Opioid Epidemic

What role does the ED have?
A Panel Discussion

Department of Emergency Medicine
Provincial Grand Rounds

December 13th, 2017
Panelist Disclosures

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- Other - no
Disclosure of Commercial Support

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• Potential for conflict(s) of interest:
  • None known
The Panelists

1. Misty Bath
2. Miranda Compton
3. Reka Gustafson
4. Andrew Kestler
5. Roy Purssell
Acute management
Objectives

By the end of this session you will be able to discuss:

1. The dosing of naloxone in an opioid overdose.
2. The observation duration for an opioid overdose.
3. Harm reduction strategies for the ED.
4. How the ED can positively impact the opioid epidemic/opioid dependent person beyond the ED.
Opioid Overdose

Acute Emergency Department Management

Roy Purssell, MD FRCPC ABEM

Professor,
Department of Emergency Medicine
Emergency Physician, VCH
Medical Lead, BC Drug and Poison Information Centre
Illicit drug overdose deaths (IDD) and death rate/100,000 population

Provisional - will change as cases closed; BCCS Sep 7, 2017
Data to July 31, 2017

In 2017 - 58% deaths occurred in private residence
Opioid Overdose

- Triad: Coma, hypoventilation, miosis
- Treatment: Naloxone, ventilation
- Naloxone: Effective antidote, commonly causes precipitated opioid withdrawal
Precipitated Opioid Withdrawal

- 73% of cases, severe 9% of cases
- Vomiting, agitation, and aggression common
- Less common:
  - pulmonary edema, hypertensive emergency, ventricular dysrhythmias, delirium, seizures
- Patients often leave against medical advice
- Patients may re-use opioids to treat withdrawal

Kim Expert Opin Drug Saf 2015
Assisted Ventilation

• May be difficult especially if fentanyl induced chest rigidity
• Use to normalize \( pCO_2 \) prior to naloxone administration:
  • elevated \( pCO_2 \) potentiates catecholamine response of precipitated opioid withdrawal
• Monitor \( O_2 \) saturation:
  • some recommend end-tidal \( CO_2 \) monitoring

Heroin Overdose

- Death does not usually occur for at least 20 to 30 min after use.
- Dose of naloxone: Average 0.9 mg.
- Dose Range: Relatively small.
Overdose of fentanyl and other ultrapotent opioids

• Life threatening respiratory depression can occur within 2 min.

• Dose of Naloxone:
  • 0.4 mg (36%)
  • 0.8 mg (51%)
  • 1.2 mg (9%)
  • 1.6 mg (4%)
  • > 1.6 mg (1%)

• Dose Range: Very large: up to 12 mg.

Fentanyl chest wall rigidity syndrome

- One case/day treated at *Insite Safe Injection Site*
- Could be a factor in rapid death from fentanyl use
- Treatment: Naloxone and ventilation
- Neuromuscular paralysis and ventilation is risky and rarely required

*Burns Clin Tox 2016, Khan Chest 2015, Coruh Chest 2013*
Naloxone Dose in Adults

**Initial:** 0.1 mg IV/IO or 0.4 mg IM if no IV/IO

**Insufficient response:**
- 0.4 mg, 0.4 mg, 2.0 mg, 4.0 mg, and then 10 mg if high clinical suspicion
- q2 minutes (q3 min. if IM)
- No response by 10 mg = consider alternate cause

**Goals:** RR ≥ 10/min, GCS > 10, protecting airway, no acute withdrawal symptoms.

BC EM Network: Opioid Overdose Management: Godwin, Kestler, DeWitt, Purssell
Observation

Lower risk:

1. Did not require > 0.9 mg naloxone for reversal, AND
2. Opioids smoked, insufflated or injected, AND
3. Did not require repeat doses or infusion of naloxone following initial reversal

Observe minimum 2 hours following naloxone
Observation

Higher risk:

1. Oral overdose, OR
2. Greater than 0.9 mg naloxone required

Observe minimum 6 hours following naloxone
Observation

Catastrophic delayed onset of symptoms can occur with sustained release opioids and methadone
Controversy:
Resuscitation sequence for apneic unresponsive patient

• First: Call for help, call 9-1-1 – Most Guidelines
• Then:

  Chest compressions?
  (ILCOR Guideline for Lay Rescuers and Ontario Guideline)
  or
  Ventilation?
  (WHO and BC Guideline)

(Answer: likely situation dependent)
Opioid Epidemic

ED-Based Harm Reduction

Andrew Kestler MD, MBA, MSCPH, DTMH, FACEP, FRCPC

Clinical Associate Professor
Department of Emergency Medicine
UBC and PHC/VCH
• HARM
  • People are dying…fast…and not just ODs
• REDUCTION: EDs can help
  • Take-home naloxone (THN), Suboxone, linkage to care
Of all patients who were treated with Naloxone:

10% of patients treated with Naloxone died within one year.

Of those, HALF died within one month.

12,000+ EMS OD patients in Massachusetts 2013-5

ACEP infographic, Weiner et al, 2017
Non-fatal overdose as a risk factor for subsequent fatal overdose among people who inject drugs

Alexander Caudarella\(^a\), Huiru Dong\(^a\), M.J. Milloy\(^a,b\), Thomas Kerr\(^a,b\), Evan Wood\(^a,b,*\), Kanna Hayashi\(^a,b\)

\(^a\) British Columbia Centre for Excellence in HIV/AIDS, St. Paul’s Hospital, Vancouver, Canada
\(^b\) Department of Medicine, University of British Columbia, Vancouver, Canada

Table 2
Bivariate and multivariate Extended Cox regression analyses of the time to fatal overdose among cohorts of persons who inject drugs in Vancouver, Canada (n=2317).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unadjusted hazard ratio (HR)</th>
<th>p-Value</th>
<th>Adjusted(^p) hazard ratio (AHR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RH (95% CI)</td>
<td></td>
<td>ARH (95% CI)</td>
</tr>
<tr>
<td>Non-fatal overdose(^a)</td>
<td>1.85 (1.11-3.07)</td>
<td>0.018</td>
<td>1.95 (1.17-3.27)</td>
</tr>
</tbody>
</table>

6.3% BC cohort died during median 5 year follow-up

Any OD: died 2x sooner; More ODs: dose response
ED visits in 1 yr prior to OD death

0 ED visits 30%
1 ED visit 20%
2+ ED visits 50%

400+ death Jan 2016-May 2017, Vancouver Coastal Health Residents
417 at-risk opioid users at St. Paul’s ED
May-Aug 2015
THN saves lives

In BC:
• >57,000 kits distributed since 2012
• 58 EDs distributing
• Nearly 12,000 OD reversals

In US:
• Communities with THN distribution had lower opioid OD death rates than communities without programs, 2002-2009

Walley et al, BMJ 2013
2/3 ED patients accept THN

Factors Associated With Participation in an Emergency Department–Based Take-Home Naloxone Program for At-Risk Opioid Users

Andrew Kestler, MD, MBA*; Jane Buxton, MBBS, MHSc; Gray Meckling, BSc; Amanda Giesler, BSc; Michelle Lee, BSc, MPH; Kirsten Fuller, BSc, BScN; Hong Quan, MSc; Dalja Marks, PhD; Frank Scheuermeyer, MD, MHSc
Suboxone & Methadone save lives

• Reduce OD & all-cause mortality
  – Sordo 2017 in BMJ

• Suboxone 1st line in BC

[Diagram showing All cause mortality rate/1000 person years (95% CI)]

- Methadone
- Buprenorphine/naloxone
Association between trajectories of buprenorphine treatment and emergency department and in-patient utilization

Wei-Hsuan Lo-Ciganic¹,², Walid F. Gellad²,³,⁴, Adam J. Gordon²,³,⁴, Gerald Cochran²,⁵, Michael A. Zemaitis²,⁶, Terri Cathers⁷, David Kelley⁷ & Julie M. Donohue²,⁸

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>All-cause hospitalizations</th>
<th>Emergency department visits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HR (95% CI)</td>
<td>HR (95% CI)</td>
</tr>
<tr>
<td>Refilled persistently</td>
<td>0.82 (0.70–0.95)**</td>
<td>0.86 (0.78–0.95)**</td>
</tr>
</tbody>
</table>
Emergency Department–Initiated Buprenorphine/Naloxone Treatment for Opioid Dependence
A Randomized Clinical Trial

Gail D’Onofrio, MD, MS; Patrick G. O’Connor, MD, MPH; Michael V. Pantalon, PhD; Marek C. Chawarski, PhD; Susan H. Busch, PhD; Patricia H. Owens, MS; Steven L. Bernstein, MD; David A. Fiellin, MD

Outcome: 30-day retention in addiction treatment
ED Suboxone not for everyone

- Referrals to addictions team in ED for Suboxone
  - Some patients not in sufficient withdrawal
  - Some uncomfortable with hospital environment
  - Some leave before consult
- Outpatient referral from St. Paul’s ED
  - 77% no-show rate to rapid access addictions clinic
- Solution: OOT?
  - Overdose Outreach Teams
Opioid Epidemic

The ED-Community Connection: Missed Opportunities?

Reka Gustafson MD FRCPC

Medical Health Officer and Medical Director of Communicable Disease Control
Vancouver Coastal Health
Missed Opportunities?
Deaths after discharge from overdose related ED visit/hospitalization

Hospitalization

Drug overdose associated Hospitalizations Discharged Between Jan 1, 2016 and Jun 15, 2017 (8,135)

After removing records without PHN (8,045)

Keep latest hospitalization if multiple hospitalizations occurred (4,960)

After removing who died in Hospital (4,824)

Deaths after discharge from hospital (96)

Coroners Death Data

Records between Jan 2016 and Jul 2017 (533)

ED

Drug overdose associated ED Visits Discharged Between Jan 1, 2016 and Jun 30, 2017 (11,220)

After removing records without PHN (11,126)

Keep latest visit if multiple visits occurred (6,867)

After removing who died in Hospital or admitted (6,867)

Deaths after discharge from ED (138)

Merge by PHN

18% 26%

179 (34%)
• 109 (61%) died from overdose within 3 months after discharge from hospital
• 173 (96%) died from overdose within a year after discharge from hospital
HIV was being diagnosed late

Missed Opportunities
46% of patients with CD4 count < 200 had a mean of 4.1 acute care encounters

HIV was reportable

Outreach team connected 96% of patients diagnosed in ED to HIV care

Overdose Crisis

Missed Opportunities
1/3 of people who die were seen in the ED/Acute care in the year before death

Overdoses have been made reportable

Outreach team established to connect patient who overdose to care
Opioid Epidemic

VCH Overdose Outreach Team

Misty Bath RN(C), BSN, MPH
Manager – Regional HIV Services & Overdose Outreach Team
Vancouver Coastal Health Authority
Background

- Outreach Workers originally part of the Mobile Medical Unit to provide client follow-up (Dec. 2016 – Apr. 2017)
- Standalone team as of May 2017
Overdose Outreach Team

Our Purpose:

Provide support/assistance to individuals & families attempting to navigate substance use services in Vancouver Coastal Health region (Vancouver, Richmond, North Shore)

Who We Serve:

Those who have recently experienced an overdose or at high risk of an overdose. Our goal is to connect with individuals who are not well connected elsewhere in the community
Our Services

- Navigation to appropriate services
- Support in accessing OAT
- Overdose prevention education
Location

Currently located at 58 W. Hastings in the Hastings Urban Farm
Steps to Locate a Client

- Review electronic medical records
- Attempt to contact person via phone/text
- Leave messages at resources/community services
- Leave name & contact information with friends/family
- Contact clinics not using VCH systems
- Send letter to last known address
Overview

- Review of clients referred to the team from September 1st to November 23rd 2017
- 282 clients in total
- 9 clients lost to care
Gender

- Male: 70%
- Female: 30%
Age Distribution
Referral to the team – Referral source
Number of Client Referrals to Overdose Outreach Team

<table>
<thead>
<tr>
<th></th>
<th>September</th>
<th>October</th>
<th>November</th>
</tr>
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<tbody>
<tr>
<td>Primary Care</td>
<td>19</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Self, Friends, or Family</td>
<td>6</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Addictions Services</td>
<td>17</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>ED</td>
<td>28</td>
<td>42</td>
<td>76</td>
</tr>
<tr>
<td>Housing</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Other VCH Service</td>
<td>5</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Referral to the team – Referral reason

- Referral to services
- Reengagement with services
- Injectable treatment
- Opioid Replacement Therapy
- PWD application
- Other
- Primary care
- Housing
- ORT adherence
- Information
Timeframe – Time from referral to contact

Note: 91 clients did not yet have a contact date entered
Timeframe – Time from referral to discharge

Note: 68 clients did not yet have a discharge date entered
## Client Profile

### Contact Attempts
- Client NFA, severe cellulitis, recent overdose
- Admitted to hospital, team met client in hospital, left AMA
- Team left message with SPH ED
- Client presented to ED outside team hours, message left for team on after hours phone
- Client left AMA again
- Team obtained pharmacy information from clinic, left message, client returned call

### Support Provided
- Connected client to shelter in DTES
- Completed BC Housing application and Housing First application, on waitlist for supportive building
- In the process of applying for Income Assistance
- Re-engaged him in care at clinic
- Provided support in getting to pharmacy for OAT
- Supported transition to iOAT