

(Basically) getting Nosey about  
Narcotic Overdose:  
Use of Nasal Naloxone by BLS  
Providers

Eagles X

Peter Moyer MD,MPH

Medial Director Boston EMS, Fire and  
Police

# Opiate Overdose: Big Problem & getting Bigger

After dip in 80's opiate abuse has increased since 90's

Massachusetts: fatal opiate OD's/yr

1990 :94

2003 :573

\*Heroin cheaper and more pure

\*Increased use of prescription narcotics

# Heroin

- Derived from the poppy plant
- IV heroin peaks in serum in 1 minute



# Other opiates of abuse

- Many opiate products available as legal pharmaceuticals can be abused
- Oxycontin
- Fentanyl
- Percocet



# Heroin and Boston EMS

For 2003

- 716 Heroin “patient encounters”
- 296 received naloxone  
(Narcan ®)
- Higher among men
- Commonest age:  
35-45



# Heroin OD Clinical picture

- Classic triad

miosis

respiratory depression

CNS depression

<1 % complicated by non cardiogenic pulmonary edema –95 % of cases occur at onset of OD

# When do heroin OD's typically occur

- High potency heroin
- Polysubstance OD- typically alcohol and benzo's on top of heroin
- Decreased tolerance after period of abstinence –release from jail, relapse after detox /recovery

# Naloxone (Narcan)

- Pure opiate antagonist –reverses respiratory & CNS depression
- High lipid solubility so rapidly enters CNS
- IV :Half life 30 min ,lasts 45-90 min
- Can be given IV,IM,SC,IN
- Inexpensive: \$10 per 2 mg
- Long shelf life: 18-24 months



# Naloxone complications

rare: ~1%

severe agitation

seizures

pulmonary edema

arrhythmias

# Intranasal(IN) Naloxone

- No needles –
  - needles pose major risks: HIV, Hep B and C
  - hassles of HIV prophylaxis to provider and family after needle stick
  - IV access difficult and time consuming in IVDU's

# Response % using IN Naloxone

- Response :

Denver ALS: 2 mg naloxone/2cc in prefilled syringe IN via atomizer; if no response to IN, IV naloxone:

-43/52(83%) naloxone responders awoke with IN naloxone ;5/9 who responded only to IV naloxone had nasal pathology

Barton. J of Emerg Med Jan , '05

# Response %

- Australian study comparing IN to IM naloxone :  
62/84 (74%) of OD's responded to IN naloxone alone
- \*used 2mg in 5 cc
- \*fewer withdrawals effects with IN

A-M Kelly. MJA, Jan 2005

# Response times using IN Naloxone

~ Equal for IV and IN

-from drug administration to clinical response : IN 4.2(+/- 2.7) & IV 3.7(+/- 2.3 min)

- from patient side to clinical response: shorter for IN (8.0 min) than for IV (10.0 min)

Barton J of Emerg Med Jan , '05

# Boston EMS & Naloxone(Narcan)

Historically naloxone (Narcan ) given IV or IM by ALS only

2003 Intranasal (IN) naloxone approved as alternative route for ALS

2005 IN naloxone also approved for BLS

# Boston EMS BLS or ALS IN Naloxone Administration

- 2 mg in 2cc in prefilled syringe
- 1mg in 1 cc via atomizer in each nostril

# Administering Nasal Narcan

- Confirm indications
- Confirm patient has no exclusion criteria (nasal trauma/obstruction, etc.)
- Continue BLS airway support





# Assemble Mucosal Atomizer

- Mucosal Atomizer Device attaches to 2 mg Naloxone Bristoiet



# Administer 1 mg each nostril

- 1 mg/ 1cc each nostril



# Boston Experience

2006

BLS: 86 uses of IN Naloxone  
pilot of 1<sup>st</sup> 26 patients-  
75% OD reversals

# Heroin User Partners Administering Naloxone

- Form of Harm Reduction
- Most heroin use done in company of others
- Heroin Users recognize OD's
- Use of IN naloxone is easy and safe
- Boston has such a program

76 reported reversals first year ('07)