Naloxone

Presentation by
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Opioid overdose

- Overdose now responsible for more deaths than road accidents. Opioids involved in most of those deaths – more than 1000 in 2016. Pharmaceutical opioids involved in most opioid related deaths – 65%. (NDARC 2018). Most accidental overdoses involve multiple drugs.
- Opioid overdose is opioid-induced respiratory depression (OIRD)
- Respiration is controlled by two complex systems: the chemical or metabolic control of breathing and the behavioural control system. **Opioids can affect both of these by suppressing the respiratory systems and by sedation**
- Death occurs usually from cardio-respiratory arrest followed by hypoxia.
- The primary drug treatment for OIRD is naloxone

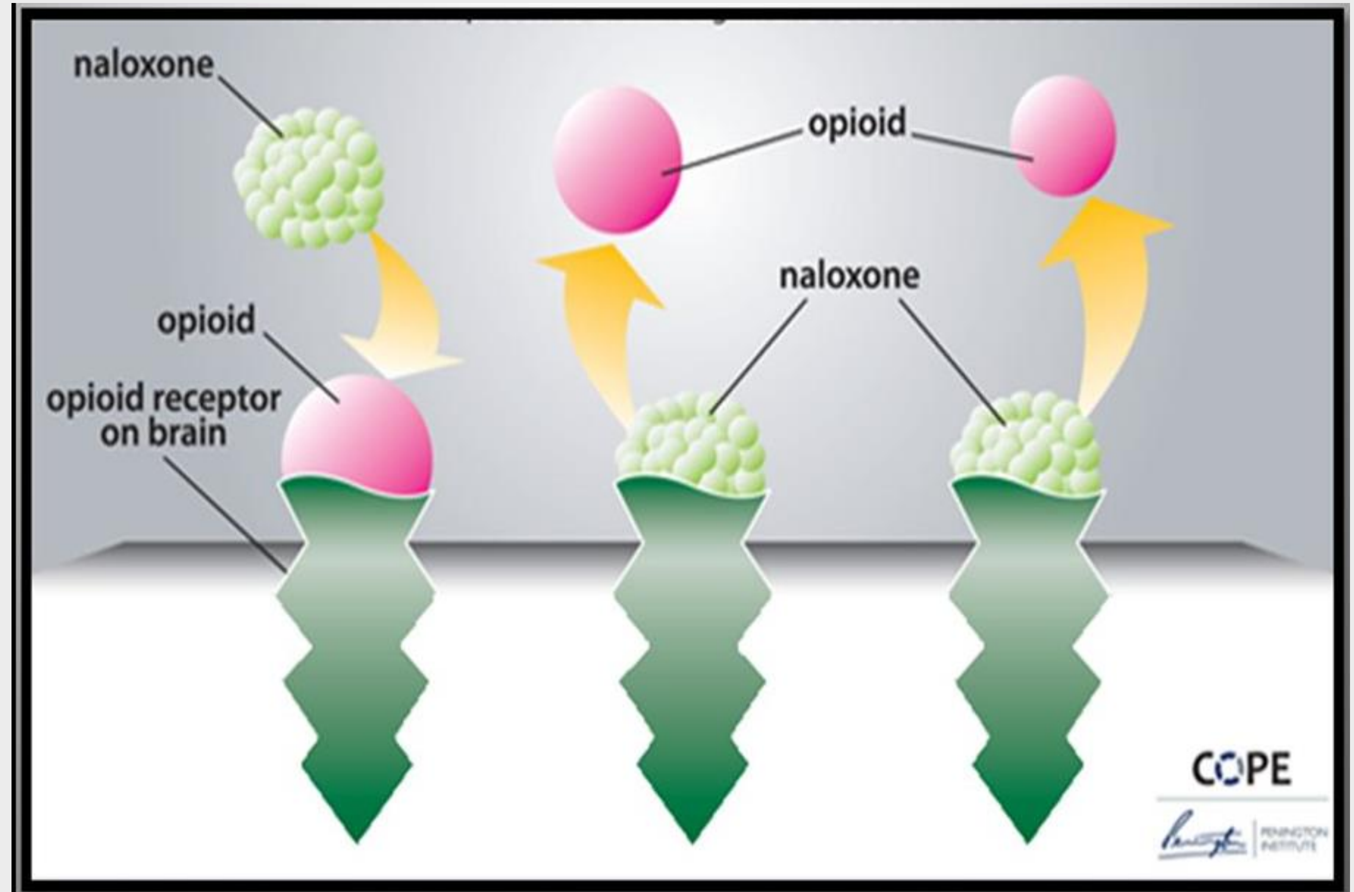
Factors increasing the risk of overdose?

- Recent hospitalisation or other care, especially multiple, for:
  - Any substance use disorder
  - Bipolar disorder or schizophrenia
  - Stroke or cerebrovascular disease
  - Renal or liver disease with impaired function
  - Heart failure
  - Pancreatic disease
  - Chronic pulmonary disease
  - Sleep apnoea
  - Recurrent headache
- Consumes fentanyl, morphine, methadone, hydromorphone, benzodiazepines, antidepressants
- Consumes extended or delayed release form of any opioid
- >100mg morphine equivalent per day

What is naloxone?

- Semi-synthetic, structurally similar to some semi-synthetic opioids
- Pure opioid antagonist – has no opioid agonist effect
- Non-selective antagonist – binds to mu, kappa and omega receptors
- Most affinity for the mu receptor which is responsible for analgesic effect as well as the most clinically important side effects – tolerance, constipation, euphoria, **respiratory depression**
- Has virtually no pharmacological effect in the absence of opioids.

How does naloxone work?



How is naloxone given?

- Can be administered intravenously, intramuscularly, subcutaneously or intranasally.
- Poorly absorbed orally but is compounded with oxycodone in Targin® to combat peripheral side-effect of constipation. Also compounded with buprenorphine in Suboxone® to prevent diversion.
- Onset of action within 1-2 minutes, a bit longer for IM/SC
- Duration of action 30-90 minutes – **important!**
- Dose used varies widely depending on the setting and route of administration eg: repeated 50mcg IV dose in adult acute care hospital, 1.6mg IM dose in some ambulance services, repeated 400mcg IM in community setting
- Should only be given after ensuring patency of airway

Side-effects

- In opioid-dependent person, can precipitate withdrawal – vomiting and aspiration
- May expose effects of other drugs in a poly-drug user

How is naloxone presented?

- 400mcg/ml glass ampoules or 2mg/2ml pre-filled, incremented-dose syringe (Prenoxad ®)
- Either presentation can be used in any setting but Prenoxad is designed for use in community settings.
- Both can be bought over-the-counter but ~$75-$80.
- PBS-listed –unrestricted 5 ampoules or 1 syringe. $6.40-$39.50
- Intranasal not available in Australia (yet!)

Community overdose prevention

Overdose

Preventing Overdose

Naloxone

Information for Health Professionals

Example prescriptions

Information for Police

Responding to overdose with Prenoxad (naloxone)

Responding to overdose with ampoules (naloxone)

Penington Institute, COPE Australia resources.

- regularly updated
- concise
- for everyone involved.

copeaustralia.com.au

Community overdose response

Signs of an overdose

- Limp body
- Heavy ‘nod’ of the head
- Snoring/gurgling noises
- Irregular/shallow breathing, or not breathing
- Possible vomiting
- Blue lips – if pale skinned
- Ashen look – if dark skinned
- unresponsive

Community overdose response

Response plan

- Check for danger – needles, angry bystanders
- Try to get a response from the person
- If no response, dial 000
- Place person in recovery position
- Tilt head back, ensure airway is clear and will remain clear
- Assemble and use naloxone, giving one 400mcg dose
- If person has pulse, apply rescue breathing
- If no signs of life, start CPR if able
- Repeat dose of naloxone if not breathing after 2-3 minutes and continue other measures.

Community overdose response

Aftercare

- Patient can be confused, angry, not wanting further care
- Naloxone wears off after 30-90 minutes – respiratory depression and overdose can recur.
- Re-emerging overdose more likely if patient has taken alcohol, benzodiazepines, certain long-acting opioids, certain dose forms (SR tabs), or could be simply a large quantity of opioids.
- Important that ambulance is called and someone remain with the patient to re-administer naloxone if needed.

Training and subsidies

COPE Australia can provide training in group sessions. Numerous local health organisations are accredited to provide training.

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Vic government **Naloxone Subsidy Initiative** aims to improve supply by making naloxone more accessible. Many community health organisations can fund the cost of naloxone under this initiative. Mixed success - heavily dependent on available resources.

Coming soon?

- Can make an intranasal spray with the right equipment – ampoules plus aeroliser syringe attachment
- Intranasal naloxone spray will be coming to Australia.
- ?cost, ?PBS-listed

Questions?