Research on opioid overdose and naloxone distribution in San Francisco: from epidemiology to intervention development to implementation.

Alex H. Kral, PhD
Director
Behavioral and Urban Health Program
RTI International
San Francisco

Overdosekonferansen, Bergen, Norway
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### Overview

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<td>Feasibility studies to assess viability of naloxone intervention</td>
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<td>Pilot naloxone intervention study</td>
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<td>2003-2014</td>
<td>Evaluation of naloxone intervention</td>
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<td>2015 -</td>
<td>Implementation science approach to assessing how to best implement naloxone interventions</td>
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Population Sizes 2015

San Francisco: 849,774
Oakland: 390,724
Richmond: 103,701
Observational Studies

• Scope of opioid overdose problem in San Francisco
  – Nonfatal Overdoses
  – Fatal Overdoses
Prevalence and Factors Associated with Nonfatal Opioid Overdose among People who Inject Heroin

- 1,427 people who inject heroin recruited in 1998/1999 using targeted sampling in SF.
- 48% had ever had an overdose, 33% had experienced >1 overdose, and 13% had recent overdose.
- In multiple logistic regression, recent OD was associated with being:
  - Younger, arrested >2 times past year, Drinking >3 alcoholic drinks per day, participated in methadone detoxification during the past year, and being homeless.

Opioid Overdose Mortality, SF 1997-2000

Feasibility of Peer Naloxone Intervention

- Chicago Recover Alliance started providing naloxone and overdose training in 1999 at their syringe exchange sites.
- Shortly thereafter, San Francisco Needle Exchange started an underground naloxone intervention with their participants.
- Both of these early interventions involved substantial education components that involved CPR training and many hours of attendance.
- We decided to assess whether people who inject drugs (PWID) would be interested in such trainings.

Feasibility of Peer Naloxone Intervention 1999-2000

- Survey of 82 street-recruited PWID in San Francisco
- 89% had ever witnessed an overdose
- 90% of them used lay interventions
- 51% had called “911” for ambulance
- 87% were strongly in favor of being trained and receiving naloxone.

Opiate Overdose Pilot Intervention 2001

- Pilot study of an overdose prevention and naloxone distribution intervention, 2001 (N = 24)
- Offered study participation to twelve couples who had participated in our larger study.
- Trained them in overdose prevention, naloxone use, and CPR over two sessions totaling 8 hours.
- Provided naloxone.
- Interviewed them at 6 months follow-up.

Pilot study of an overdose prevention and naloxone distribution intervention, 2001 (N = 24)

Six Months Post-Intervention
– Participants witnessed 20 heroin overdoses.
– CPR and/or rescue breathing performed in 16 events (80%).
– Naloxone administered in 15 events (75%).
– Naloxone or CPR administered in 19 events (95%).
– All 20 overdose victims survived.

The DOPE Project in San Francisco

From September 2003 to September 2010:

- 2,318 individuals were trained and prescribed naloxone through the DOPE Project
- 1,312 refilled naloxone prescriptions
- 502 reports of using naloxone during an opiate overdose event.
- 174 Group trainings (Methadone programs, jail, SROs), 1,770 participants
- 113 Service Provider trainings, 1,677 participants

There is an updated study by Phillip Coffin et al recently published (Rowe et al *Addiction* August 2015), which I think he will speak about at this conference.

Heroin-related Deaths, San Francisco, 1999-2012

Slide provided by Phillip Coffin

*Heroin death data (left axis) compiled from San Francisco Medical Examiner Reports, www.sfgsa.org, fitted to tailing fiscal year, no data for 2001-2002, 2012 deaths preliminary estimate; Naloxone data (right axis) from DOPE Project enrollments and refills.
In 2010 there were 16,651 deaths in the United States due to opioid overdose, a 3-fold increase in last decade.

One of the main risk factors for opioid overdose is community reentry following incarceration, mainly because of the diminished opioid tolerance that occurs during periods of non-use while incarcerated.

Binswanger et al.’s study of post-release mortality in Washington state, showed that the risk of overdose death among former inmates during the 2 weeks immediately following release from incarceration was 129 times that of other state residents.
Aims of New Implementation Science Project funded by NIDA

• **Aim 1.** To identify barriers and facilitators to and develop solutions for the implementation of overdose education and naloxone distribution (OEND) programs in venues that target people exiting incarceration and their family members (e.g., jails, correctional visiting centers, community supervision offices, reentry organizations).

• **Aim 2.** To pilot the implementation of OEND in two promising venues identified in Aim 1 with the goal of assessing feasibility and acceptability of the implementation process among venue stakeholders.

• **Aim 3.** To develop a manual addressing the key factors and lessons learned about the implementation of OEND in venues that target people exiting incarceration and their family members for use in a subsequent implementation trial.
## Implementation Science Project

<table>
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<tr>
<th>County</th>
<th>Opioid Overdose Deaths per Year</th>
<th>Number of Jail Facilities</th>
<th>Total Jail Capacity</th>
<th>CA State Prison Yes/No</th>
<th>Type of Community</th>
<th>Number of Re-entry Focused Programs</th>
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<tbody>
<tr>
<td>Alameda</td>
<td>215</td>
<td>2</td>
<td>4,800</td>
<td>No</td>
<td>Urban/ Suburban</td>
<td>8</td>
</tr>
<tr>
<td>Marin</td>
<td>33</td>
<td>1</td>
<td>293</td>
<td>Yes</td>
<td>Suburban</td>
<td>None</td>
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<tr>
<td>Santa Clara</td>
<td>140</td>
<td>4</td>
<td>4,692</td>
<td>No</td>
<td>Urban/ Suburban</td>
<td>1</td>
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<tr>
<td>Sonoma</td>
<td>78</td>
<td>2</td>
<td>1,177</td>
<td>No</td>
<td>Suburban/ Rural</td>
<td>None</td>
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Contact Information

Alex H. Kral, PhD
351 California Street Suite 500
San Francisco, CA 94104
USA

Mobile phone  +1 415 407 0752
Email  akral@rti.org