

Glide Health Services San Francisco, CA



Presented by

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Glide Health Services San Francisco, CA

- GHS is a nurse-managed center in the Tenderloin District of San Francisco. We provide comprehensive care including: primary, acute and behavioral health care to homeless and disenfranchised residents.
- GHS was created as a partnership between Glide Foundation, UCSF School of Nursing, and Dignity Health.



Course Objectives

- Review Chronic Pain
- Discuss Challenges in Providing Chronic Pain Management
- Review Different Pharmacotherapy Options for Chronic Pain Management
- With Use of Cases, Discuss How to Use Different Medications



Incidence of Chronic Pain



What is Pain?

"An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.

Pain is always subjective. Each individual learns the application of the word through experiences related to injury in early life."



(IASP, 2009)

What is Pain?

- "To hear about pain is to have doubt, to experience pain is to have certainty" (Scarry)
- "Pain is whatever the person says it is" (McCaffrey)
- Three Types of Pain: Neuropathic, Nociceptive and Mixed
- Nociceptive subtypes = superficial and deep somatic and visceral



Acute vs. Chronic Pain

- Acute pain is brief, localized, often sharp in quality, likely to resolve and the treatment is biomedical. Acute pain lasts the expected amount of time it takes for tissues to heal.
- Chronic pain differs in its duration, it lasts longer than 3 months, it is often diffuse, not localized, and varies in its quality, more likely to be dull, burning or 'electric'. Chronic pain is unlikely to resolve and treatment is often multi-modal. Chronic pain lasts beyond the expected period of healing.



Potential Problems in Managing Chronic Pain

- Provider Challenges
 - Lack of knowledge regarding chronic pain management
 - Subjective nature of pain
 - Time limitations and constraints in managing chronic pain in the primary care setting



Potential Problems in Managing Chronic Pain

- Patient Challenges
 - High incidence of mental health comorbidities in this population, including personality disorders and substance abuse
 - Establishing 'sufficient pain control'
 - Provider / Patient relationship has potential to being adversarial



Potential Problems in Managing Chronic Pain

- Community Challenges
 - Drug overdose death rates have tripled since the 1990s
 - 3 out of 4 of these deaths are due to prescription pain killers
 - "100 people die each day from prescription drug overdose in the U.S. – more than cocaine and heroin combined"



GHS Chronic Pain Management Program

- Goals of GHS Chronic Pain Management Program
 - Safe, effective, individualized, patient-centered, community-based
 - Accessible
 - An improvement in function, not necessarily reduction in pain scores



Chronic Pain Management

- Multi-Modal Approach
 - Behavioral Health
 - Strength & Agility
 - Education & Support
 - Complementary Care
 - Pharmacology



- Pharmacology
 - WHO Analgesic Ladder
 - Step 1 All Non-Opiate Options
 - Step 2 Opiates for mild moderate pain
 - Step 3 Opiates for moderate severe pain





- Pharmacology
 - WHO Analgesic Ladder
 - •STEP 1: ASA, Acetaminophen, NSAIDS





STEP 1: Aspirin- Antiplatelet, Salicylates

- Dosing: 81, 325, 500, 650 mg, PR alternate dosing
- Half-Life: dose-dependent 0.25hr aspirin, Duration 4-6hr.
- Metabolized: gut, plasma, Liver, CYP450
- Benefits: Stroke prevention, decrease risk of MI fatality.
- Common S/Es: HA, dizziness, increased sweating, nausea.



STEP 1: Acetaminophen (Tylenol)

- Dosing: 325, 500, 650 mg, 120, 160/5mL, 500/15 mL.
 Max dose 3gm/day.
- Half-Life: 2-4hr, Onset of Action <1hr, Duration 4-6hr.
- Metabolized: Liver, CYP450, 1A2, 2E1 substrate
- Benefits: used in combination with other meds to enhance effectiveness, pain relief better with routine administration.
- Caution: Acute overdose can cause hepatotoxicity and is life threatening. January 2014- FDA issued recommendation no >325 mg per dose unit.

STEP 1: NSAIDs

- 1. Ibuprofen (also Ketoprofen, Flurbiprofen, Oxaprozin (Propionic Acids))
 - Dosing: ibuprofen 100, 200, 400, 600, 800 mg. Max dose 3.2gm/day
 - Anti-inflammatory dose: Ibuprofen 600mg qid or 800 mg TID. Give with food.
 - Half-Life: 1.8-2hr, Onset of Action 30-60min, Duration 4-6hr.
 - Metabolized: Liver Primarily, CYP450, 2C9 substrate
 - Benefits: well tolerated
 - Common S/Es: N/V, Abd Pain, Pruritus.



- 2. Naproxen (Aleve OTC)
 - Dosing: 250, 375, 500 mg.
 - Anti-inflammatory dose: 500 mg BID. Give with food.
 - Half-Life: 12-17 hr, Onset of Action 60min, Duration
 <7hr
 - Metabolized: Liver Primarily, CYP450, 2C9 substrate
 - Benefits: well tolerated, Naproxen safest CV profile.
 - Common S/Es: N/V, Abd Pain, Pruritus.



- 3. Diclofenac and Indomethacin (Acetic Acids)
 - Dosing: 25, 50, 75 mg BID-TID
 - Half-Life: Diclofenac 1.9hr, Onset of Action 1hr, Indomethacin 4.5hr, Onset of Action 30min, Duration 4-6hr
 - Metabolized: Liver Extensively, CYP450
 - Benefits: Topical formula available, Indomethacin good for acute inflammation.
 - Common S/Es: high risk for GI side effects, avoid Indomethacin in elderly.



- 4. Nabumetone (nonacidic)
 - Dosing: Nabumetone 500, 750 mg QD-BID with renal dosing.
 - Half-Life: Nabumetone 24hr, Onset of Action several days.
 - Metabolized: Liver primarily, CYP450, prodrug 6MNA.
 - Benefits: Low risk of GI/renal reactions, Can dose once daily 1000 mg.
 - Common S/Es: possible GI.



- 5. Meloxicam and Celecoxib (Mobic & Celebrex)
 - Dosing: Meloxicam 7.5, 15 mg, Celecoxib 50, 100, 200, 400 mg.
 - Half-Life: Meloxicam 15-20hr, Time to Peak 4-5hr, Celecoxib 11.2hr, Time to Peak 3hr.
 - Metabolized: Liver Extensively, CYP450, 2C9.
 - Benefits: low risk for side effects.
 - Caution: Celecoxib cannot be used by people with Sulfa allergy.



- Pharmacology
 - WHO Analgesic Ladder
 - STEP 1: Anti-neuropathic Agents: TCAs, Antidepressants, Antileptics, Lidocaine, Capsaicin, Antispasmodics





STEP 1: Tricyclic Antidepressants

1. Nortriptyline and Amitriptyline

- Dosing: Nortriptyline 10, 25, 50, 75 mg; Amitriptyline 10, 25, 50, 75, 100, 125, 150 mg qHS dosing.
- Half-Life: Nortriptyline 18-44hr, Onset of Action 1-3wk, Time to Peak 7-8hr; Amitriptyline 10-26 hr, Time to Peak 4hr.
- Metabolized: Liver primarily, CYP450, 2D6 substrate.
- Benefits: Neuropathic pain.
- Common S/Es: Anticholinergic Amitrip>Nortrip, weight gain.

- STEP 1: Serotonin/Norepinephrine Reuptake inhibitors
- 1. Duloxetine and Venlafaxine [off label] (Cymbalta & Effexor)
 - Dosing: Duloxetine 20, 30, 60 mg, Venlafaxine 25, 37.5, 50, 75, 100 mg.
 - Half-Life: Duloxetine 12hr, Time to Peak 6hr; Venlafaxine 11hr, Time to Peak 2-5hr.
 - Metabolized: Liver primarily, CYP450, 2D6.
 - Benefits: once daily dosing, Fibromyalgia.
 - Common S/Es: Nausea, dry mouth, constipation.

STEP 1: Antileptics- GABA Analogs

- 1. Gabapentin, Pregabalin
 - Dosing: Gabapentin 100, 300, 400, 600, 800 mg, Pregabalin 25, 50, 75, 100, 150, 200, 225, 300 mg.
 - Half-Life: Gabapentin 5-7hr; Pregabalin 6.3hr, Time to Peak 1.5hr.
 - Metabolized: none, CYP450.
 - Benefits: Neuropathic pain, nerve trauma, FDA approved treatment for Fibromyalgia.
 - Common S/Es: drowsiness, sedation, weight gain.

- 2. Carbamazepine, Topiramate [off label] (Tegretol & Topamax)
 - Dosing: Carbamazepine 100, 200, 300, 400mg, Topiramate 25, 50, 100, 200mg.
 - Half-Life: Carbamazepine 12-17hr, Onset of Action 25-65hr; Topiramate 21hr, Time to Peak 1-4hr.
 - Metabolized: liver, CYP450.
 - Benefits: Neuropathic pain, Lancing pain, Topiramate off label- substance abuse treatment.
 - Common S/Es: drowsiness, HA, Topiramate- weight loss.

STEP 1: Topical Analgesics

- 1. Lidocaine and Capsaicin
 - Dosing: Lidocaine patch 5%, gel 2, 3, 4%, Capsaicin
 0.025, 0.075% cream.
 - Half-Life: unknown.
 - Metabolized: unknown, CYP450.
 - Benefits: Topical, no safety monitoring.
 - Common S/Es: skin irritation.



STEP 1: Antispasmodics, Muscle Relaxants1. Baclofen, Cyclobenzaprine (Flexeril),Methocarbamol (Robaxim)

- Dosing: Baclofen 10, 20 mg, Cyclobenzaprine 5, 10 mg, Methocarbamol 500, 750 mg.
- Half-Life: Baclofen 4hr, Onset of Action 3-4d; Cyclobenzaprine 18hr, Onset of Action 1hr; Methocarbamol 1-2 hr, Onset of Action 30min.
- Metabolized: Liver, CYP450.
- Benefits: effective in acute muscular flare.
- Common SEs: CNS depressant- avoid operating machinery, Cyclobenzaprine similar to TCAs.



- Pharmacology
 - WHO Analgesic Ladder
 - STEP 2: Codeine, Hydrocodone, Meperidine, Tramadol, Buprenorphine





STEP 2:

- 1. Codeine (Tyco #3, #4)
 - Dosing: 300/30, 300/60. NTE 360mg/d of codeine. Dose >60mg rarely more effective or well-tolerated in opioid-naïve pts. Give with food.
 - Half-Life: 2.5-4hr, Onset of Action 30-60min, Duration 4-6hr.
 - Metabolized: Liver Primarily, CYP450, Morphine metabolite.
 - Benefits: Elixir available.
 - Common S/Es: N/V, Abd Pain, Pruritus.



2. Hydrocodone (Vicodin, Norco, Lortab, etc)

- Dosing: 5/300, 5/325, 10/325, etc
- Half-Life: 3.8-4.9hr.
- Metabolized: Liver Extensively, CYP450, Morphine metabolite.
- Benefits: Elixir available.
- Common S/Es: N/V, lightheadedness, constipation, pruritus.



- 3. Oxycodone* (Percocet, Roxicet, Oxycodone, etc)
 - Dosing: 5/325, 7.5/325, 10/325, 5, 10, 15, 20, 30.
 Give with food.
 - Half-Life: 3.5-4hr, Onset of Action 10-15min, Duration 3-6hr.
 - Metabolized: Liver Extensively, CYP450, active metabolite.
 - Benefits: Stronger, elixir available.
 - Common S/Es: More, including: somnolence, asthenia, xerostomia, dysphoria/euphoria, nervousness, insomnia.



- 4. Tramadol (Tramadol, Ultram, Ultram ER)
 - Dosing: 50; 100, 200, 300 ER. NTE 400mg/day or 300mg/day in elderly.
 - Half-Life: 6.3-7.9hr, Onset of Action 1hr, Duration 9hr.
 - Metabolized: Liver Extensively, CYP450, active metabolites.
 - Benefits: Not officially an opiate, not well known among drug-seekers.
 - Common S/Es: CNS stimulation, Asthenia, Flushing, Insomnia, seizure risk; serotonin syndrome with concurrent SSRI.



- 5. Meperidine (Demerol) NOT Commonly Rx'd
 - Dosing: 50, 100; 10/mL; SC, IM, IV.
 - Half-Life: 2.5-4hr, Onset of Action 10-15min, Duration 2-4hr.
 - Metabolized: Liver, CYP450, toxic metabolite.
 - Benefits: Very effective used in ER often.
 - Common S/Es: Diaphoresis, hypotension, tachycardia, bardycardia, anxiety, tremor, urinary retention.



- 6. Buprenorphine (Buprenex)
 - Dosing: 300mcg IM/IV q6-8hr, May repeat initial 300mcg dose x1 after 30-60min; Max: 300mcg/dose IV, 600mg/dose IM.
 - Half-Life: 20-44hr, Onset of Action 10-30min, Duration 6-8hr.
 - Metabolized: Liver Extensively, CYP450
 - Benefits: New
 - Common S/Es: Vertigo, Miosis, Hypotension, Hypoventilation.



- Pharmacology
 - WHO Analgesic Ladder
 - STEP 3: Morphine, Oxycodone, Methadone, Fentanyl, Hydromorphone, Oxymorphone, Levorphanol





STEP 3:

- 1. Morphine (MS Contin, Kadian, Roxanol, etc)
 - Dosing: MS Contin 15, 30, 60, 100, 200 ER, Kadian 10, 20, 30, 40, 50, 60, 70, 80, 100, 130, 150, 200 ER; PO, SC, IM, IV, INJ; Dose q8-12hr.
 - Half-Life: 2-4hr, Onset of Action 30min, Duration 8-24hr.
 - Metabolized: Liver, GI Tract; CYP450, Active metabolite.
 - Benefits: Long-Acting, Easily Available
 - Common S/Es: Confusion, Pruritis, Anorexia, Peripheral Edema, Dyspnea, Depression, etc.



- 2. Oxycodone (Oxycontin)
 - Dosing: 10, 15,20, 30, 40, 60, 80 ER, Dose q12hr.
 - Half-Life: 4.5hr, Onset of Action 10-15min, Duration <12hr.
 - Metabolized: Liver Extensively; CYP450, Active metabolites.
 - Benefits: Long-Acting
 - Common S/Es: Confusion, Dyspepsia, Anxiety, Fever/Rigors, etc.



- 3. Methadone (Methadose, Dolophine)
 - Dosing: 5, 10; PO, SC, IM, IV; Dose q8-12hr. Full analgesic effect takes 3-5days.
 - Half-Life: 8-59hr, slow release from liver and other tissues, Onset of Action 30-60min, Duration 4-8hr.
 - Metabolized: Liver; CYP450; chronic dosing may induce own metabolism.
 - Benefits: Long-Acting, Easily Available, Inexpensive, Soln Available.
 - Common S/Es: N/V, lightheadedness, sedation, QT Prolongation, etc.



- 4. Fentanyl (Duragesic)
 - Dosing: 12, 25, 50, 75, 100 mcg/hr. Dose q72hr.
 - Half-Life: 17hr, Time to Peak gradual increase from 24-72hr.
 - Metabolized: Liver; CYP450
 - Benefits: Long-Acting, Transdermal, Harder to Abuse.
 - Common S/Es: Anorexia, Local Rxn, Urinary Retention, Tremor, Hallucinations, etc.



- 5. Hydromorphone (Dilaudid)
 - Dosing: 2, 4, 8; 1/mL; PO, SC, IM, IV. Dose PO q3-4hr.
 - Half-Life: 2.5hr, Onset of Action 15-30min, Duration 4-5hr.
 - Metabolized: Liver; CYP450.
 - Benefits: Rectal Suppository Available.
 - Common S/Es: HA, Flushing, Muscle Spasms, Hyperhidrosis, etc.



- 6. Oxymorphone (Opana, Opana ER)
 - Dosing: 5, 10; 5, 7.5, 10, 15, 20, 30, 40 ER. Dose ER q12hr. Give 1hr before or 2hr after meals.
 - Half-Life: 7.3-11.3hr, IR duration 4-6hr, ER duration 12hr.
 - Metabolized: Liver Extensively; CYP450, Active metabolite.
 - Benefits: Long-Acting (Kaiser).
 - Common S/Es: Somnolence, HA, Anxiety, Abd Pain, etc.

Musculoskeletal Pain

- NSAIDS
- Muscle Relaxants
- Opioids
- Antidepressants
- Tylenol/ASA

Neuropathic Pain

- TCAs
- Antileptics
- Gabapentin/Pregabalin



Opioid Conversion Tools:

Equianalgesic Doses for Opioid Analgesics Used for the Treatment of Chronic Pain							
	Dose (mg) Equianalgesic to Morphine 10 mg IM°		Half-Life	Duration			
Drug	PO	IM	(hr)	(hr)	Comment		
Morphine	20-30 ^b	10	2-3	2-4	Standard for comparison		
Morphine CR	20-30	10	2-3	8-12	Various formulations are not bioequivalent		
Morphine SR	20-30	10	2-3	24			
Oxycodone	20		2-3	3-4			
Oxycodone CR	20		2-3	8-12			
Hydromorphone	7.5	1.5	2-3	2-4	Potency may be greater (eg, IV hydromorphone:IV morphine = 3:1, rather than 6.7:1 during prolonged use)		
Methadone	20	10	12-190	4-12	Although a 1:1 ratio with morphine was used in a single- dose study, there is a change with repeated administration, and a large dose reduction (75%-90%) is needed when switching to methadone		
Oxymorphone	10 (rectal)	1	2-3	2-4	Available in rectal and injectable formulations		
Levorphanol	4	2	12-15	4-6			
Fentanyl			7-12		Can be administered as a continuous IV or SubQ infusion; based on clinical experience, 100 mcg/hr is roughly equian- algesic to morphine 4 mg/hr		
Fentanyl transdermal system			16-24	48-72	Based on clinical experience, 100 mcg/hr is roughly equi- analgesic to morphine 4 mg/hr. A recent study indicates a ratio of oral morphine:transdermal fentanyl of 70:1 (the recommended converting ratio was 100:1).		

CR = controlled-release; IM = intramuscular; IV = intravenous; P0 = oral; SubQ = subcutaneously; SR = sustained-release

*Studies to determine equianalgesic doses of opioids have used morphine by the IM route. The IM and IV routes are considered to be equivalent and IV is the most common route used in clinical practice.

Although the PO:IM morphine ratio was 6:1 in a single-dose study, other observations indicate a ratio of 2-3:1 with repeated administration. Adapted from reference 29.

http://www.globalrph.com/narcoticonv.htm

Participation in the GHS Chronic Pain Management Program

- General Guidelines for **Participation**:
 - Complete History and Physical
 - Obtaining & Reviewing prior medical records
 - Mental health assessment including their risk for concerning behaviors
 - No initiation of opiates at first visit and typically not for at least 30 days from initial meeting
 - Attend orientation meeting
 - Be willing to commit to engaging in some movement/strengthening activities
 - If opiates are considered a treatment option, they are initiated after the above activities are completed and always on a trial basis



GHS Chronic Pain Management ProgramPain Management Agreement

GLIDE HEALTH CLINIC PAIN MANAGEMENT AGREEMENT	Pstient Information – Place Sticker bers Name: DOB; MR# Date:	Informed Consent
The purpose of this agreement is to provent misenderstandings a pain management or other medical conditions. This agreement v with laws regarding controlled pharmacouticals. This contract di- medication activities that may reduce your pain experience and in	bout certain medicines you will be taking for will help both you and your provider comply so verifies your agreement to participate in mprove your quality of life.	
I, and Polism NameProvider Name	have decided together to	
substance for management of pain or other medical condition.		
MEDICATION INSTRUCTIONS	S AM CR WEEK/MONTH	
 I agree that this medication will only be used by systelf ar I will not share, soli or trade my medication with anyone. I will safeguard my medication from loss or theft. Lost or If I run out of the medication because I increase the dese v Clinic will not reful the prescription carly. 	ad as it is prescribed. stolen medicine will not be replaced, without talking to the provider, Glide <i>k</i> icalth	
 I will not seek controlled substances from other medical pre- t understand that there will be no refille on my medication / agree to share my complete medications history in order / J will follow through on referral appointments made with a 	Behavioral	
 I agree to bring all unused pain medication to every office I understand pharmacy records may be reviewed to confin I agree to leave a unito specimen for drug leating upon req be considered a contract infraction. 	Expectations	
 I understand that I must keep my solecduled appointments drop-in appointments for medication retills if I miss a sole i agree to participate in the following non-medication activ I understand if I broak this agreement, my provider may stop 	for inclusion duled appointment. vites to address my chronic pain: prescribing these pain-control medicines.	
The prescriber has explained that the above medications have poss Comments:	sible side effects and may be addictive.	
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Chronic Pain Management Principles

- Have and use a protocol
- Have a team approach / population-based care
- Have consultation available
- Opiates as a trial (ex. 3 months)
- Have an exit strategy
 - Consider tapering off if opiates are not improving function / quality of life / pain



GHS Chronic Pain Management ProgramBenefits of the Program

- For Patients
 - Improved overall functioning
 - Decreased stress / increased support
- For Providers
 - Increased comfort level with pain management
- For Community
 - Safer community with reduction in overdose / misuse / diversion



Susan:

39yo female presents for follow-up visit.

Chief complaint: Chronic L shoulder pain (from mild labrum tear) no longer controlled with NSAIDS, Ice/Heat, PT exercises. Pain particularly bad in PM after working in retail during the day.

PMHx: Overweight, BMI 30; ETOH use 1-2 glasses of wine per night; Hx of sexual assualt

Social Hx: lives in apt in Mission District with husband and extended family; married; one child – 20yo

Stephen:

68yo male presents for follow-up visit to monitor chronic pain treatment.

Chief complaint: chronic knee pain secondary to DJD. Currently takes Norco 10/325 qid prn. Reports pain at 7/10 despite medications, PT, acupuncture.

PMHx: HTN – uncontrolled, DM – A1C 8.4, depression, smoker – 42pack year hx, hx of crack abuse

Social Hx: lives in SRO in Tenderloin, hx of 8yr incarceration – released 2002; single



Joe:

48yo male presents for monthly chronic pain follow-up visit.

Chief complaint: chronic low back pain secondary to multiple traumas in past; current regimen of MS Contin 60mg bid, Percocet 10/325 tid prn, Baclofen 20mg tid prn not working. Pain at 9/10. Pt unable to comfortably perform ADLs anymore. *PMHx:* HTN, Hyperlipidemia, depression, Hx of IVDU – no use x10yr.

Social Hx: Homeless – staying in shelters or on the street; in process of applying for disability; single



Robert:

48 yo male presents for follow up visit.

Chief Complaint: Bilateral hip pain

- *PMHx:* Dx with Avascular necrosis bilat hip 15 years ago with right-side repair. Current treatment Gabapentin 1200 mg TID, Cymbalta 60 mg qHS. Working as a chef and on his feet for 10 hours at a time and states not able to tolerate. States current meds make his very sleepy and not taking all doses due to side effects
- Social Hx: Has 4 children and working extra shifts in order to support family.



QUESTIONS?

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