Pain scales for infants, young children and preschool children. Each of these scales is a separate item so you can copy and paste them in a larger size for bedside use.
Treating Postoperative Pain

Remember – titrate all drugs to effect – if the child is still awake and crying give more opioids!

Epidural or Regional Nerve Block

Epidural opioid dosing: Morphine – 3-10ug/kg/hr, Fentanyl 1-2 ug/kg/hr, hydromorphone 2-5 ug/kg/hr

Epidural or continuous regional block local anesthetic dosing

Maximum dose for children

< 6 mo old Bupivacaine 0.3mg/kg/hr, lidocaine 1mg/kg/hr
> 6 mo old Bupivacaine .4-.6 mg/kg/hr, lidocaine 1.5mg/kg/hr

Ropivacaine use same max dose as for bupivacaine

Continuous IV narcotic infusion

<table>
<thead>
<tr>
<th>Drug</th>
<th>Loading Dose</th>
<th>Continuous Infusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>0.05 mg/kg</td>
<td>0.01-0.04 mg/kg/hr</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>1 ug/kg</td>
<td>0.2-1ug/kg/hr</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>10ug/kg</td>
<td>0.5-2ug/kg/hr</td>
</tr>
</tbody>
</table>

Bolus to achieve analgesia and start infusion at lower rate. If inadequate analgesia, rebolus with ½ first dose and increase rate by 25%.

Mix 1mg/kg morphine in 100ml bag of NS and run at 1-4 ml/hr.

PCA – children 6 or older must be able to understand the concept, may not be suitable if language is a problem. Same lockout times as adults 6-10 min

<table>
<thead>
<tr>
<th>Drug</th>
<th>PCA Dose</th>
<th>Basal Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>10-30 ug/kg</td>
<td>5-30 ug/kg/hr</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>0.25-1ug/kg</td>
<td>0.25-1ug/kg/hr</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>2-6 ug/kg</td>
<td>1-3 ug/kg/hr</td>
</tr>
</tbody>
</table>

Loading dose same as for continuous infusion

Basal rate may improve sleep

Intermittent opioid dosing – less optimal pain control than those mentioned above

Morphine: starting dose 0.05-0.1 mg/kg IV, repeat dosing every 5-10 minutes until effective analgesia established. Use this as basis for IV q2-4° dosing schedule.

Fentanyl: starting dose 0.5-1 mcg/kg IV, repeat dosing every 5-10 minutes until effective analgesia established. Use this as basis for IV q1-2° dosing schedule.
Adjuvant Medications – improve pain control and decrease opioid use

Acetaminophen – does have opioid sparing effects. Oral load 30mg/kg PO then 10mg/kg PO Q4hrs. Rectal load 40mg/kg PR then 20mg/kg PR Q4hrs. Max dose 90-110 mg/kg/day.

Ketorolac 0.5mg/kg Q 6hrs IV

Tramadol – weak mu agonist 1-2 mg/kg PO Q 6hrs Max dose 400mg Q day

T3 – acetaminophen with codeine. Codeine dosing 0.5-1.0mg/kg/dose PO q 4-6hrs (dose limited by maximum daily dose of acetaminophen). Remember 25% of patients can’t convert codeine to its active formulation. Codeine will not be effective in these patients.

Oxycodone – 0.05-0.15mg/kg/dose PO Q 4-6hrs (daily dose limited by maximum dose of acetaminophen if in a combined form)

Reversal Agents

Naloxone – TITRATE TO EFFECT! – use small doses give every 1-2 min until respiratory rate is adequate. Dose 0.25-1ug/kg IV

Flumazenil 5-10 ug/kg IV titrate to effect