## APPENDIX TABLE 2. Opioid analgesic initial dose guidelines

<table>
<thead>
<tr>
<th>Drug</th>
<th>Parenteral</th>
<th>Oral</th>
<th>Child &lt;50 kg</th>
<th>Child &gt;50 kg</th>
<th>Parenteral/oral dose ratio</th>
<th>Usual starting intravenous or subcutaneous doses and intervals</th>
<th>Usual starting oral doses and intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codeine</td>
<td>120 mg</td>
<td>200 mg</td>
<td>N/R</td>
<td>N/R</td>
<td>1:2</td>
<td>Bolus: 0.1 mg/kg every 2-4 hr Infusion: 0.03 mg/kg/hr</td>
<td>0.5-1 mg/kg every 3-4 hr</td>
</tr>
<tr>
<td>Morphine</td>
<td>10 mg</td>
<td>30 mg (long term) 60 mg (single dose)</td>
<td>Bolus: 5-8 mg every 2-4 hr Infusion: 1.5 mg/hr</td>
<td>1:3</td>
<td>Immediate release: 0.3 mg/kg every 3-4 hr Sustained release: 20-35 kg: 10-15 mg every 8-12 hr 35-50 kg: 15-30 mg every 8-12 hr</td>
<td>15-20 mg every 3-4 hr</td>
<td></td>
</tr>
<tr>
<td>Oxycodeone</td>
<td>N/A</td>
<td>15-20 mg</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.1-0.2 mg/kg every 4-8 hr</td>
<td>5-10 mg every 4-8 hr</td>
</tr>
<tr>
<td>Methadonea</td>
<td>10 mg</td>
<td>10-20 mg</td>
<td>0.1 mg/kg every 4-8 hr</td>
<td>5-8 mg every 4-8 hr</td>
<td>1:1:5-1:2</td>
<td>0.1-0.2 mg/kg every 4-8 hr</td>
<td>5-10 mg every 4-8 hr</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>100 µg (0.1 mg)</td>
<td>N/A</td>
<td>Bolus: 0.5-1 µg every 1-2 hr Infusion: 0.05 µg/kg/hr</td>
<td>N/A</td>
<td>N/A</td>
<td>Bolus: 25-50 µg/kg every 1-2 hr Infusion: 25-100 µg/kg/hr</td>
<td>N/A</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>1.5-2 mg</td>
<td>6-8 mg</td>
<td>Bolus: 0.02 mg every 2-4 hr Infusion: 0.006 mg/kg/hr</td>
<td>1:4</td>
<td>0.04-0.08 mg/kg every 3-4 hr</td>
<td>2-4 mg every 3-4 hr</td>
<td></td>
</tr>
<tr>
<td>Meperidineb</td>
<td>75-100 mg</td>
<td>300 mg</td>
<td>Bolus: 0.6-1 mg/kg every 2-3 hr Infusion: 0.3 mg/hr</td>
<td>1:4</td>
<td>2-3 mg/kg every 3-4 hr</td>
<td>Bolus: 50-75 mg every 2-3 hr Infusion: 0.3 mg/hr</td>
<td>100-150 mg every 3-4 hr</td>
</tr>
</tbody>
</table>

Doses refer to patients older than 6 months of age. In infants younger than 6 months, initial doses per kilogram should begin at approximately 25% of the doses per kilogram recommended here. Higher doses are often required for patients receiving mechanical ventilation. All doses are approximate and should be adjusted according to clinical circumstances.

*aMethadone requires additional vigilance because it can accumulate and produce delayed sedation. If sedation occurs, doses should be withheld until sedation resolves. Thereafter, doses should be substantially reduced and/or the dosing interval should be extended to 8 to 12 hours.

*bMeperidine should generally be avoided if other opioids are available, especially with long-term use, because its metabolite can cause seizures.

N/R, not recommended; N/A, not available

Suggested Opioid Conversion “The rough (!) guide”

**Clinical Context**
Intravenous Morphine

Incomplete Cross Tolerance: Decrease dose by (0 - 33% -) 50% (or more?)

1 : 1
3 mg PO Oxycodone = 3 mg PO Morphine

1 : 2
1 mg IV = 2 mg PO

1 : 3
1 mg IV = 3 mg PO

1 : 4
1 mg IV = 4 mg PO Morphine

1 : 5
1 mg IV Hydromorphone = 5 mg IV Morphine

1 : 3.5
1 mg IV = 3.5 mg PO

1 : 40
25 mcg IV Fentanyl = 1000 mcg [1 mg] IV Morphine

Infants 1 : 13-20
25 mcg IV Fentanyl = 325 - 500 mcg [0.3 - 0.5 mg] IV Morphine

1 : 7
7 mg IV Morphine = 1 mg IV Hydromorphone

7 : 1
7 mg IV Morphine = 1 mg IV Hydromorphone

40 : 1
1 mg [1000 mcg] IV Morphine = 25 mcg IV Fentanyl

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