Appendix A. King Fahad medical city proposed palliative care approach in methadone rotation to other opioids

Key considerations

QT Prolongation Risk: Methadone is a known cause of QT prolongation (especially at higher doses). Alternatives like morphine, oxycodone, or hydromorphone are safer.

Cross-Tolerance: Methadone has a long half-life and strong mu-opioid affinity, so the new opioid dose must be carefully calculated to avoid under- or overdosing.

Pain Control: The new opioid should provide equivalent analgesia without exacerbating QT issues.

Step-by-step rotation plan

Choose a safer opioid

Preferred options (lower QT risk):

Morphine (first-line for cancer pain)

Oxycodone (if renal/hepatic dysfunction is a concern)

Hydromorphone (for severe pain, shorter half-life)

Avoid: Fentanyl (QT risk), tapentadol /tramadol (lower efficacy, SNRI effects).

Calculate equivalent daily dose (EDD) of methadone

For example, current methadone dose: 5 mg AM + 7.5 mg PM = 12.5 mg/day methadone.

Methadone's relative potency varies by dose. At <30 mg/day, methadone ≈ 4× more potent than oral morphine.

Estimated morphine equivalent: 12.5 mg methadone × 4 = ~50 mg oral morphine/day.

Select new opioid & start at 50–75% of calculated dose

Due to incomplete cross-tolerance, reduce the initial dose to avoid overdose.

Example conversions

Opioid	Starting dose (approximate)	Administration
Morphine	25–30 mg/day oral	5 mg every 4 hours + PRN
Oxycodone	15–20 mg/day oral	5 mg every 4–6 hours + PRN
Hydromorphone	5–6 mg/day oral	1–2 mg every 4 hours + PRN

Taper methadone while initiating new opioid

Option A		Option B
Slow cross-taper.		Stop methadone abruptly and start new opioid at 50–75% EDD.
Reduce methadone by 2.5 mg every 1–2 days while increasing the new opioid.		Only if close monitoring is possible (risk of withdrawal/underdosing).
Example:		
Day 1:	5 mg AM + 5 mg PM (↓ 2.5 mg) + Morphine 10 mg every 4 hours.	
Day 3	Methadone 5 mg once daily + Morphine 15 mg every 4 hours.	
Day 5	Stop methadone, adjust morphine as needed.	

Monitor & adjust

QT interval: Repeat ECG within 24–48 hours of stopping methadone.

Pain control: Titrate new opioid by 25–50% daily if pain is uncontrolled.

Withdrawal signs: If present, increase the new opioid by 25% or give PRN doses.

Side effects: Constipation (start laxatives), sedation, respiratory depression (rare at this dose)

Consider adjuvants for pain

Neuropathic pain: Gabapentin/pregabalin, low-dose ketamine.

Bone pain: NSAIDs (if no contraindication), steroids.

Final notes

If QT remains prolonged: Correct electrolytes ($K+$, Mg^{2+}), avoid other QT-prolonging drugs.

If pain is still uncontrolled: Titrate new opioid faster or consider palliative care consultation.

If methadone is for opioid use disorder (OUD), consult an addiction specialist to avoid relapse.[7]