COSUP
The management of substance use

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Overview

- COSUP
- Harm Reduction
- Opioids
- OST (Methadone and Suboxone)
- Management of acute pain in opioid users (on heroin and on OST)
- Mx of overdose

What is COSUP?

- Community Orientated Substance Use Programme
- Initiative between the City of Tshwane and the University of Pretoria, Department of Family Medicine.
- Based on the principles of COPC – where healthcare is taken into the communities and households.
- Involve all community stakeholders and try to collaborate efforts with them
- We use a **harm reduction** philosophy
- Team of people with varying skills and qualifications: Doctor, Clin A, Social Worker, CHWs, peer educators

Services Provided

- Screening and brief interventions
- Medical examinations and treatment
- Counselling services
- Opioid substitution therapy
- Needle exchange programmes
- HIV/TB screening
- Social services
- Skills development
- Post-rehabilitation support services

How COSUP functions

- Meet the patients where they are to register individuals and screen individuals for substance use issues.
- Educate the community, on the health care services available in the region, and that there is help available (refer substance users/ concerned persons to COSUP).

How COSUP functions

- **Needle-syringe exchange programme** for those that inject substances.
- **Managing conditions**
- **Prescription** of OST (Opioid Substitute Therapy)

  - Methadone or Suboxone

  - DOT (Directly Observed Treatment) where possible
- **Peer support**

Harm Reduction

- Harm reduction is a set of practical strategies and ideas aimed at reducing negative consequences associated with drug use. (HIV/Hepatitis B and C)
- People have the right to be in a safe and supportive environment even if they are not ready to abstain from drug use
- Study conducted August 2016 and October 2017 → 943 PWID recruited across Cape Town, Durban and Pretoria to assess prevalence of HBV, HCV and HCV-HIV co-infection.[1]
- Pretoria- 39% ♂ , 36% ♀ PWIDs HIV +
- The study found that hepatitis C prevalence (virological confirmation) ranged from 29-73%.[1]
- Up to 28% of people who inject drugs in Pretoria found to be co-infected with HIV and HCV.[1]

Opioids

Opioid pharmacology

Opioid receptors

- Classical Receptors
  - μ (Mu)
  - δ (Delta)
  - κ (Kappa)
- Non-classical Receptors
  - Opioid-receptor-like 1 (ORL -1)

Effects on receptors

Receptor	Response
μ	μ1- supraspinal analgesia, physical dependence μ2- respiratory depression, miosis, euphoria, ↓GI motility, physical dependence
δ	Analgesia and may be associated with mood change
κ	Spinal analgesia, diuresis, dysphoria, miosis, depersonalization and derealization

Where do the drugs work?

Opioid	μ	δ	κ
Heroin, Morphine, Codeine	+++	+	+
Pethidine	+++	+	+
Fentanyl	+++	-	+
Methadone	++	-	-
Buprenorphine	+++	-	+
Naloxone	+++	++	++

Methadone

- Synthetic mu opioid agonist with good oral bioavailability and a long duration of action (24-36 hours)
- Methadone 2mg/ml oral solution- daily dosage
- 500ml (1000mg) & 60ml (120mg)
- Cost

How to use methadone?

- The initial dose should be 10–30 mg (5-15ml) methadone per day for the first three days (depending on type of opioid use and route)
- The principle is: start low, go slow, aim high
- Clinical criteria for dosage increases: Clinician increases the patient's methadone dose if the patient experiences withdrawal or cravings. Persistent opioid cravings or opioid use may indicate the need for a dose increase, even in the absence of reported withdrawal symptoms.
- Doses should not be increased by more than 5–10 mg (2.5-5ml) every three to four days
- For most patients, the optimal dose is between 60 and 120 mg.
- Long-term MMT. Recommended for 18-24 months

Methadone

Side effects (mild)

- sedation
- constipation
- skin rash
- headaches
- sleep disturbances
- sweating
- nausea & vomiting
- reduced libido

NB NB NB: OVERDOSE WITH CONCOMITTANT HEROIN USE

Suboxone

- Buprenorphine-naloxone
  - Combination of buprenorphine hydrochloride and naloxone hydrochloride dihydrate
  - 4:1 ratio
- Sublingual tablet/film
  - 2mg/0,5mg
  - 8mg/2mg

  Developed to decrease diversions and abuse of buprenorphine

Suboxone Pharmacology

- Partial μ-opioid receptor agonist
- High affinity for μ-opioid receptors
- Primarily antagonistic at kappa opioid receptors
- Slow dissociation from receptors
- Does not increase beyond a certain threshold i.e. “ceiling effect” -when administered with full agonists, such as morphine → antagonizes the action of these drugs
- Half-life 24-36 hours

Why Naloxone?

- Naloxone activity poor via sublingual use
- To prevent IV and nasal use →increased bioavailability naloxone via these routes
- Results in withdrawal

How to use Suboxone

- Titrated to clinical effect
- Administer at least 12-24 hours after last opioid use and/or observed withdrawal symptoms
- Initiate at 2-4mg
- Principle is start low, go fast, aim high
- Increase every 2 hours by 2mg (under supervision)
- Up to 8mg MAX on Day 1, up to 16mg MAX on Day 2
- To reach dose 12-24mg at end of week 1
- Maximum dose 32mg (hardly ever reached)
- Monitor daily if possible, at least 3 times per week

Contra-indications to OST

- Hepatic impairment
- Biliary tract obstruction
- Anaphylaxis
- Raised intracranial pressure
  - Intracranial lesions, previous severe head injury (take caution)
- Pregnancy
- Patients with hypothyroidism or prostatic hypertrophy. A lower initial dose must be administered
- CNS depressant use
  - Need to taper depressants before initiating OST

Caution

Methadone

- Respiratory depression
- Patients with a family history of cardiac conditions
- ECG must be done prior to methadone initiation (specifically looking at QT interval)
- Very high doses of methadone are associated with Torsades de Pointes arrhythmias (usually if there are multi cardiac risk factors)
- Patients with hypothyroidism or prostatic hypertrophy → lower initial dose must be administered

Acute Pain Management in Opioid Users

- Consensus recommendations → maintaining regular provision of the patient's pre-existing opioid requirement, with additional analgesia, ideally multimodal, in appropriate combinations of short-acting opioid (as required), local anaesthesia, and adjuvant anti-inflammatory analgesics and paracetamol.[5]
- Opioids may be used safely and effectively in opioid dependent patients
- Tolerance to the side-effect profile develops more rapidly than the analgesic effects, they may be safely titrated to high doses to achieve adequate analgesia
- Opioids should be prescribed on a regular rather than prn, basis.

Acute Pain Management in Opioid Users

- Acute Pain Management for Patients Receiving Maintenance Methadone or Buprenorphine Therapy. *Ann Intern Med*. 2006 January 17; 144(2): 127–134.
- Common misconceptions:

1) The maintenance opioid agonist (methadone or buprenorphine) provides analgesia

- Neuroplastic changes associated with long-term opioid exposure (tolerance and hyperalgesia) → diminish their analgesic effectiveness
- Patients receiving OST for addiction treatment do not derive sustained analgesia from it. Methadone and buprenorphine, potent analgesics, have a duration of action for analgesia 4-8 hrs with suppression of opioid withdrawal 24-48 hrs
- Hyperalgesia (or analgesic tolerance) counteracts the analgesic effects of opioids and complicates pain management

Common misconceptions…

2) Use of opioids for analgesia may result in addiction relapse

- NO evidence that exposure to opioid analgesics in the **presence of acute pain** increases rates of relapse.

3) The additive effects of opioid analgesics and OAT may cause respiratory and CNS depression

- Theoretical risk → never been clinically demonstrated
- Tolerance to the respiratory and CNS depressant effects of opioids occurs rapidly and reliably
- Suggested that acute pain serves as a natural antagonist to opioid-associated respiratory and CNS depression

Common misconceptions…

4) Pain complaint may be a manipulation to obtain opioid medications, or drug-seeking, because of opioid addiction.

- Powerful motive underlying physicians' reservations about prescribing opioid analgesia for acute pain to patients receiving OAT for opioid dependence
- Reports of acute pain with objective findings are less likely to be manipulative gestures than are reports of chronic pain with vague presentations. Furthermore, patients receiving OAT typically receive treatment doses that block most euphoric effects of co-administered opioids, theoretically decreasing the likelihood of opioid analgesic abuse

Management of Overdose

- BLS/ACLS principles
- Glucose
- **Nyaope/heroin/opioids: NALOXONE (don't wait to give)**
  - IV: give 0.1 to 0.4mg doses at 2 – 3 minute intervals until the desired degree of reversal is obtained. If a total dose of 10mg has been given without an adequate response, reconsider the aetiology.
  - IM / SC: Start with 0.4mg. Repeat as necessary every 5minutes.
  - Intranasal (IN): Give 2mg (1mg in each nostril). Repeat as necessary every 5 minutes.
- 12 lead ECG (arrhythmia with stimulants)
- Bloods and urine toxicology can be helpful (don't delay)

COSUP sites

1. Mamelodi Regional Hospital 19472 Cnr Serepeng & NR Serepeng & Tsamaya Road 066 472 5580/ 082 858 2553 Mon - Fri (08h00 – 16h00)	**2. Ikageng – Mamelodi** Th Holy Bible Church 21822 Molokoloko Circle Call: 012 842 3515 / 082 858 2553 Mon - Fri (08h00 – 16h00)	**3. Lusaka – Mamelodi** Mobile point Lusaka, c/o Millenyane & Ratshwene Street Call: 012 842 3515 / 082 858 2553 Mon & Tue (08h00 – 15h30)	**4. Eersterust Community Health Centre** C/o Ps Fourie Drive & Hans Coverdale Road East Call: 082 941 6038 Mon – Fri (08h00 – 16h00)	**5. Atteridgeville** AttMed, 85 Komane Street, Atteridgeville Call: 012 373 6446 / 082 858 2450 Mon – Fri (08h00 – 16h00)
6. M17 – Soshanguve Dream Team Foundation, M17 Road, Soshanguve South Call: 082 858 2563 / 066 300 8338 Mon – Fri (08h00 – 16h00)	**7. Block DD – Soshanguve** Heavens Defence Force, Tlholosang Street, Block DD Call: 082 858 2563 / 066 300 8338 Tue & Thu (08h00 – 16h00)	**8. POPUP Soshanguve- Block K** c/o Aubrey Matlala & Tlou Street 1281 Block K Mon – Fri (08h00 – 16h00) 076 587 6770/ 066 300 8338	**9. Block V – Soshanguve** Elim Tabernacle Church, Inkanyezi Street, Block V Call: 082 858 2563 / 066 300 8338 Mon – Fri (08h00 – 16h00)	**10.Garankuwa** Reatlegile Centre, Stand No. 05030 Mon – Fri (08h00 – 16h00) Call: 082 858 2563 / 066 300 8338

COSUP Sites

11. Sediba Hope Community Clinic 173 Bosman Street, Pretoria CBD Call: 064 048 1915 / 082 858 4304 Mon – Thu (08h00 – 16h00)	**12. Sediba Hope Community Clinic – Sunnyside** 116 Joubert Street Street, Sunnyside Call: 082 858 2454 Mon – Thu (08h00 – 16h00)	**13. Laudium Community Health Centre** 405 Bengal Street, Laudium Call: 081 725 2462 Mon & Wed (08h00 – 16h00)	**14. Olievenhoutbosch** Olievenhoutbosch Ext 23 Cnr of Imbovane and Imbongolo Street Call: 066 472 5741 Mon – Thu (08h00 – 16h00)
15. Reliable House-Hatfield Cnr of Park Street and Station Place Mon – Fri (08h00 – 16h00)	**16. Daspoort Poli Clinic** 1049 c/o Market and Camp Street, Pretoria West Call: 012 379 3453 / 082 857 0922 Mon – Fri (08h00 – 16h00)	**17. Tshwane District Hospital** Steve Biko Rd & Dr Savage Rd Ward 53 0671833735 Mon – Fri (08h00 – 16h00)	

References

1. Scheibe A, et al. Understanding hepatitis B, hepatitis C and HIV among people who inject drugs in South Africa: findings from a three-city cross-sectional survey. Harm Reduct J. 2019;16:28
2. Opioid pharmacology: an overview with emphasis on clinical relevance- Dr D Bhuyan (Presented at the national CME “OST: Policy and Practice” – AIIMS, New Delhi 2015)
3. Equity pharmaceuticals guidelines: Methadone
4. Suboxone (package insert). Warren, NJ. Reckitt Benckiser Pharmaceuticals Inc. 2010
5. Alford DP, Compton P, Samet JH. Acute Pain Management for Patients Receiving Maintenance Methadone or Buprenorphine Therapy. Ann Intern Med. 2006 January 17;144(2):127–134.
6. Mehta V, Langford RM. Pain management for opioid dependent patients. Anaesthesia. 2006;61:269–276