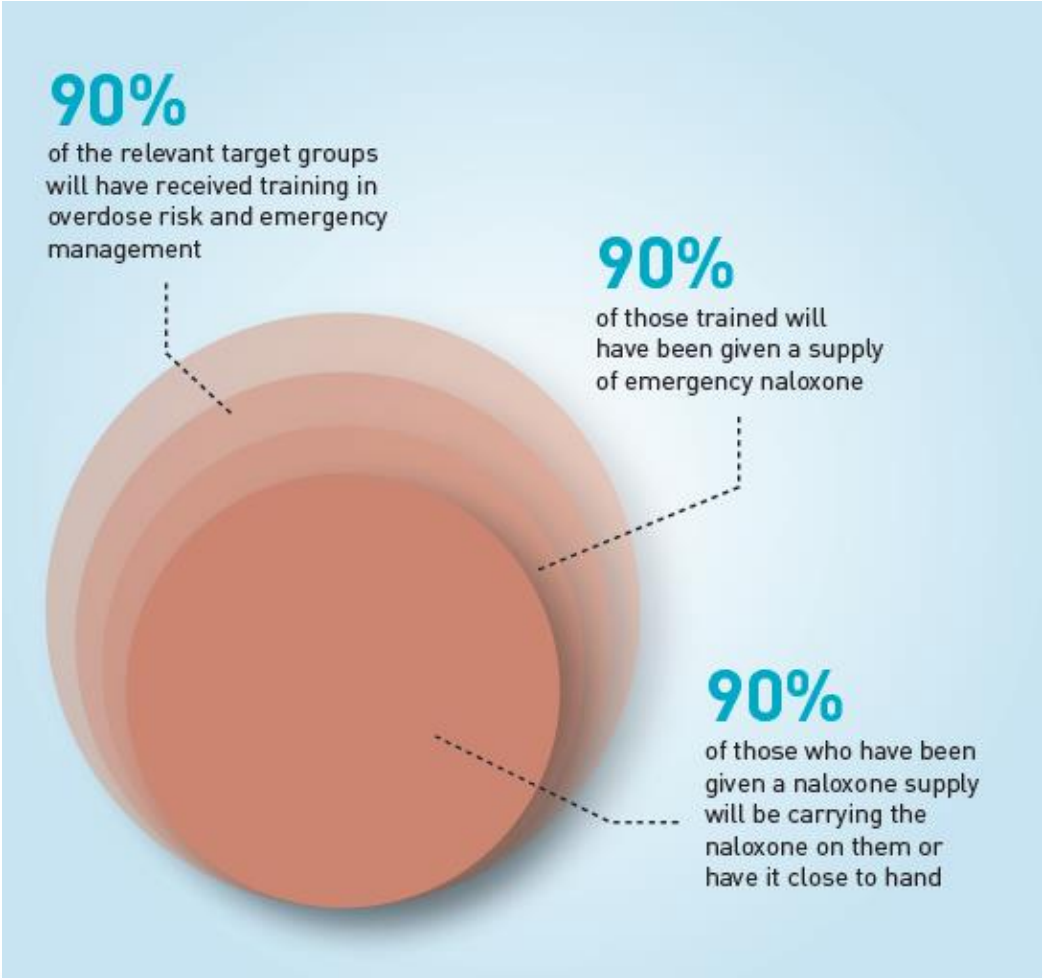
Background:
WHO Guidelines on Community Management of Opioid Overdose (2014)



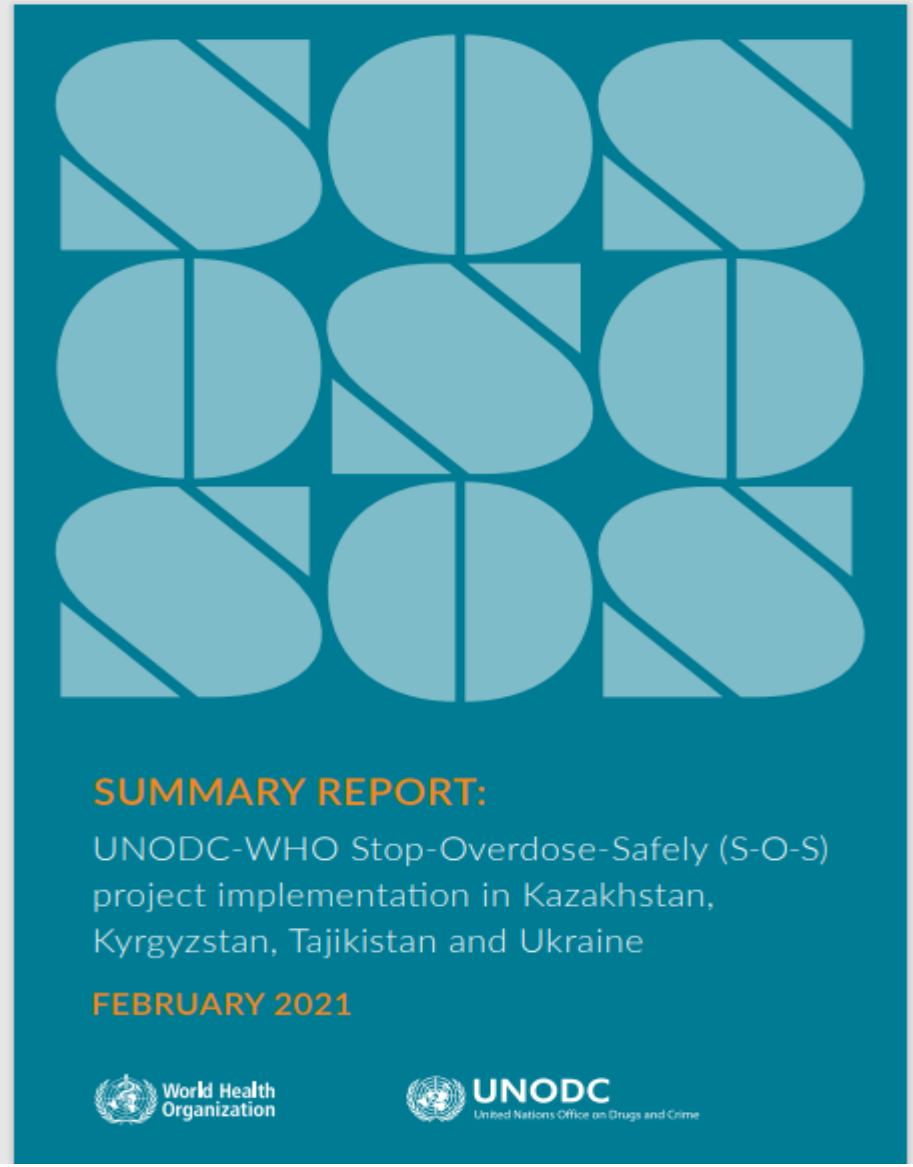
No.	Recommendation
1	People likely to witness an opioid overdose should have access to naloxone and be instructed in its administration to enable them to use it for the emergency management of suspected opioid overdose.
2	Naloxone is effective when delivered by intravenous, intramuscular, subcutaneous and intranasal routes of administration. Persons using naloxone should select a route of administration based on the formulation available, their skills in administration, the setting and local context.
3	In suspected opioid overdose, first responders should focus on airway management, assisting ventilation and administering naloxone.
4	After successful resuscitation following the administration of naloxone, the level of consciousness and breathing of the affected person should be closely observed until full recovery has been achieved.

Launch of SOS Initiative March 2017

Stop - Overdose - Safely



90% trained
90% supplied
90% carry



https://apps.who.int/iris/handle/10665/340497

Implementation

Table 1: Program implementation measures for the S-0-S project across project countries

Program dimensions	Overall	Kazakhstan	Kyrgyzstan	Tajikistan	Ukraine
N Level III Trainers trained	224	110	54	20	40
N Witnesses trained	14,263	3,055	4578	4,000	2,630
% female witnesses	24.9	20	27.5	23	33.3
% opioid consumers	70.2	79	89	73	86
% peers/family members	14.8	12	9	17	12
% health workers	9.8	9	2	10	2
N kits distributed	16,278	3,700	4,578	4,000	4,000
N Refill kits requested	1,328	776	422	537	115

Current state of THN in Australia

https://creidu.edu.au/naloxone

Taking stock of take-home naloxone

- Commonwealth PBS National Pilot (WA,NSW, SA)
- *Intranasal naloxone – finally!*
- No consistent legislation (e.g. Good Samaritan provision)
- No funded, substantial national coordination
- No distribution targets
- No standard/universal access through all health services (what about ambulance, ED, NSP, DTS?)
- Incomplete first responder access
- Very limited point-of-custodial-release distribution (except NSW)
- No consistent programs for pharmacists or primary care

Take-home naloxone in Australia

- First mooted in Melbourne, Australia in 1992
- Long history of waiting
- Feasibility study in 1999-2000 (linked to Berlin and Jersey programs)
  - Concluded national trial was needed
  - End of heroin glut, focus on developing intranasal option
- 2009 publications in MJA and DAR calling for increasing access to naloxone for peer administration in Australia
  - A controlled trial in Australia no longer necessary

  Called for:
  - Increased availability with careful monitoring
  - Good Samaritan legislation
  - Support by key stakeholders for rescheduling

Lenton et al, 2009 a & b ; Lenton & Hargreaves, 2000; Kerr et al., 2008; Kerr et al., 2009

Medically Supervised Injecting Centre

- First in the English-speaking world, opened in 2001
- Strategy aimed at street-based / public IDU
- Legally sanctioned indoor facility, supervision by trained staff, safe and sterile conditions, access to sterile injecting equipment
- Drug procured from by consumers from outside the facility
- Referral to appropriate services (treatment, material aid, advocacy, employment)
- Controversial at opening

Medically Supervised Injecting Centre (Kings Cross) 1

Photo: Dr Ingrid van Beek

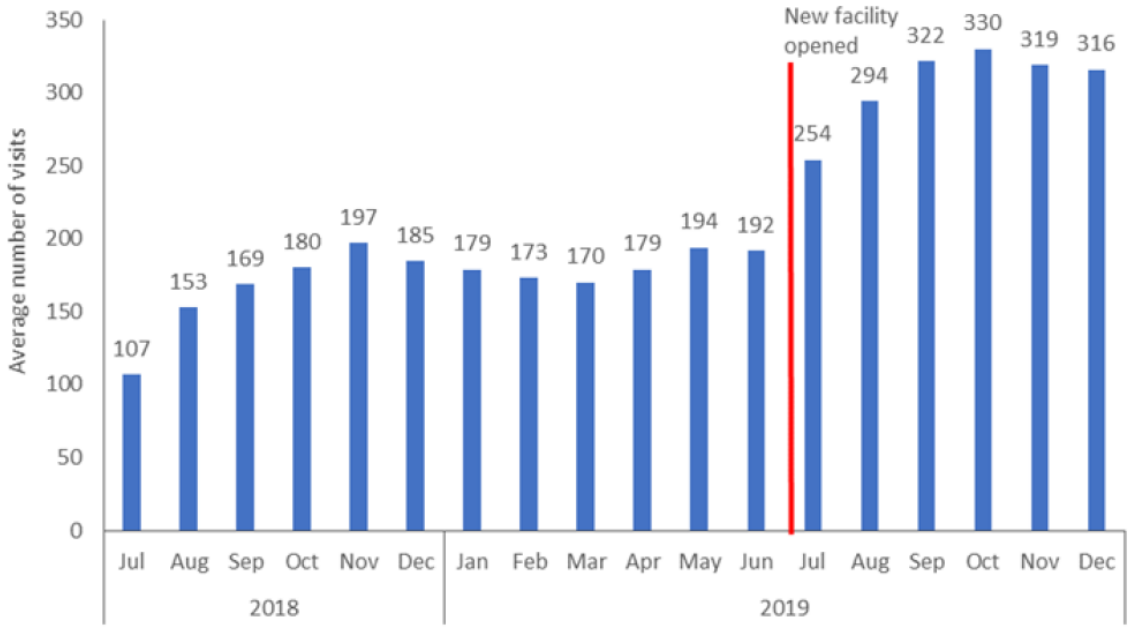
The Melbourne MSIR


Medical Clinic
Dental Clinic
Denture Clinic

The Melbourne Supervised Injecting Room

- Opened 30 June 2018 (16 months after coroner's recommendation)
- Initially housed in room in North Richmond Community Health Centre
- Purpose-built facility completed adjacent
- Review panel of esteemed Victorians established
  - Assess progress against key aims
  - Multiple approaches to examining progress

Utilisation



Utilisation

ARTICLE IN PRESS

American Journal of
Preventive Medicine

RESEARCH ARTICLE

The Melbourne Safe Injecting Room Attracted People Most in Need of Its Service

Wijnand Van Den Boom, PhD,[1] Maria del Mar Quiroga, PhD,[1,2] Dagnachew Muluye Fetene, PhD,[1] Paul A. Agius, MSc,[1,3] Peter G. Higgs, PhD,[1,4] Lisa Maher, PhD,[1,5] Matthew Hickman, PhD,[6] Mark A. Stoové, PhD,[1,3] Paul M. Dietze, PhD[1,7]

Characteristic	No use†, n=451		Infrequent use, n=142		Frequent use, n=65	
				RRR [95% CI]		RRR [95% CI]
Employment status						
Employed	72 (16.0%)		6 (4.2%)	1	3 (4.6%)	1
Unemployed	**379 (84.0%)**		**136 (95.8%)**	**4.31 [1.83-10.13]**	**62 (95.4%)**	**3.93 [1.20-12.85]**
Living in suburbs around the MSIR						
No	380 (88.2%)		92 (73.6%)	1	35 (58.3%)	1
Yes	**51 (11.8%)**		**33 (26.4%)**	**2.67 [1.63-4.37]**	**25 (41.7%)**	**5.32 [2.95-9.61]**
Housing status						
Stable	235 (52.3%)		65 (46.1%)	1	25 (39.7%)	1
Unstable	214 (38.3%)		45 (31.9%)	0.95 [0.62-1.45]	22 (34.9%)	1.20 [0.66-2.20]
Homeless	**42 (9.3%)**		**31 (22.0%)**	**2.67 [1.56-4.58]**	**16 (25.4%)**	**1.29 [1.76-7.27]**
Living conditions						
With others*	296 (67.0%)		77 (57.9%)	1	20 (32.3%)	1
Alone	**146 (33.0%)**		**56 (42.1%)**	**1.47 [0.99-2.19]**	**42 (67.7%)**	**4.26 [2.41-7.51]**
Aboriginal and Torres Strait Islander						
No	398 (88.4%)		99 (70.7%)	1	50 (76.9%)	1
Yes	**52 (11.6%)**		**41 (29.3%)**	**3.17 [1.99-5.04]**	**15 (23.1%)**	**2.30 [1.20-4.38]**
Public injecting						
No	208 (61.9%)		44 (37.6%)	1	42 (70.0%)	1
Yes	**128 (38.1%)**		**73 (62.4%)**	**2.70 [1.75-4.16]**	**18 (30.0%)**	**0.69 [0.38-1.26]**
Incarceration in 12 months prior to interview						
No	326 (73.6%)		87 (64.9%)	1	30 (47.6%)	1
Yes	**117 (26.4%)**		**47 (35.1%)**	**1.51 [0.99-2.27]**	**33 (52.4%)**	**3.06 [1.79-5.25]**

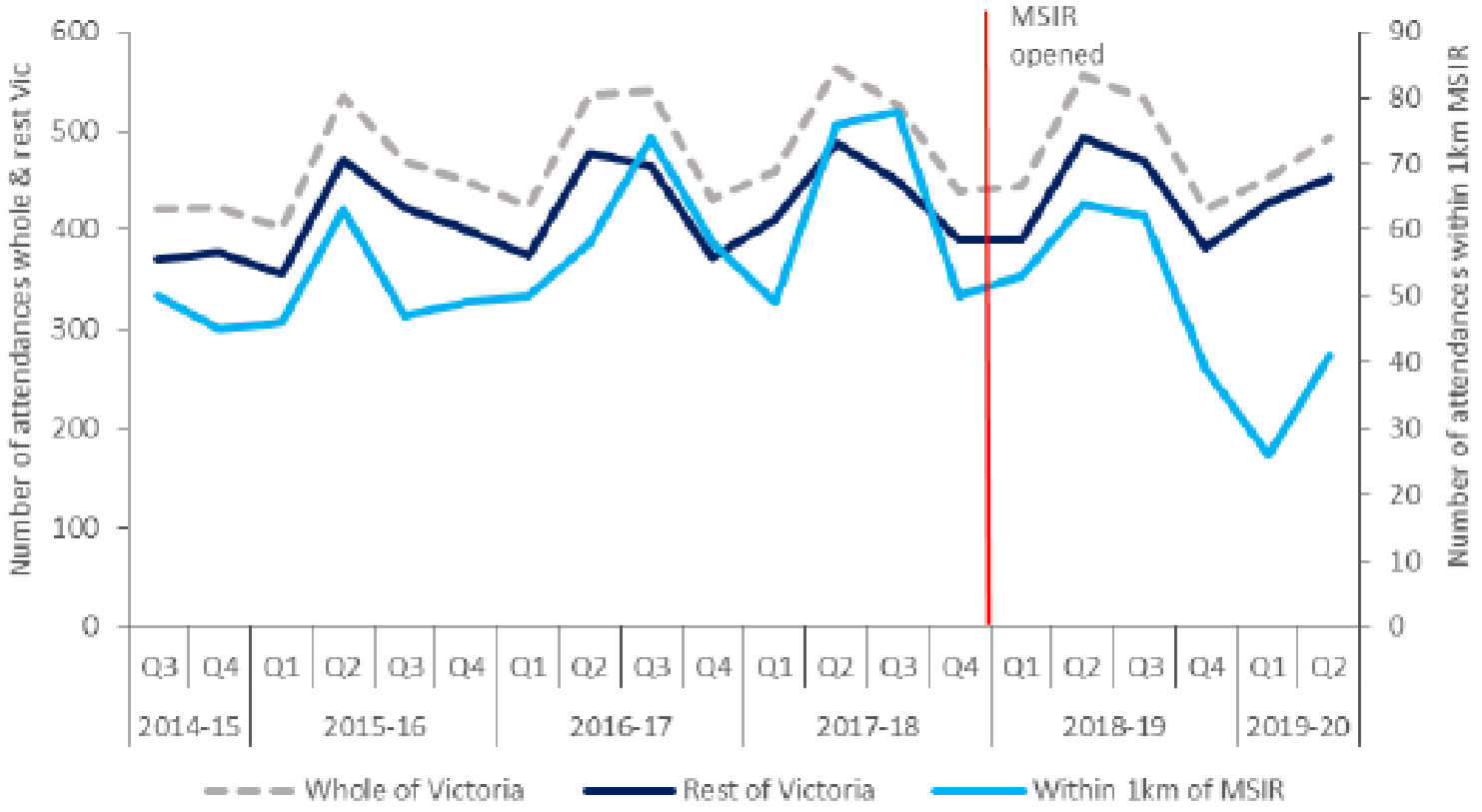
MSIR use in SuperMIX

Figure 25: Average number of ambulance attendances with naloxone administration per year by MSIR frequency of use

Source: Burnet Institute 2019, p. 38

The MSIR reduced overdoses attended by ambulance

Figure 23: Number of ambulance attendances where naloxone was administered by paramedics within 1 km of the MSIR and for the rest of Victoria, Quarter 3, 2014–15 to Quarter 2, 2019–20

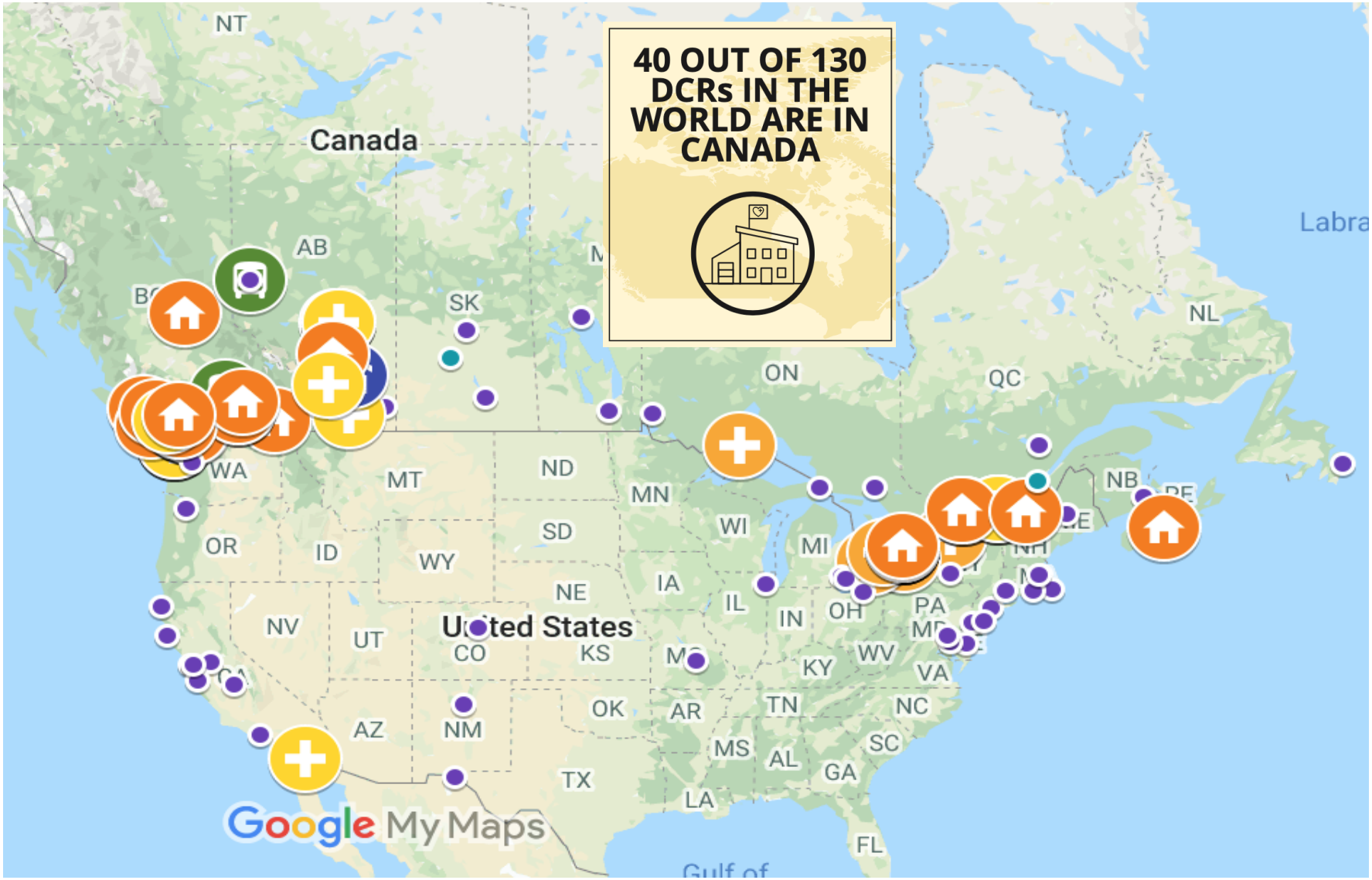


Source: Victorian Ambulance Clinical Information System

The International context – Western Europe

Source: www.drugconsumptionroom-international.org

The International context – North America



Source: www.drugconsumptionroom-international.org

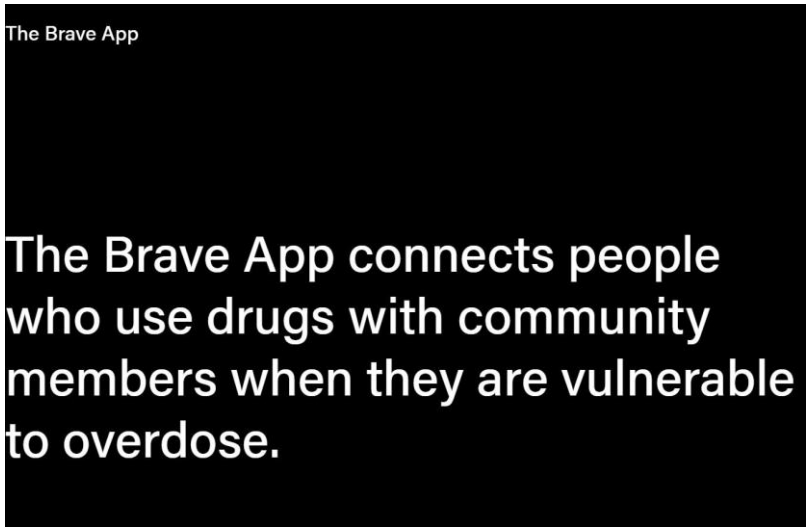
The Australian context

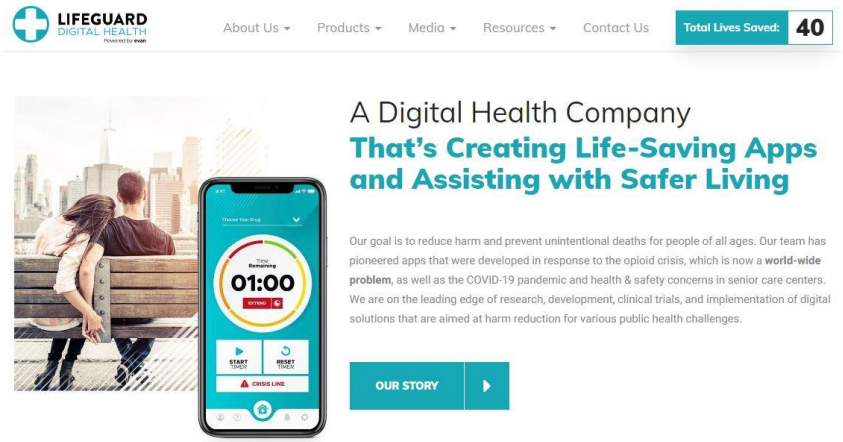
Source: www.drugconsumptionroom-international.org

Impacts: A second injecting facility

New knowledge/interventions

- Behavioural/personal

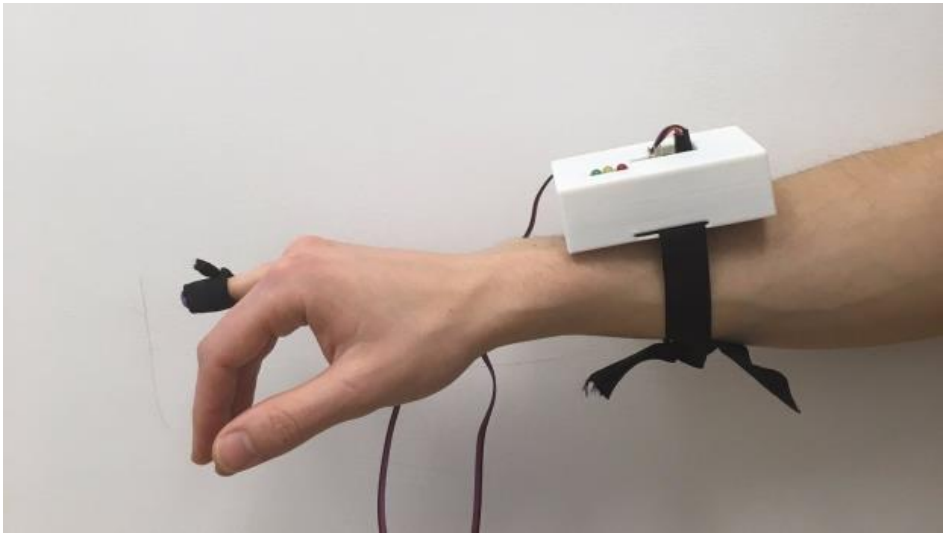




New knowledge/interventions

- Drug interactions
- Overdose = compromised respiration
  - Lowered oxygen saturation
- What is normal saturation variation?
- Wearable monitoring

New interventions



How do we solve the problem?

- Urgent scale up needed
  - *of all overdose prevention interventions*
- Deaths in the home among people who use alone?
- Deaths among people who don’t inject?
- Stigma/discrimination/decriminalisation
- Safe supply
- New interventions

Acknowledgments

- Amanda Roxburgh
- Burnet fieldwork team
- SuperMIX collaborators
- Mary-Ellen Harrod