## Laboratory Animal Analgesic Ladder

Pain intensity	Analgesic approach
Mild	<ul> <li>Single-agent therapy acceptable</li> <li>NSAIDs, Local anesthetic infiltration or Opioid agonist- antagonists (e.g. butorphanol)</li> </ul>
Moderate	<ul> <li>Consider multimodal analgesia</li> <li>NSAIDs + Adjuncts such as Local anesthetics, Partial opioid agonists (buprenorphine), Tramadol, Alpha-2 agonists (dexmetdetomidine), NMDA antagonists (ketamine)</li> </ul>
Severe	<ul> <li>Multimodal analgesia recommended</li> <li>Advanced analgesic techniques recommended – epidural administration of local anesthetics +/- opioids &amp; constant rate infusions</li> <li>Full mu-opioid agonists (e.g. morphine, hydromorphone, fentanyl) + Adjuncts such as NSAIDs, Local anesthetics, Alpha-2 agonists, Antiepileptic drugs, NMDA antagonists</li> </ul>

\*Adapted from the World Health Organization's Pain Relief Ladder

Presented by Dr. Heidi Shafford at Beyond Buprenorphine: 21st Century Pain Medicine for Laboratory Animal Veterinarians Feb 9 – 10, 2009