Drug	Equianalgesic Doses (mg)[1,3,4]		Approximate Equianalgesic 24 hr Dose (Assumes Around-the-Clock Dosing)[g]		Usual Starting Dose (Opioid-Naive Adults) (Doses NOT Equianalgesic)	
	Parenteral	Oral	Parenteral	Oral	Parenteral	Oral
Morphine (immediate-release tablets, oral solution, injection)	10	30	3-4 mg q 4 h	10 mg q 4 h	2.5 mg q 4 h[50]	10 mg q 4 h (acute or chronic pain)[41,51,j] 2-10 mg q 4 h (hospice)[5]
Controlled-release morphine (e.g., *MS Contin*)	NA	30	NA	30 mg q 12 h	NA	*MS Contin* (U.S.): 15 mg q 12 h[29,j]
Hydromorphone (*Dilaudid*)	1.5-2	7.5-8	0.5-0.8 mg q 4 h	2-4 mg q 4 h	0.2-0.5 mg	Product labeling for hydromorphone recommends a starting dose of 0.2 mg to 1 mg IV every two to three hours. Some institutions use even lower doses of parenteral hydromorphone (e.g., 0.2 mg to 0.5 mg every two hours as needed). One regimen starts opioid-naive patients at 0.2 mg IV every two hours as needed for mild or moderate pain, with the option in moderate pain to give an extra 0.2 mg after 15 minutes if relief is inadequate after the first 0.2 mg dose. For severe pain, 0.5 mg IV every two hours as needed is used initially. In adults <65 years of age, the 0.5 mg dose can be repeated in 15 minutes if relief is inadequate, for a maximum of 1 mg in two hrs.
Oxycodone (e.g., *Roxicodone* [U.S.], *Oxy IR* [Canada], also in *Percocet*, others)	NA	20-30	NA	5-10 mg q 4 h	NA	5-15 mg q 4-6 h (acute or chronic pain)[42,43] (**Product labeling**) 5-10 mg q 8-12 h[14] or 5 mg q 4-6 h[41](chronic noncancer pain) (**Guidelines**)
Controlled-release oxycodone (*OxyContin*[U.S.], *OxyNeo*[Canada])	NA	20-30	NA	20-30 mg q 12 h	NA	10 mg q 12 h[9,j]
Hydrocodone (in *Norco* [U.S.], others)	NA	30-45	NA	10-15 mg q 4 h	NA	5-10 mg q 4-6 h (moderate to moderately severe pain)[45] 5-10 mg q 4-12 h (Chronic noncancer pain)[14,41]
Codeine[n]	100-130	200	30-50 mg q 4 h	60 mg q 4 h	10 mg q 3-4 h[52]	15-60 mg q 4 h (mild to moderately severe pain)[46] 15-30 mg q 4-12 h (chronic noncancer pain)[14,41]

Drug	Equianalgesic Doses (mg)[1,3,4]		Approximate Equianalgesic 24 hr Dose (Assumes Around-the-Clock Dosing)[g]		Usual Starting Dose (Opioid-Naive Adults) (Doses NOT Equianalgesic)	
	Parenteral	Oral	Parenteral	Oral	Parenteral	Oral
Methadone (*Dolophine*)	Variable	Variable	**For opioid-tolerant patients only**.[14] The conversion ratio of methadone is highly variable depending on factors such as patient tolerance, morphine dose, and length of dosing (short-term versus chronic dosing). Because the analgesic duration of action is shorter than the half-life, toxicity due to drug accumulation can occur with just a few doses.[35] For conversion methods, see http://www.cancer.gov/cancertopics/pdq/supportivecare/pain/HealthProfessional/page3. Some experts recommend that only those with substantial experience with its use should prescribe methadone.[39,55]			
Meperidine (*Demerol*)	75	300	Should be used for acute dosing only (short duration of action [2.5 to 3.5 hours] and neurotoxic metabolite, normeperidine).[1] Avoid in renal insufficiency and use caution in hepatic impairment and in the elderly (potential for toxicity due to accumulation of normeperidine).[1,16-18,55] Seizures, myoclonus, tremor, confusion, and delirium may occur.[1]			
Fentanyl (See footnote "l")	0.1	NA	All noninjectable fentanyl products are **for opioid-tolerant patients only (i.e., taking 60 mg or more of morphine or its equivalent daily for at least 1 week)**. Do **not** convert mcg for mcg among fentanyl products (i.e., patch, transmucosal lozenge [*Actiq* (U.S.)], buccal tablet [*Fentora*], nasal spray [*Lazanda* (U.S.)], sublingual tablet [*Abstral*]). See specific product labeling (U.S.: Drugs@FDA; Canada: Health Canada Drug Product Database) for dosing. Patch product labeling recommendations (e.g., switch patients **from** oral morphine 60 to 134 mg daily or its equivalent **to** fentanyl 25 mcg/hr patch) are conservative.[63,64] Therefore, the use of this conversion **from the patch to another opioid** can lead to overdose, and should **not** be done.[63,64] Some experts use a conversion factor of oral morphine 60 mg = fentanyl patch 25 mcg/hr in patients with chronic cancer pain, round up or down based on patient factors, and available patch sizes, and clinical judgement.[56] In the U.S. "intermediate" patch strengths not studied in clinical trials (37.5 mcg/hr, 62.5 mcg/hr, 87.5 mcg/hr) are available for use during conversion or titration for patients who would normally be converted/stepped up to the 50 mcg/hr, 75 mcg/hr, or 100 mcg/hr patch, but for whom these doses might be too high.[65] The intermediate-dose patches may be more expensive than using generic versions of two standard strength patches (e.g., 12.5 mcg/hr patch plus 25 mcg/hr patch), but using a single patch is preferred to reduce the risk of medication errors.[66]			
Mixed Agonist/Antagonists: mu receptor antagonist (or mu-neutral)/kappa receptor agonist[1,40]	Parenteral morphine 10 mg is approximately equal to parenteral **pentazocine** 60 mg, oral pentazocine 180 mg, parenteral **butorphanol** 2 mg, and parenteral **nalbuphine** 10 mg.[49] The analgesic efficacy of these drugs is limited by a dose ceiling. Furthermore, they are contraindicated for use in patients receiving an opioid agonist because they can precipitate withdrawal and increase pain. They also pose a risk of psychotomimetic effects.[1]					