

Learner Objectives

 \checkmark Review Updates and Changes on the MassPI Pain Pocket Tool

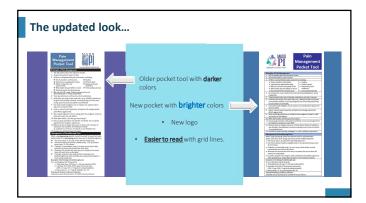
✓ Describe pharmacological updates in detail
• Using some case examples

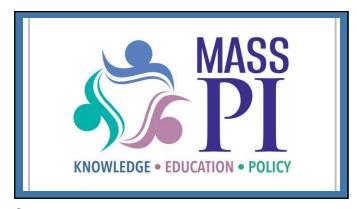
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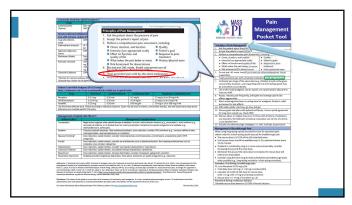
Disclosures

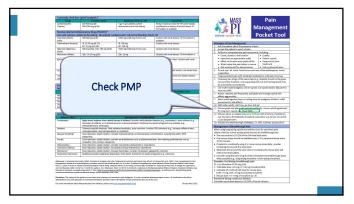
• Nothing to disclose

Commonly Used N	on Opiced Analg	esko				MASS	
Drug	Average Dece	Dooling	Maximum Dase in 24h	Side Difects	Comments	Pain	
Acataminophen (Tylenel)	325-500 mg	40	4 g (45 g in partiants with low	Minimal, if any, side effects	Reduce maximum date 50-75% with hepatic insufficiency or history of alcohol	Management	
(yess)	500-1000 mg	66	showers and in the olderly)		abuse. If sortaninghen is available.	Pocket Tool	
Non Staroidal Anti-I	Phomotory Drugs	(NSAIDS) Extra	with extreme cartion	in the skilety). Thrombotic o	ardiouscular risk and GI bleeding risk for all.	Principles of Pain Management	
Choine Magnecium Tricalicylate (Tellisate)	500-1000 mg	0-12h	5000 mg	Lower incidence of GI bleeding, minimal anti- olatelet activity	Caution with renal disease.	Ask the patient about the presence of pain Accept the patient's report of pain Perform a commenterative gain associatest, including:	
(Motein & others)	200-400 mg	4.66	2400 mg	"see below	Caution with runal disease.	Onset, dustice, and location	
Naproven (Naproven)	500 mg initial, 250 mg subsequent	6.78	1500 mg	"yes below	Caution with renal disease,	Effect on function and Response to prior quality of life treatment What makes the pain better or worse History/physical exam	
Naturations (Relates)	500.750 mg	8-12h	2000 mg	"see below	Caution with ranal disease.	Risk Assessment for abuse/misuse Do not use I.M. route, Anold concurrent use of becondamplisms. Anold insperidism.	
Ketosolac (Toradel)	50 mg IV initial, 15-50 mg subsequent	6h	150 mg first day. 120 mg thereafter	"yes below	In aldely, 50 mg starting doze, 15 mg thereafter. Use restricted to 5 days. Caution with renal closure	 Treat persistent pain with by the clock medications Ordinarily two drugs of the same class (e.g., NSAIDs) should not be given concurrently; however, one long-acting and one short- 	
(Calabres)	100-300 mg	12%	200.400 mg	Lorew insidence of solvense Glaffacts. Ranal tenicity	Contraindinated in sufficientials allarge. No platelet effects. Eak of cardiovaccular events. Use Invest doce possible.	acting opioid may be preceibed concentrately 7. Use multi-model analgesis: Use an opioid, non-opioid and/or adjuvant to improve reliet 8. Assess reassess only frequently, anticipate and manage coloid	
			Dail Medianism A	nalgerics		tide effects aggressively	
(Ultran, Ultran ER)	23-30 mg ER: 100, 200, 300 mg	ER: 4246.	in the elderly)	researche, conficient, codation.	Opend and addition of persons and compleophrise respitable. Lowers seisons threshold. Trinate by 25-50 mg every 3-5	Next spinish against have no setting above the analyzoide, strade to relief and assess for side effects With older soluts, start low go slow, but go!	
Tapentadol (Nacyeta)	50-100 mg after titration	4-65	600 mg/day	Naucea, dizzinezz, zedation.	Opinid and inhibitor of screpinephrine registate.	Discuss goals and plans with patient and family. Use an opinid agreement for long term opinid use. Masse, above or relates may accor in those with a history of	
* Monitor for commo	adverse effects Ci	ulceration and	bleeding, decreased p	latelet aggregation, and rena	I toicity.	 Mosse, abuse or relapse may occur in those with a history of substance use disorders; the hallmarks include: 	
Management of	Opicid Side Effe	cts				a) computaive use, b) loss of control, c) use despite harm	
Adverse Effect				ageraerz Considerations		15. Include non-pharmacologic strategies. Management of Recolithy and Pain	
Constigation		Begin bowel regimes when opicid therapy is initiated, include a mild stimulant laurine (e.g., Senna, Caccars) = stool surfaces (e.g., Solase) at his or in divided doors as resolves are applicate. Perioberal majorital artisection are available.				When using languacting opioids around-the-clock for persistent pain,	
Sedation	Tolerana typically develops. Valid andatives/anisolytics, doze reduction; consider CHS stimulants (e.g., increase self-ine initia, methylphenidate, destreamphatemine or modeled)					obtain order for a <u>short-acting</u> opioid (wocue) for bruikthrough pain. The rescue dose is 10-15% of the 24h total daily dose. Out rescue doses should be available every 1.2% parenteral	
Neura/Yorking	Done reduction	on, opinid retal	ion; consider metacles	ramide, proshlorperazine, co	opolamine patuls, SHT ₂ antagonists.	doses every 15-30 minutes. # Epitient is consistently using 3 or more rescue doses daily.	
Province	Door reduction	en, opinid retat	ion; consider an anthi	stanine auch as diphenhydra	nine .	consider increasing the around-the-clock dase.	
Milluonations	Door reduction	n, opisid retat	ion, consider neuroleg	tics (haloperido) or risperido	ne)	 Whenever the around-the-clock dose is increased, the rescue dose will need to be recalleded. 	
Confusion Owlinion	Door reduction	n, opisid retat	ion, reunsieptic therap	w Paloperidol, risperidone)		Consider using the same drug for both scheduled and	
Montherus	Door reduction	en unimid retail	ion, increase fluid intel	e servide deserves bad	lufen.	breakthrough doors when possible (e.g., long-acting morphine + short-acting morphine).	
Respiratory Depressi	s Sedation pre	cedes respirat	ory depression. Hald saline for final concent	opioid. Give low door nation ration of 0:04 mg/ml. Nacat-	Examples: Oral dealing: breakthrough pain Pt. is an Marphine CR 30 mg q12h.		
Waferences at 1). American Psin Soci Management: Besult Fain (v. 2.28/5).	ny (2008). Principles of an intenticoplina	of Analgecic Us ry Concursus Se	e in the Treatment of Ac unmit. Pain Med. 3). Ne	ute Pain and Cancer Pain, 6th e Sould Comprehensive Cancer N	d. 2). Fithman et al. (2015). Competencies for Pain del 2). Fithman et al. (2015). Competencies for Pain del 2015. Competence Guideline: Adult Canear	 Total dely door; (30 mg s 2 = 60 mg morphise;24b) Calcalani 10 to 155 of 14h date for receive dose. (30% = 6 mg, 15% = 9 mg thort acting morphise) Receive dose = 6 - 9 mg of morphise (1 - 2h. Parestrad design continueus influénce Calcalate more dose based on 25 - 30% of hourly inficience. 	

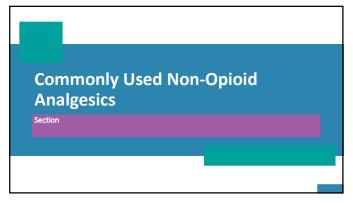


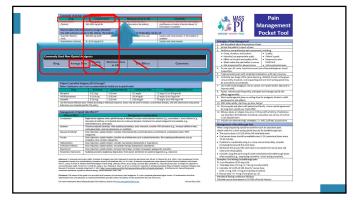


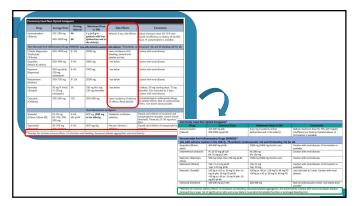


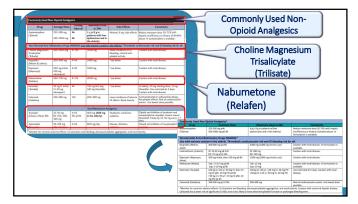


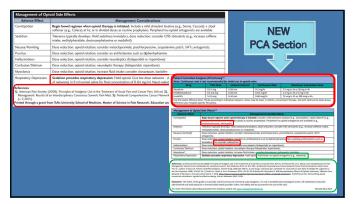


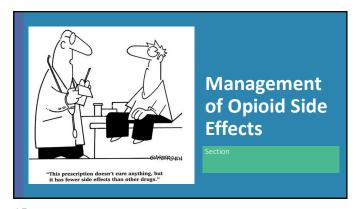












culate orphine ate ner- drome up equit mg = 45 m ide the down g ing di face ca smplet rmal Fe	the total 24h: 50 mg q 4h s opioid on e sphore 7.5 m setion. X and 7.5 mg g hydromosy total daily d joen per day, vided by 6 do loulated doose e cross tolese ontanyl (Duras	dose of p = 180 mg quianalges g = 30 mg cross multi hone in 2- ose of the see = 7.5 of new op- nee; tibub sesic patch	ic chart. morphise) ply h) new opioid by the number		S88 eg/Osh tocata new op morphine) Set up equation 180 mg = _X 180 mg = 7.5 Divide the tot day (43 mg at	ocal 2th dose sold on equian on, and cross in ing if daily dose of vided by 6 dos ided dose of ne ide up as need gesic Chart	of patient's elgest cha willely the new ay as + 7.5 mg ne apoid to ed.	opical regimen, (morphine 30 mg q dh rs. (shtild/broughone 7,5 mg = 30 mg pical by the number of dieses given per
morphine q 24	b. Divided in	to 6 dose	= 8.5 mg oal morphine or pproximate doses.		Rootine	Meng	30 mg	7.5.15 mg po III gill pm. 1.4 mg IV g5-4h pm. Ell tels/cap available for agend tolerant. Invold use in CKD.
*Opioid Equ (opioids with Opioid		dose)	Starting Dase for Occord Name Adults		Freight C	6.1 mg (130 mg)	n/a	Several formulations exist outside IV: Should only be used for opioid sidenate: Sourcel, incorp., intransal, sublingual, transformal. For patch, 25 mg is equal for appeals, 50 mg of oral morphise s246.
Morphine	10 mg	90 mg	Start at 2.5-10 mg po for incrediate release (IR). Controlled release (IR) available.	L	HTSPECUSORS EX		-	Available as ER cap (13%) and ER 585 (13%). Not for use in opioid naive.
Pydramaryhane	1.5 mg	Zing	Start at 1-2 mg po IR. 0.2-1 mg IV. CR available.		HOROnorphone	15 mg	7.5 mg	2 mg pe iit (1,4mg q4-6) p mg N (0.2-Lmg q3-4) poli (II tab) for optoid tolerum).
Cheycodone	N/A	20 ng	Start at 2.5 - 5 mg po IR CR available.		Methodone			Consult with pain specialist before prescribing, song half-life results in accumulation, Baseline DKS.
Sentanul	(100 pg)	N/A	Start at 12 μg, 25 kg patch is equal to approx. 50 mg of enal marphine o 246. For coloid tolerant CNU.		Ow/ADDISHOW!	n/a n/a	20 mg	Simple IR CS 15 mg o4-5h or C. CR. 148,14p for opined fatherwis. Simple IR CS 18 mg o4-5h or CR.
Methodone			Consult with pain specialist before prescribing, long half. life results in accumulation.	- "	Online California	734	to out	100/vap available. Most be taken an empty shomack.
Chomorphone	1 mg	10 mg	Start at 5 mg po IR. CR					
Hydrocodone	N/A	Miles and	analable, Most be taken on an engity stomach. Start at 2.5 -5 margo, CR		HIGHOcedone + acetaminophen or ibuprofes	1/4	Storag	5 mg pa (5 55 mg nd 8h pro); max 4g acetaminophen/24h; max 5 talo, 3g 8upnolen/24h.
			available.	a	Ow/CODONE +	1/2	20 mg	5 mg pa (2.5:32 mg q 6:66 pm); max
*Combinatio	n Opioid E	lrugs (h	ive ceiling dose)	1	Tagentadol	10	100 me	50 300 marca (Riotech: ER: 50 marco
Hydrocadone - aspirin, acatamirophen, e	N/A	30 mg	Available as 5, 75, or 18 ing hydrocodone with scetaminophen, aspirin or					q12h. Max IR 600 mg/day, Max ER 500 mg/day. Ms. opioid agonist and noneginephrine respisake inhibition.
(Vicade, Jorse), Vicaproles)			buproter (4 g/24h colling dose with scataminophers)		TwMADel		130 mg	50 mg po IR (25-300 mg q4-8h-pm); ER: 200 mg po q34h. Max 800-400 mg (300 mg in the elderly), Mu
Onycodone (Percocat, Tyles)	NA	30 ng	or 10 mg orycodone with acetaminophes (4 g/24h ceiling dose with					opioid agonist and seretonin and nonspinephrine respitable inhibition. Lowers seture threshold.
*Equianalgenic do according to india	set are approxis	note. Use the	acetaminophery is lowest effective dose Titrate be lower in eldorly and with OSA.	- ·	"Equianalgesic dos according to indivi Burdey, abstructs	dual response.	less no	the lowest effective does. Titrate be lower in elderly, concomisent d creat insufficiency.

		0.00			Orag	Utes	Starting Dose	Dose Fange	Comments	
Drug	Uses	Starting Dose	Dose Range	Comments				oleytics		
ubopents Servents	Neuropathic pain	100-100 mg po 6d. Increase by 100-300	300-3600 rigiday in free divided down	Adjust dose for renal dydunction. Can cause drownings, No thrap-thus	Gabapertin (Neurontin)	Neuropethic pain	100-300 mg po RO. Increase by 200-300 mg g3d	ik: 300-1300 mg/day in three-divides doors, EE-900- 3600 mg/00	Adjust dose for remail dysfunction. Can cau drawsness. May require PDMP reporting.	
	Diabetic peripheral	rig q 3 days	50 600 mostry	interactions Similar to subspectio, other more speid	Pregatalin (syrice)	Meuropathic pain, Peat- herpetis neuralgia, Fibromysigia	150 mg poin 3-3 divided doses (depending an indication)	50-600 mg/day (depending on indication)	Similar to galaperoin, often more rapid response than galaperoin; Schedule V controlled substance.	
Pregabalin (Ișrica)	neuropathy. Post herpetic reunalpia.	2-3 divided down (depending on response th	(depending on	response than gatapentin, often more capital response than gatapentin; Schedule V		Antidepressets (often use lower doses to treat pain than to treat depression) Tricutal: Antidepressets				
	Fibrorryalgia.			Androides	Neurosaffor ours.	1021 months	State 100 matter to or	Sale effects Dry mouth chowshess.		
	Antidoressants (r	often use lower doses	to treat pain than to I	reat depression)	(tavi)	Post hereotic neurolgia,	(32 mg or less for platesty). Titrate deser	divided (pale effects often limit doze)	discovers, constigution, urmany retention	
		Tricyclic An	lidepressants			Fibromyelgie	many few days or larger to minimize side efforts	MAK BOSES	confusion. Obtain baseline DKG for historicardiac disease.	
entriptyline (Elavil) iostriptyline	Neuropathic pain	25 mg po hs (10 mg or less for elderly) Timte dose	75-150 mg po lis	Amin'nys den has grantest side effect profile. Dry mouth, dionosinos, dizzimen, comelgadou, tribary stericlos, corelazion. Olidan baseline BoG for history of cardiac disease.	Northytes (Fameler)	Neuropathic pain, Post-horpetic neurolgia	10-25 mg pa hi Titrate dose every 3-7 finn	Up to 100 mg hs pade effects often limit dose)	Side effects came as anitripolytine, to a test degree.	
(Elmotor)		very few days to minimize side effects.				Selective Seroto		Respirate Inhibitor (SSNR) A	etidepressant	
(Nopranie)		manue sacroeca.			(Cymbalta)	Diabetic neuropaths, Chronic musculoskeletal pain, Fibramyalgia	30:30 mg May 18:ste up in 3-2 ments	Sp to 130 mg in divided doses	Should not use with MiliOs. Consider low starting dose (33 mg) for patients for who bidesidility is a sensery.	
	elective Serotonin :	and Norepinephrine I	Reuptake Inhibitor (SS	NRI) Antidepressant	Ventafasine (Offeser 191)	Olabetic neuropaths	37.5-75 mg/des 68, strade 75 mg weekly	75-225 mg/km/ER	Should not use with MAO's. Available as It formulation.	
						Conticosteroids				
Dulosetine Cymbulta)	Diabetic neuro- pathy, chronic musculoskeletal pain.	30 mg	60 mg once daily sustained release	Should not use with MACIs. Consider lower starting close for patients for whom tolerability is a concern.	(Decadios)	Specificand compression, cancer-related poin, joint pain	6 EE mg pochty up to 4xday, Doors vary per indication	Minimal effective dose	High doos therapy should not exceed 72h. May improve appetrs.	
restatarine Ellesori	Neuropothic pain	37.5 mg daily or twice daily - situte up over 3.1 nowles	150 mg -225 mg/day	Available as R and CR formulations. Should not use with MADIs.	Prodriscos	Cancer-related pain, joint pain	5-30 mg/day, then taper; doses vary based an indication	Minimal effective dose	For cancer pain, continue treatment until side effects outweigh benefit.	
								seathetic		
Desamethasone Decadroni	Spiral cord compression, bory	6-8 mg po q 8-12 h 10-20 mg N q 6h	Minimal effective dose	High dose therapy should not exceed 72h. Mar improve appetite.	Fepical Lidoculne	Postherpetic seuralgia, Localized pain	Patch: 1-3 patches over painful area(s) Clintment/got/swam: spoly 3-4ntey	1-3 patches 11h on and 11h off	Parsh may be cut to fit painful area)d. Pla only on intact skin. Do not apply heat ando parsh.	
	reets, joint pain.	in an age of the						esmodics		
rednisone	Spinal cord compression, bony metastans,	5-10 mg po daily or bid	Minimal effective dose	For cancer pain, continue treatment until side effects outweigh benefit. Also for joint pain and 8.A. pain.	Baccelor	note specer scaling pain,	S III mg po bid-qid	60-120 mg/day	Caution in renal insufficiency.	
	recibes.	Local A	suthatic	tor just past and K.A. past.	cycol	5	Sing poiled pre Fibromaligie: Sittling soils	18 mg po 60; 25-30mg ER qf;	Sedation.	
	Lawrence Co.				7777		2-4 mg periph 12h	10x to 24.56 mg/day	Can prolong QT interval, sedation,	
idodern Patch Topical Lidocaines	Post Hopetic Neuralgia	1-3 patches over painful areaso	1-3 patches 12h on and 12h off	Patch may be cut to fit painful areass. Place only on intact skin.	71	V Activity	Specificity: 2 mg po hs pm	221-21-200	hepstosicity, hypotemion (alpha-2 agonist).	
		Other /	idjiriant			A				
acloles (Lioresal)	Muscle sparticity	S-10 mg po tid-qid	80-120 mg po in 24h	Caution in renal insufficiency.	Notes:	V V				
	et of this guide is to p ions should be admini socured for the use of		of commonly used analysis of or licensed allied healt	sics. It is not a complete pharmacological is provider orders.						

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Patient Case 1

• JS is a 75 year old, 67 kg female who is admitted to the hospital post-op total right knee replacement. Labs consist of Normal bmp including Cr 0.65, Lfts are WNL. She has no know allergies. Her medications consist of metformin 1000 mg twice daily, loratidine 10 mg daily, hydrochlorothiazide 25 mg daily and citalopram 10 mg daily. You check the PDMP and find out that she hasn't filled any opioids since a 5 day supply of oxycodone in February 2023. She denies alcohol and illegal drug use. As you assess her pain she reports a 7/10 pain in her right knee. Which multimodal pain regimen would you recommend for JS?

Pa	tient Case 1
1)	Acetaminophen IV 1gm q8h, oxycodone 10 mg q6h, gabapentin 300 mg tid prn for mild pain
2)	Acetaminophen 1 gram po q8h, ketorolac 15 mg q6h prn mild pain, oxycodone 5-10 mg q6h prn moderate pain, gabapentin 100 mg tid, hydromorphone 0.2-0.4 mg q3h prn severe pain.
3)	Acetaminophen 1 gram po q8h prn mild pain, ketorolac 30 mg q6h prn moderate pain, Hydromorphone 0.2-0.4 mg q3h prn severe pain.
4)	Oxycontin 10 mg Bid, oxycodone 5 mg QID. Acetaminophen 1000 mg po q8h, gabapentin 600 tid and ibuprofen 600 mg q6h.
,	

Patient Case 1

- JS continues to be in severe pain on your assessment the next day. She reports 10/10 pain and has been requiring hydromorphone 0.4 mg q3h scheduled and at times asks for hydromorphone after 2 hours. You reach out to the covering clinician who orders a PCA (patient controlled analgesia). Which of the following is an appropriate order for a PCA?
- 1) Hydromorphone 0.2 mg bolus lock out interval 15 minutes, continuous basal of 0.1 mg with hourly limit of 1.5 mg
- 2) Hydromorphone 0.2 mg bolus, lock out interval 6 minutes, continuous basal of 0 with hourly limit of 0.5 mg $\,$
- 3) Hydromorphone 0.2 mg bolus, lockout interval 10 minutes, continuous basal of 0 with hourly limit of 1.2 mg $\,$

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Patient Case 2

- DM, 70 year old male, seen in the outpatient clinic for treatment of neuropathy due to spinal stenosis in preparation for L2-L5 Laminectomy. DM has no known drug allergies. BMP and LFTS are WNL. He takes lisinopril 5 mg daily, omeprazole 20 mg daily, fluoxetine 30 mg daily, and metformin 500 mg bid. You check PDMP, DM takes no opioids. Which medication would be best to start for neuropathic pain in DM?
- 1) Oxycodone 10 mg tid prn pain.
- 2) Tramadol 100 mg tid prn.
- 3) Gabapentin 600 mg QID.
- 4) Gabapentin 100 mg tid, titrate up based on tolerability and response up to 600 mg tid

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