Opioid Epidemic

What role does the ED have?

A Panel Discussion

Department of Emergency Medicine
Provincial Grand Rounds

December 13th, 2017

Panelist Disclosures

Relationships with commercial interests:

- Grants/Research Support - no
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- Other - no

Disclosure of Commercial Support

- This program has received NO financial 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

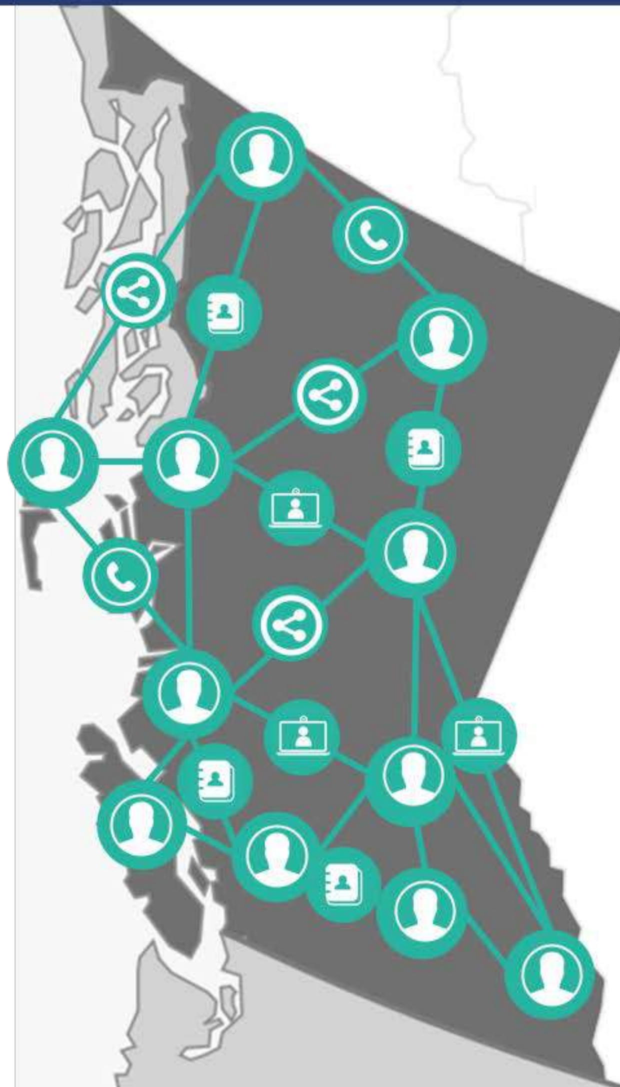
BC EMERGENCY MEDICINE NETWORK

Clinical Resources

Innovation

Continuing Professional Development

Real-Time Support



www.BCEmergencyNetwork.ca

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.

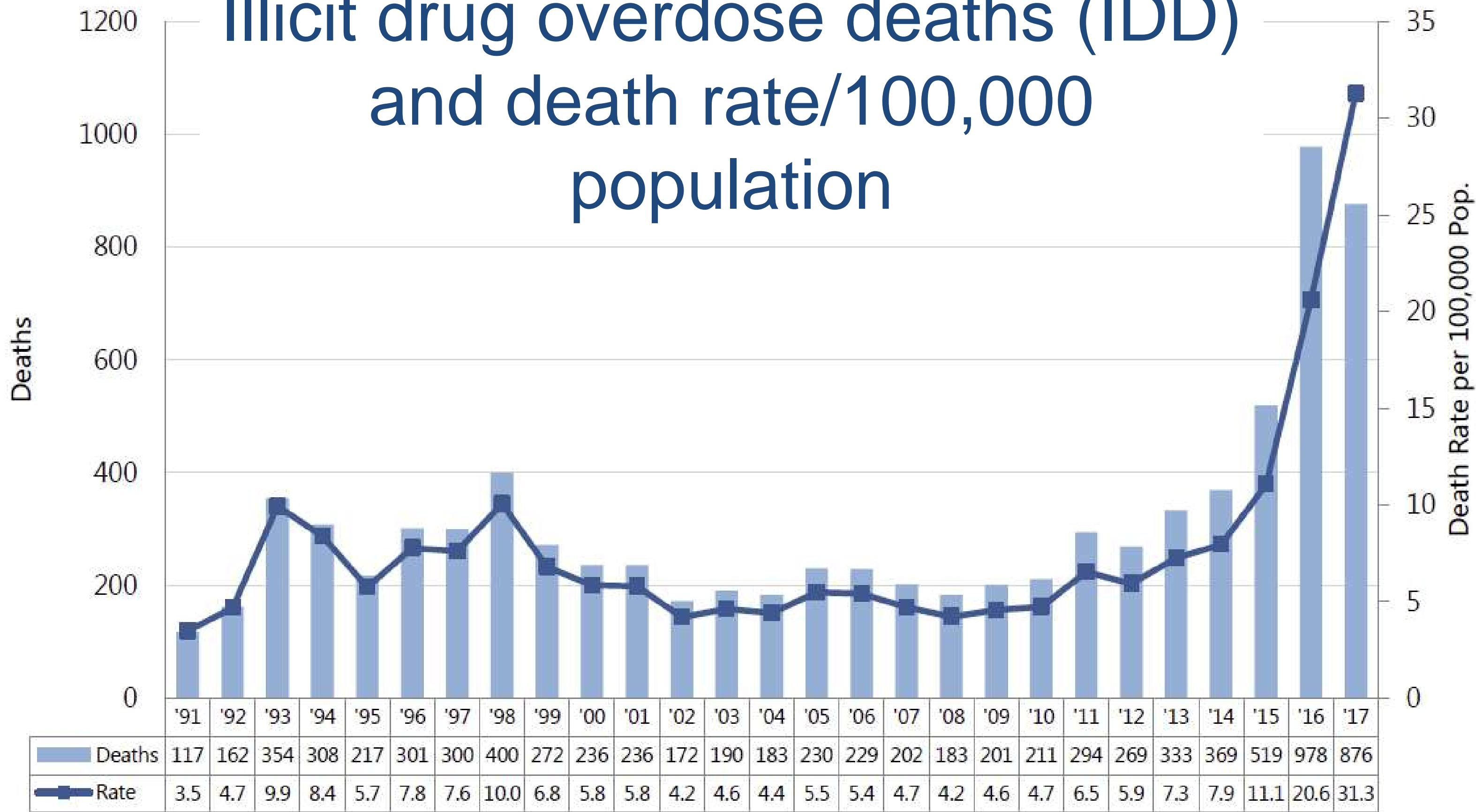
Opioid Overdose

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



	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17
Deaths	117	162	354	308	217	301	300	400	272	236	236	172	190	183	230	229	202	183	201	211	294	269	333	369	519	978	876
Rate	3.5	4.7	9.9	8.4	5.7	7.8	7.6	10.0	6.8	5.8	5.8	4.2	4.6	4.4	5.5	5.4	4.7	4.2	4.6	4.7	6.5	5.9	7.3	7.9	11.1	20.6	31.3

Provisional - will change as cases closed; BCCS Sep 7, 2017
http://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/death-investigation/statistical/illicit-drug.pdf
Data to July 31, 2017

In 2017 - 58% deaths occurred in private residence

toward THE heart.com
A PROJECT OF THE PROVINCIAL HARM REDUCTION PROGRAM

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

Mills Anesth Analg 1988, Boyer NEJM 2012

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.

Christenson Acad Emerg Med 2000

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.

Schumann Clin Tox 2008, Sutter Acad Emerg Med 2016

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)

BC DRUG & POISON INFORMATION CENTRE

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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 ($n = 2317$).

Variable	Unadjusted hazard ratio (HR)			Adjusted[b] hazard ratio (AHR)		
	RH	(95% CI)	*p*-Value	ARH	(95% CI)	*p*-Value
Non-fatal overdose[a] (Yes vs. no)	1.85	(1.11–3.07)	0.018	1.95	(1.17–3.27)	0.011

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

Any OD: died 2x sooner; More ODs: dose response

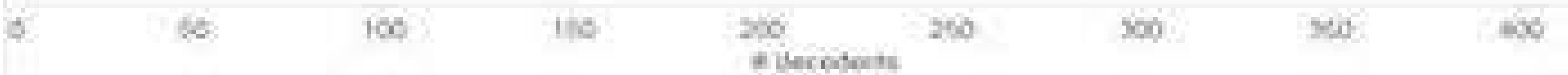
ED visits in 1 yr prior to OD death

0 ED visits 30%

1ED visit 20%

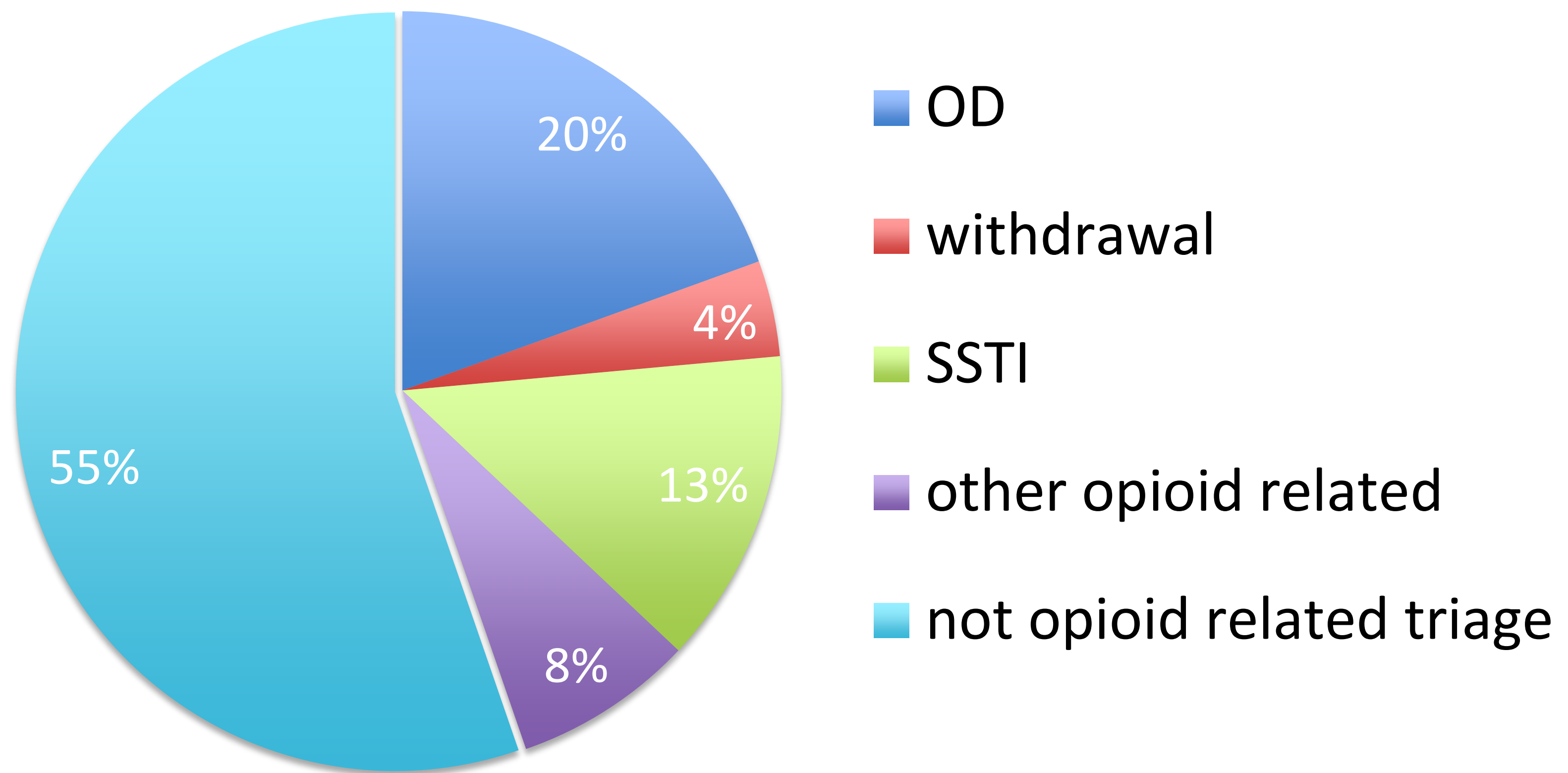
2+ ED visits 50%

400+ death Jan 2016-May 2017, Vancouver Coastal Health Residents



ODs: fraction of ED patients at risk

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

RESEARCH

Opioid overdose rates and implementation of overdose education and nasal naloxone distribution in Massachusetts: interrupted time series analysis

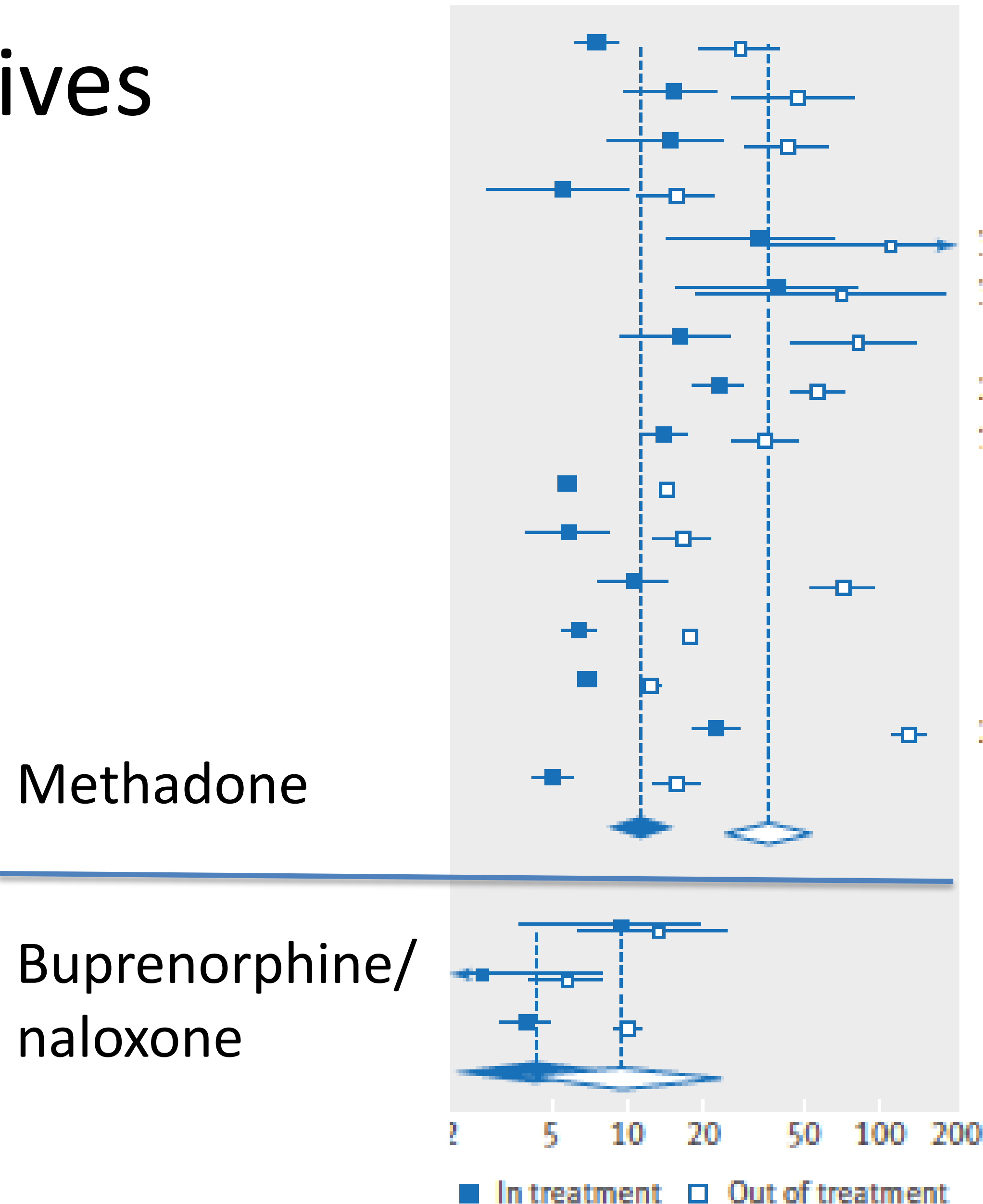
Factors Associated With Participation in an Emergency Department–Based Take-Home Naloxone Program for At-Risk Opioid Users

Andrew Kestler, MD, MBA*; Jane Buxton, MBBS, MHSc; Gray Meckling, BSc; Amanda Giesler, BSc; Michelle Lee, BSc, MPH; Kirsten Fuller, BSc, BScN; Hong Quian, MSc; Dalya Marks, PhD; Frank Scheuermeyer, MD, MHSc

340 Annals *of* Emergency Medicine Volume 69, NO. 3 : March 2017

Suboxone & Methadone save lives

- Reduce OD & all-cause mortality
  - Sordo 2017 in BMJ
- Suboxone 1st line in BC



Association between trajectories of buprenorphine treatment and emergency department and in-patient utilization

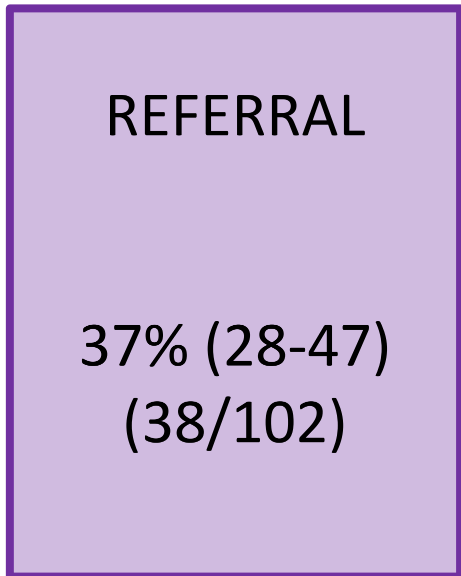
Wei-Hsuan Lo-Ciganic[1,2], Walid F. Gellad[2,3,4], Adam J. Gordon[2,3,4], Gerald Cochran[2,5], Michael A. Zemaitis[2,6], Terri Cathers[7], David Kelley[7] & Julie M. Donohue[2,8]

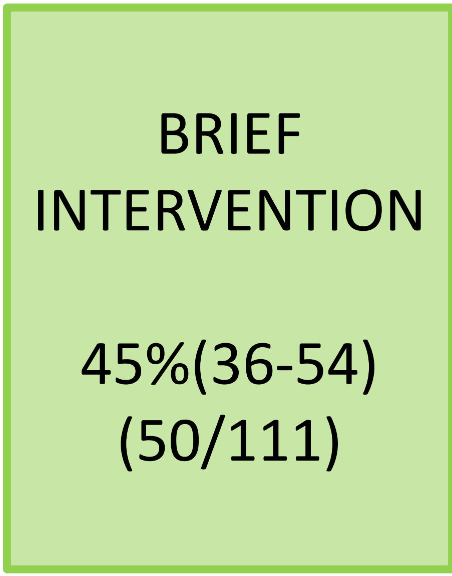
Outcomes	*All-cause hospitalizations* HR (95% CI)	*Emergency department visits* HR (95% CI)
Refilled persistently	0.82 (0.70–0.95)**	0.86 (0.78–0.95)**

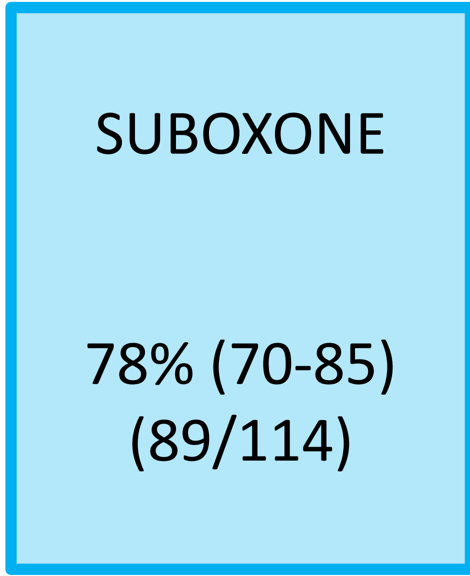
Original Investigation

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

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Opioid Epidemic

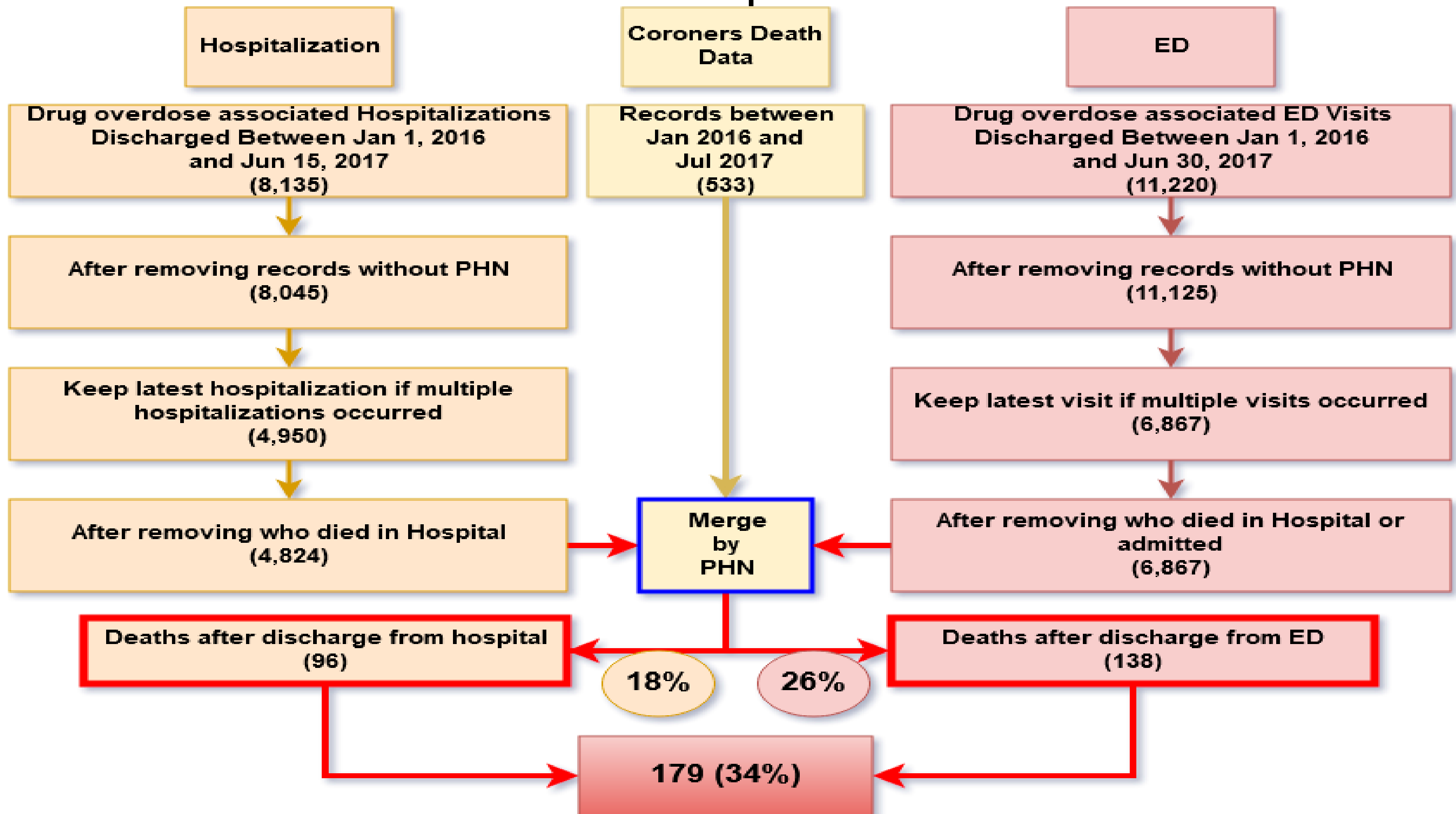
The ED-Community Connection: Missed Opportunities?

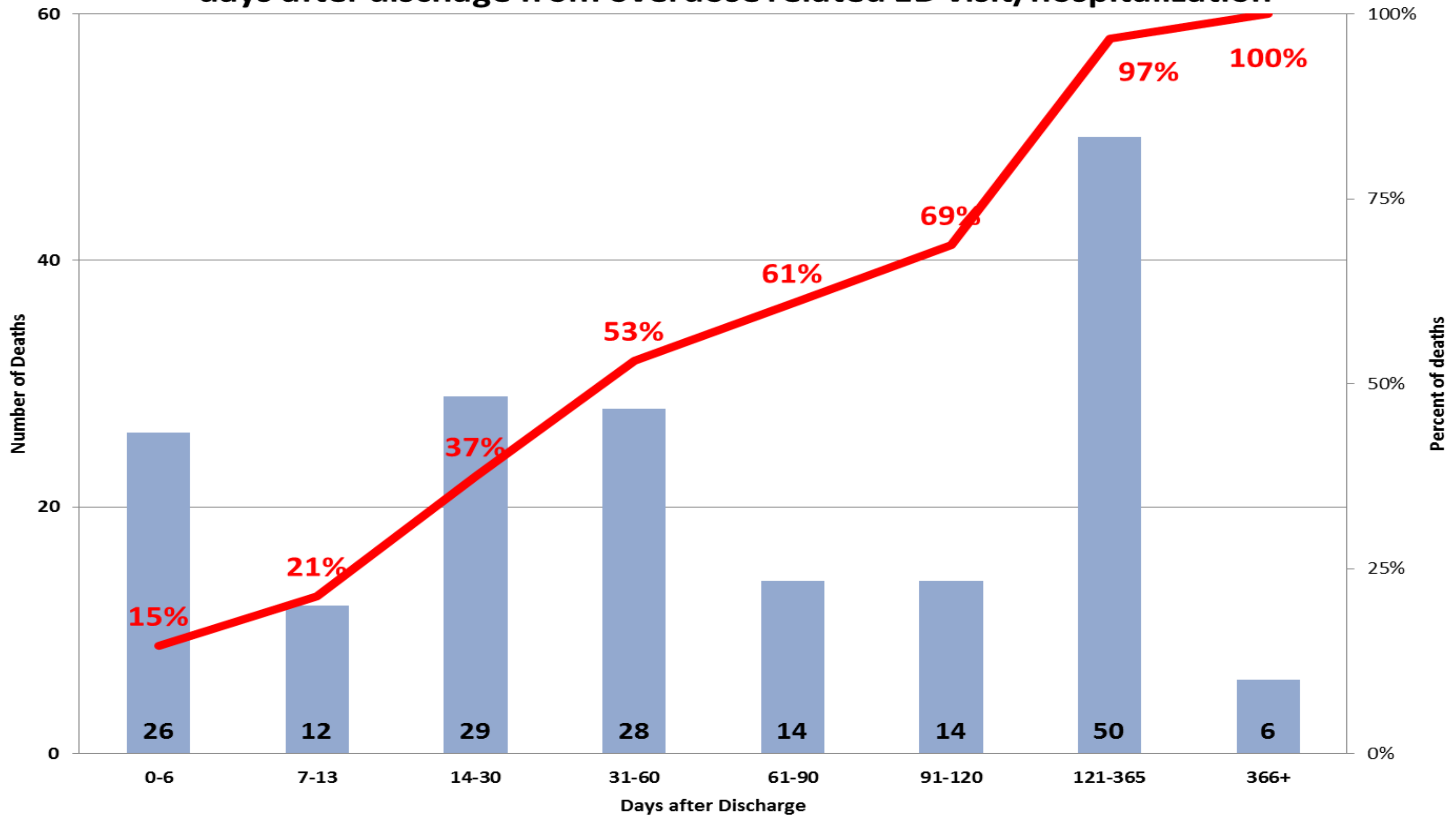
Reka Gustafson MD FRCPC

Medical Health Officer and
Medical Director of Communicable Disease Control
Vancouver Coastal Health

Missed Opportunities?

Deaths after discharge from overdose related ED visit/hospitalization





- 109 (61%) died from overdose within 3 months after discharge from hospital
- 173 (96%) died from overdose within a year after discharge from hospital

An Existing Model of Care

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

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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

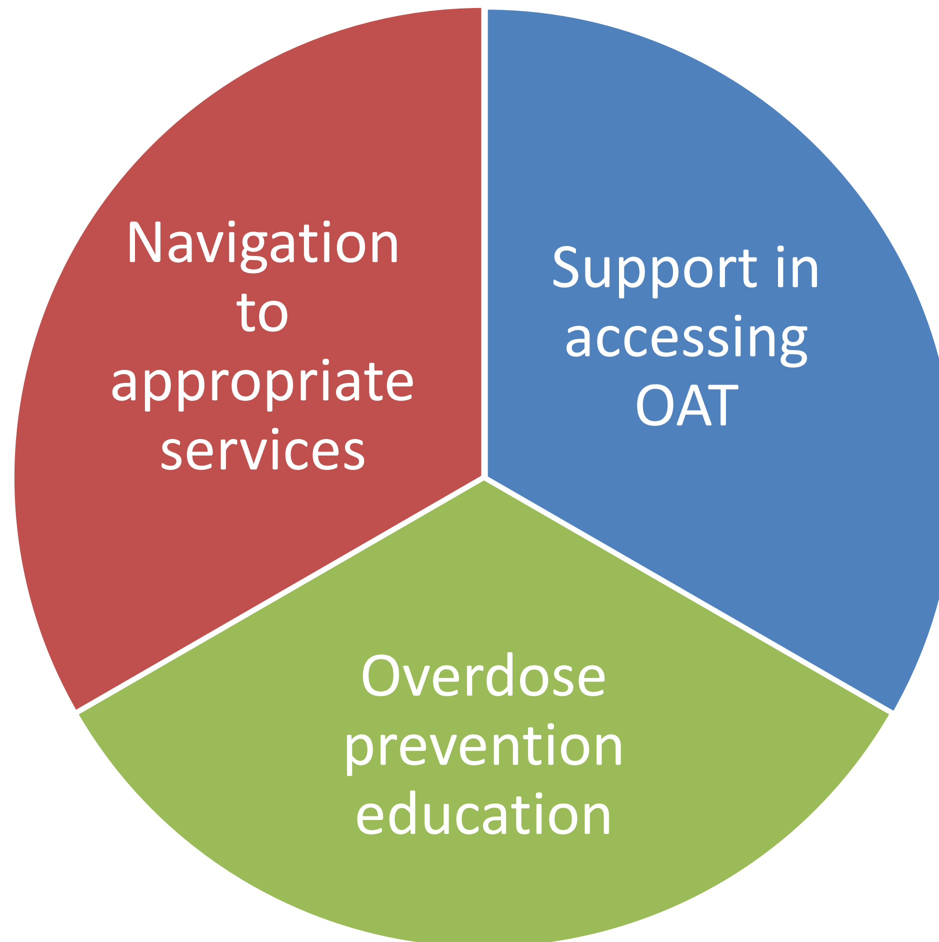
Our Purpose:

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



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

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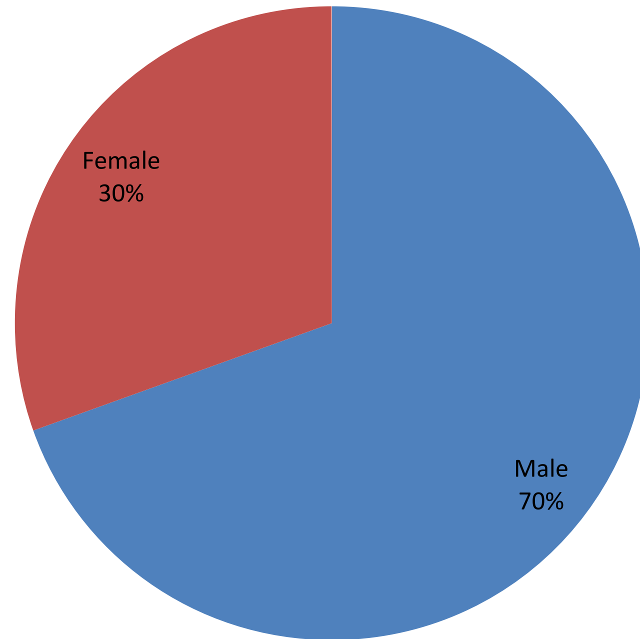
Gender



Age Distribution

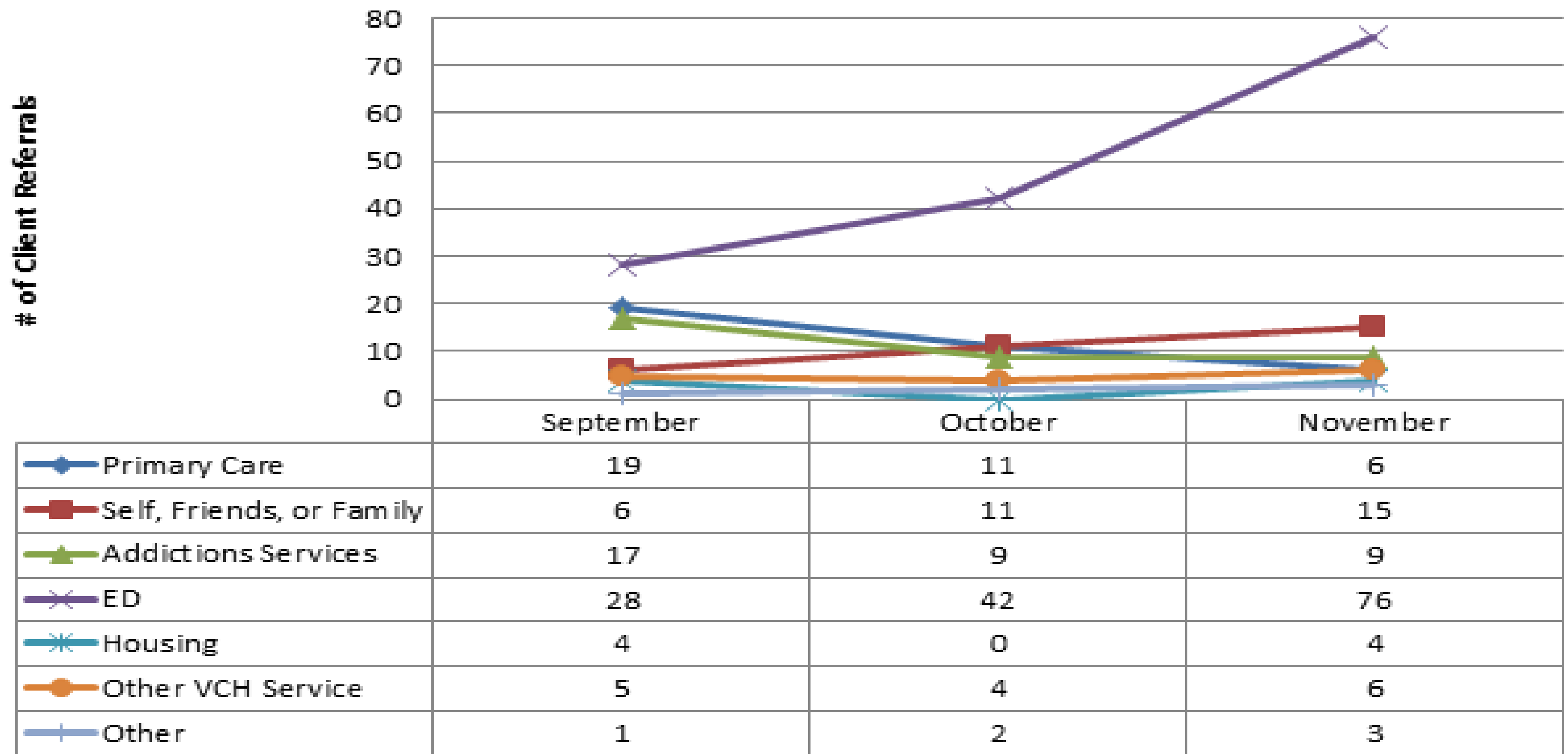
45
40
35
30
25
20
15
10
5
0

< = 19
20 to 29
30 to 39
40 to 49
50 to 59
> = 60

Referral to the team – Referral source

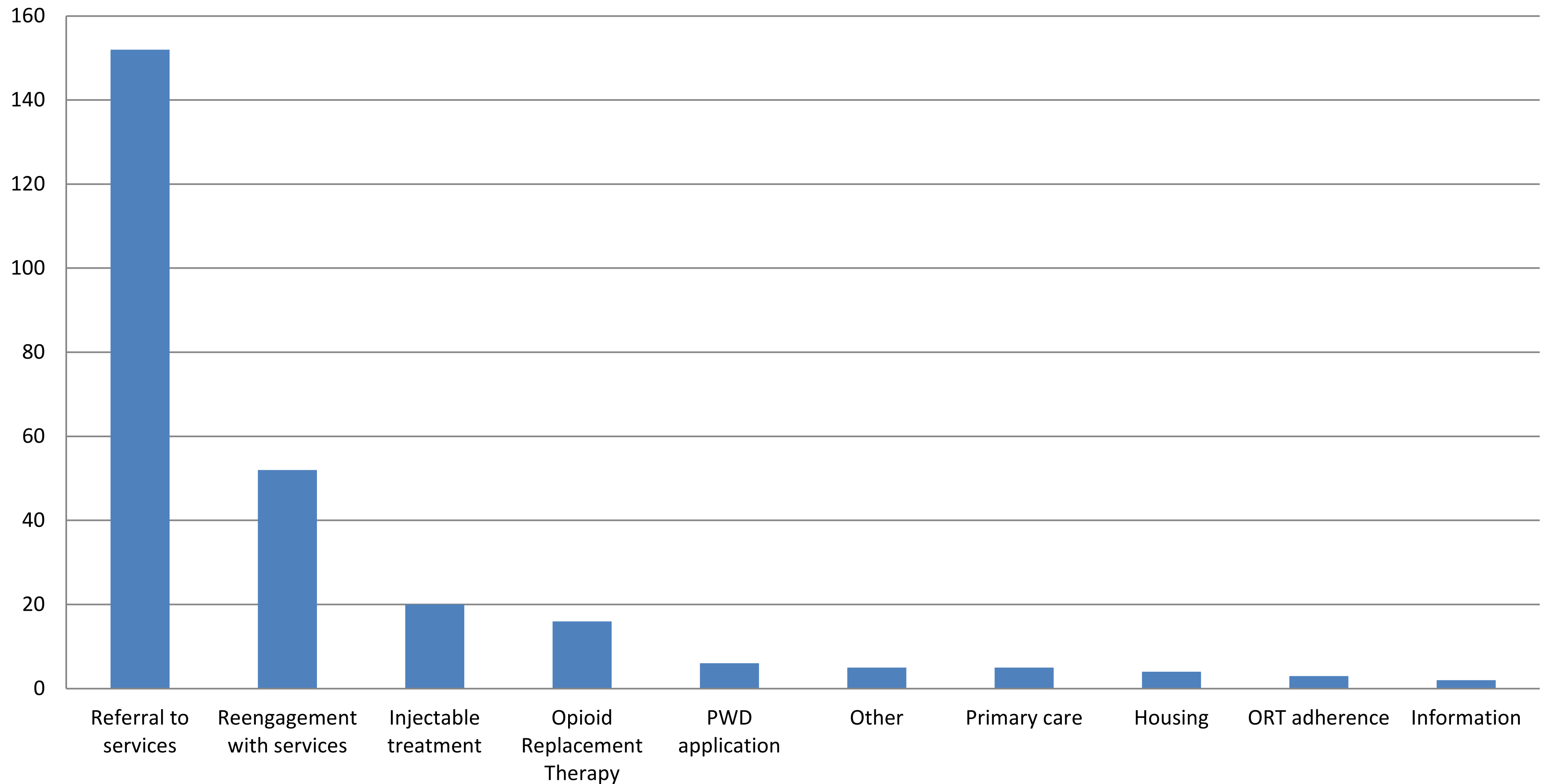
160
140
120
100
80
60
40
20
0

ED
Primary Care
Addictions Services
Self, Friends, or Family
Other VCH Service
Housing
Other



	September	October	November
Primary Care	19	11	6
Self, Friends, or Family	6	11	15
Addictions Services	17	9	9
ED	28	42	76
Housing	4	0	4
Other VCH Service	5	4	6
Other	1	2	3

Referral to the team – Referral reason



Timeframe – Time from referral to contact

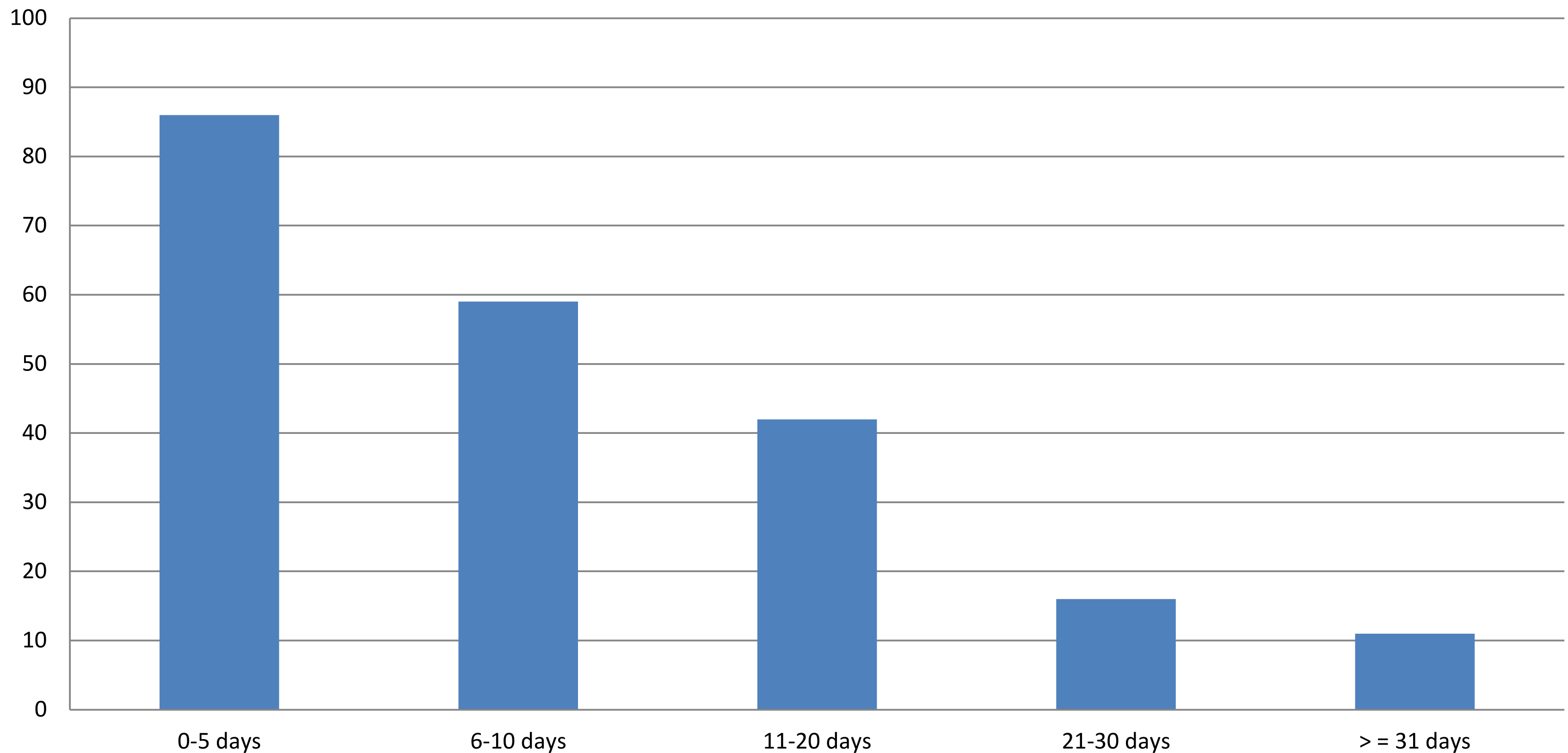
Note: 91 clients did not yet have a contact date entered

90
80
70
60
50
40
30
20
10
0

0 days
1-5 days
6-10 days
11-20 days
> = 21 days

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

Q&A