

Pharmacy Resources

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Chief Resident: Quality + Safety

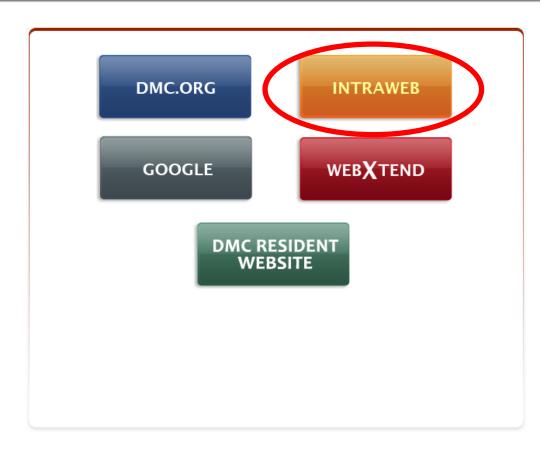
Pharmacy Resources

- eTenet "Pharmacy TPP"
 - Stands for Pharmacy Tenet Physician Portal
 - Only visible to physicians, is has the most of the things you might need but some information is missing
 - https://portal.etenet.com/sites/DMC/Departments/Pages/PharmacyT PP.aspx
- eTenet DMC site Pharmacy page * Recommended*
 - How to see a 2nd way which is what pharmacist's see
 - THESE DIRECTIONS START ON SLIDE 9
 - https://portal.etenet.com/sites/DMC/Departments/Pharmacy/Pages/default.aspx
 - I have included directions for both just in case there is variation for different users



1) Open internet explorer









eTenet User ID:		
Password:		Log In

Forgot your password? Reset it here.

User Account Locked? Unlock it here.

New User? Register here.

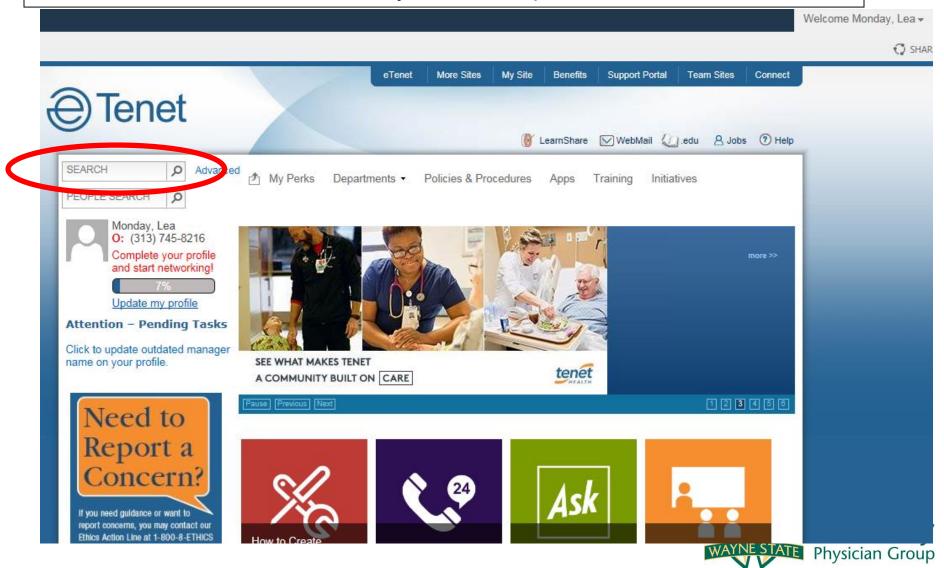
New Credentialed Physician? Register here.

- Looking for a physician or a hospital? Search here
- Search for a Career with Tenet
- Find investor information for Tenet

For help, contact the Tenet Service Desk at 800-639-7575, Option 9, Option 1.

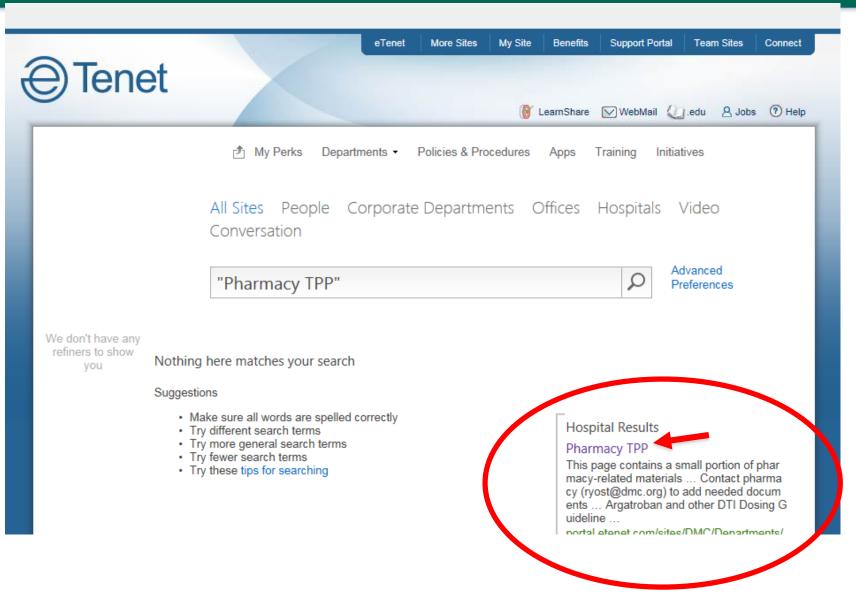
National Site: Home page has no visible useful DMC specific information

First I will show you how to see the physician portal (Pharmacy TPP) Have to use search box "Pharmacy TPP" with quotes



Have to use "Phramacy TPP" with quotes







Welcome to Pharmacy TPP

Drug information database: Lexicomp

Pharmacy TPP

This page contains a small portion of pharmacy-related materials. Contact pharmacy (ryost@dmc.org) to add needed documents.

LexiComp P&T Website MAPS Anticoagulants Infectious Diseases and Antimicrobials Critical Care and ICU Anticoagulation Reversal Guideling 2017 Antibiogram AFib/AFlutter Pharm Conversion Argatropan and other DTI Dosing Guideline Antimicropian communary & Criteria Conversion Between Anticoagulants Antimicrobial Renal Dosing Guidelines Alcohol Withdrawal Guidelines (ICU only) Enoxaparin and Fondaparinux Monitoring Guide Bacterial Identification Analgesia, Delirium, Sedation Guideline Heparin Nomogram Carbapenem Resistant Enterobacteraciae Guideline Hypertensive Crisis Agents Heparin High Dose Nomogram Community/Nosocomial Infxns for Inpts Hypertensive Crisis Management Adult Guide Heparin Hypothermia Nomogram Community Acquired Pneumonia (algorithm) Hypertonic Saline Storage and Dispensing Guide Heparin induced thrombocytopenia HIT Guide HAP/VAP Guideline Insulin Infusion Adjustment Table LVAD Anticoagulation Guideline Febrile Neutropenia Insulin Infusion Titration Guide Neuraxial Intervention and Anticoagulant Guide Skin & Soft Tissue Infection (SSTI) Insulin Nomogram Algorithm Oral Anticoagulant Therapeutic Use Guideline Surgical Prophylaxis Paralytics (NMBA) Guideline Sexually Transmitted Infection Guideline Peri-op Bridge Therapy Guideline Severe Sepsis Protocol Prevention of Venous Thromboembolism Guide Staphylococcus aureus Bacteremia Standard IV Infusions/Titration Guideline Thrombolytics Dosing/Reversal Guideline C Difficile Guideline Use of Parenteral Anticoagulants **HIV Renal Dose Adjustments** Warfarin Dosing Nomogram DMC Influenza Page Diabetic ketoacidosis (DKA) Guideline Adult ICU Electrolyte Protocol

Three main categories
AntiCoag, ID, and Critical care / electrolytes

Currently opiate conversion is missing, I requested it to be added

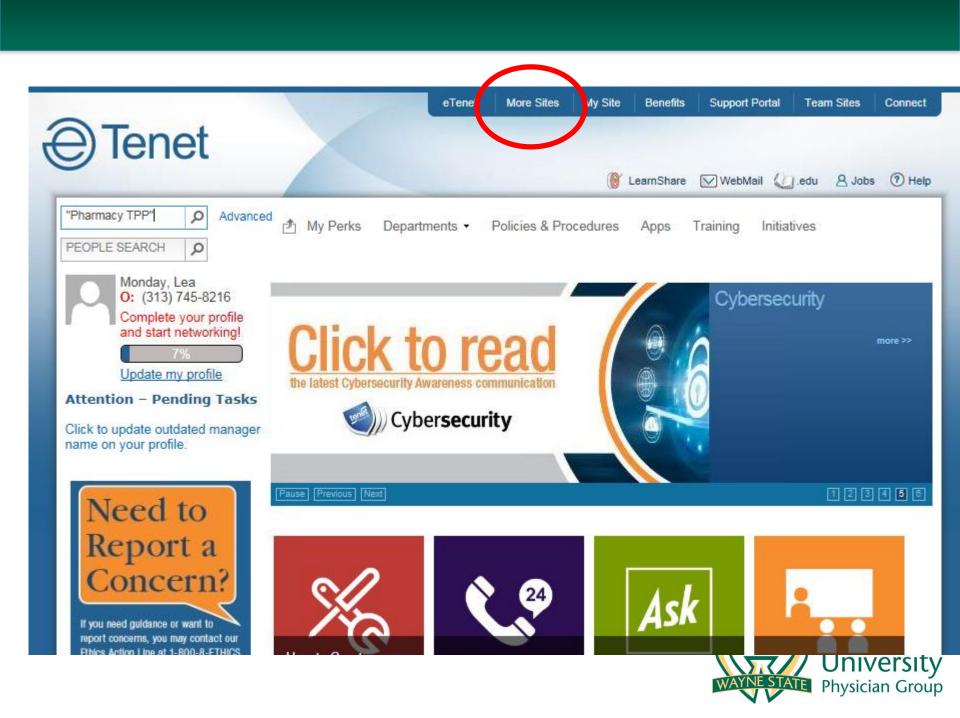


Adult non-ICU Electrolyte Replecement GL

NOTE:

- The following slides are how I suggest you access the information
 - Reason: only a fraction of the pharmacy resources are on "Pharmacy TPP"
 - Most is the same but some important things are missing (ex: opiate conversion)
- follow these directions from the etenet home page









LearnShare

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8 10



PEOPLE SEARCH

Lists

AllActiveAlerts

Surveys

Policies & Procedures

Accounts Payable

Administrative

Clinical Operations

Clinical Research

Compliance

Corporate Finance

Corporate Security

CorporateSourcing-

MRM

Government Programs

Human Resources

Advanced

My Perks Departm

All other Tenet sites are lis

Alphabetical list of Acute (

Items marked with an

Internal (Intranet) Hospital Sites

Only sites published through the Tenet system are available.

Public (Internet) Hospital Sites *

Public (Internet) Corporate Site *

Other Tenet Sites *

Select a Hospital/Facility

Abrazo Community Health Network

Baylor Scott & White Medical Center - Sunnyvale

BHS San Antonio Corporate Brookwood Baptist Med Ctr

Carondelet Health Network

Coastal Carolina Hospital

Coral Gables Hospital Delray Medical Center

Desert Perional Medical Center

DMC Market Corporate

Joelore Hespital of Manteca

Doctors Medical Center of Modesto

East Cooper Medical Center

Florida Medical Center

Fountain Valley Regional Hospital and Medical Center

Good Samaritan Medical Center

HDMC Holdings, LLC DBA Hi-Desert Medical Center

Hialeah Hospital

Hilton Head Hospital

John F. Kennedy Memorial Hospital

Lakewood Regional Medical Center

Los Alamitos Medical Center

Nacogdoches Medical Center North Shore Medical Center

Palm Beach Gardens Medical Center

Palmetto General Hospital Piedmont Medical Center

Placentia-Linda Hospital Saint Francis Hospital

WAYNE STATE

YNE STATE Physician Group

Go



Go

Go

DMC page within eTenet

Click to update outdated manager name on your profile.



IS Customer Service Portal

We welcome your feedback on how we are meeting your IS Service delivery needs!

Human Resources

Finance & Payroll

Quality & Safety

Nursing

Training

Pharmacy

Physician Portal	Directory Search - Xtend
Midas Incident Reporting System	Pager Backup Information
Parking and Badges Site	Tool Time
HI and TPP FAQ	Tips to navigate Policies and Procedures
Department Leaders for HI Content	DMC Commonly Used Abbreviations
DMC EAC Content	



Ethics & Compliance

- > Quality, Compliance & Ethics
- > Standards of Conduct
- > The Eight Areas of Compliance
- > Ethics Action Line

HR & Payroll

- > HR Forms
- Payroll Forms
- Employee Handbook
- > Verification of Employment

Education & Training

- > Saba Login
- > Tenet Learning & Development
- > Cerner Train Domain Access
- .edu Login Problems
- > UPTIC Learning Journey



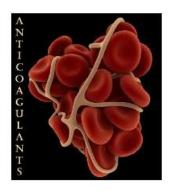


Lexicomp[®]













Heparin Nomogram (Hypothermia, High dose)

HIT Guidelines

Anticoagulation REVERSAL Guidelines

Oral Anticoagulant Therapeutic Use Guidelines

PK Dosing Calculator

Antimicrobial Renal Dosing Guidelines

Vancomycin Pocketguide

Adult ICU Electrolyte Protocol

Adult non-ICU Electrolyte Replecement Guideline

Albumin Use Guidelines

Has pictures, Has more information including pain and anesthesia section and other sections not part of the etenet physician portal



Few examples: converting anticoagulation

DMC Adult Safety Guidelines for the Conversion Between Anticoagulant Agents

General Considerations:

- Patients should <u>NEVER</u> be administered more than one of the following: heparin, enoxaparin, fondaparinux, apixaban, edoxaban, rivaroxaban, or dabigatran due to the potential adverse interactions between these agents.
- Precautions using anticoagulation in patients with epidural catheters or undergoing spinal procedures:
 - Refer to Neuraxial Guidelines for Adult Patients on Anticoagulant and Antiplatelet Medications
- If a patient is admitted for a new venous or arterial thromboembolism and has received apixaban, dabigatran, enoxaparin within 12 hours or edoxaban, rivaroxaban, or fondaparinux within 24 hours prior to admission:
 - Consider contacting hematology immediately for a recommendation.
 - If heparin is deemed necessary, start IV heparin infusion <u>WITHOUT</u> a bolus dose, and considering lower initial dose if aPTT elevated.

Table 1: Converting from Parenteral to Oral

		То	Apixaban	Apixaban Dabigatran Rivaroxaban		Edoxaban	Warfarin	
ĺ		Argatroban IV	S	Start oral anticoagula	nuous infusion	Refer to <u>DMC algorithm for</u> <u>management of HIT</u>		
	Ε	Enoxaparin Subcut	Start oral antico	pagulant 0-2 hours b	efore next scheduled dose of	Start edoxaban at the time		
	F	Fondaparinux Subcut	otal oral array	SQ age		of the next scheduled dose parenteral anticoagulant	Start warfarin immediately. Discontinue parenteral agent	
		Heparin IV	Start oral anticoa	agulant upon discont	tinuation of continuous infusion	Start edoxaban 4 hours after discontinuation of continuous infusion	when INR ≥ 2 for at least 2 days.	

Table 2: Converting from Parenteral to Parenteral (treatment doses)

	To	Argatroban IV	Enoxaparin Subcut Q12h or Daily	Fondaparinux Subcut Daily	Heparin IV
	Argatroban IV		Discontinue argatroban and give 1 st SQ parenteral dose immediately		Discontinue argatroban and start IV heparin immediately
	Enoxaparin Subcut Q12h			Start fondaparinux 12 hrs after last enoxaparin dose	Start IV heparin 12 hrs after last enoxaparin dose (no heparin bolus)
rom	Enoxaparin Subcut Daily	Refer to <u>DMC</u> algorithm for		Start fondaparinux 24 hrs after last enoxaparin dose	Start IV heparin 24 hrs after last
ш	Fondaparinux Subcut Daily	management of HIT	Start enoxaparin 24 hrs after last fondaparinux dose		enoxaparin dose (no heparin bolus)
	Heparin IV	rin IV Discontinue heparin and give 1 st SQ parenteral dose immediately			



Few Examples: Renal Dosing

MEDICATION INDICATION	CrCl ≥ 50 mL/min	CrCl 30-49 mL/min	CrCl 10-29 mL/min	CrCl <10 mL/min or HD
ANTIBACTERIALS				
Cefepime I.V.	2 gm Q8hr	2 gm Q12hr	1 gm Q12hr	1 gm Q24hr or 2 gm post HD
Comment: Extended infusion (3 hour) protocol	•	<u> </u>		
Cefixime P.O.	400 mg q24hr	400 mg q24hr	200 mg q24hr	200 mg Q24hr
Cefotaxime I.V.				
Standard	1 gm Q6hr	1 gm Q6hr	1 gm Q8hr	1 gm Q24hr
Endocarditis/CNS Infection	2 gm Q4hr	2 gm Q4hr	2 gm Q8hr	2 gm Q24hr
Cefoxitin I.V.	2 gm Q6hr	2 gm Q8hr	2 gm Q12hr	1 gm Q24hr
Ceftaroline I.V.				
Standard	600 mg Q12hr	400 mg Q12hr	300 mg Q12hr	200 mg Q12hr
MRSA Infection (non-skin, non urine)	600 mg Q8hr	400 mg Q8hr	300 mg Q8hr	200 mg Q8hr
Ceftazidime I.V.	2 gm Q8hr	2 gm Q12hr	1 gm Q12hr	1 gm Q24hr or 2 gm post HD
Ceftazidime/Avibactam I.V.	2.5 gm Q8hr	1.25 gm Q8hr	1 gm Q12hr	1 gm Q24hr if not on HD or 1 gm Q48 if on HD
Ceftolozane/Tazobactam I.V. Standard	1500 mg Q8hr	750 mg Q8hr	375 mg Q8hr	750 mg x1, then 150 mg Q8hi
Pneumonia	3000 mg Q8hr	1500 mg Q8hr	750 mg Q8hr	1500 mg x1, then 300 mg Q8h
Ceftriaxone I.V.				
CAP or UTI	1 gm Q24hr	SAME	SAME	SAME
CNS Infection	2 gm Q12hr	SAME	SAME	SAME
Other Systemic Infections	2 gm Q24hr	SAME	SAME	SAME
Cephalexin P.O.	500 mg Q6hr	500 mg Q6hr	500 mg Q8hr	500 mg Q12hr
Ciprofloxacin I.V.				
Non-Pseudomonal Infection	400 mg Q12hr	400 mg Q12hr	400 mg Q24hr	400 mg Q24hr
Pseudomonal Infection	400 mg Q8hr	400 mg Q8hr	400 mg Q24hr	400 mg Q24hr
Comment: Give P.O. if pt has functioning GI tract	_	_		
Ciprofloxacin P.O.				
Non-Pseudomonal Infection	500 mg Q12hr	500 mg Q12hr	500 mg Q24hr	250 mg Q24hr
Pseudomonal Infection	750 mg Q12hr	750 mg Q12hr	750 mg Q24hr	500 mg Q24hr
Clarithromycin P.O.	500 mg Q12hr	500 mg Q12hr	500 mg Q24hr	500 mg Q24hr
Clarithromycin XL P.O.	1000 mg Q24hr	1000 mg Q24hr	500 mg Q24hr	500 mg Q24hr
Clindamycin I.V.				
Standard	600 ma Q8hr	SAME	SAME	SAME



Few Examples: electrolyte replacement

Insulin	Hyperaldosteronism	Increased renal amniogeneses	١
Bicarbonate		Sodium retention	ı
Adrenergic agents		Neuromuscular (myopathy,	ı
Mineralocorticoids		Weakness, paralysis, ileus)	ĺ
		Poor catecholamine response	ı

[#] Hypokalemic myocardial effects are exacerbated by Digoxin or Antiarrhythmic therapy; Target Goal: 4-4.8.

Symptomatic hypokalemia or prophylaxis in high risk patient:

Potassium (PO) - Oral Replacement Preferred when Possible/Tolerated

	The state of the s				
KCL LEVEL (MMOL/L)	REPLACEMENT				
3.7 – 3.9 mmol/L	KCL 20 mEq PO x 1				
3.3 – 3.6 mmol/L KCI 20 mEq PO q2h x 2					
3 – 3.2 mmol/L	KCI 20 mEq PO q2h x3				
< 3 mmol/L	KCI 20 mEq PO q2h x4; may use combination of PO and IV if desired. Check				
level 1-2 hours after last dose is administered.					
If both magnesium and potas	ssium low, need to replace magnesium to effectively replace potassium.				

Potassium (IV) - Intravenous Replacement

Peripheral administration: Maximum rate = 10 mEq/hr; Central line administration: Maximum rate = 20 mEq/hr

KCL LEVEL (MMOL/L)	REPLACEMENT			
3.7 – 3.9 mmol/L	KCL 20 mEq IV over 2 hours			
3.3 – 3.6 mmol/L	KCI 20 mEq IV x 2, each dose over 2 hours			
3 – 3.2 mmol/L	KCI 20 mEq IV x3, each dose over 2 hours			
< 3 mmol/L	KCl 20 mEq IV x 4, each dose over 2 hours. Check level 0.5 to1 hour after end			
of infusion.				
If both magnesium and potass	ium low, need to replace magnesium to effectively replace potassium.			

^{**} Use of **enteral** replacement is potentially suboptimal due to questionable absorption (ie. GI surgery or severe hypotension with poor GI perfusion)



^{*} Recheck serum potassium after 80 mEq of potassium is administered 1 to 4 hours after IV or oral administration is complete and prior to additional supplementation.

^{*} Determine serum potassium prior to ordering additional potassium IVPB

Antibiograms

STAPHYLOCOCCUS 2017		CLINDAMYCIN ⁶	ERYTHROMYCIN	LINEZOLID	OXACILLIN ¹²	RIFAMPIN	DAPTOMYCIN	VANCOMY CIN ³	TRIMETH/SULFA ⁶	TETRACYCLINE
ORGANISM										
STAPHYLOCOCCUS AUREUS	MIC ≤ mcg/ml NUMBER OF ISOLATES ⁴	0.5	0.5	4	2	1 ERCENT SUS	1 CEPTIBLE	2	2/38	4
MRSA ¹	10021120				,,,	I SOS	JEI HOLL		1	l
CH	341	80	19	100	0	100	99	100	98	91
DR	337	50	15	100	0	99	100	100	96	90
HUH/HZ	273	56	21	100	0	100	99	100	93	81
HV/SN	91	50	6	100	0	100	99	100	95	92
KCI	47	57	26	100	0	100	100	100	98	89
SN/GR	353	60	21	100	0	100	100	100	92	85
MSSA										
CH	287	82	60	100	100	100	100	100	97	96
DR	219	76	58	100	100	100	99	100	98	93
HUH/HZ	184	72	68	99	100	99	100	100	96	92
HV/SN	104	73	63	100	100	100	98	100	100	91
KCI	36	63	60	100	100	100	100	100	97	100
SN/GR	205	80	61	100	100	100	100	100	99	89
	MIC ≤ mcg/ml	0.5	0.5	4	0.25	1	1	4	2/38	4
STAPHYLOCOCCUS, COAG NEGATIVE ⁴	NUMBER OF ISOLATES ⁵				Di	DOENT OUG	SERTIPLE		•	•
COAG NEGATIVE CH	73	40	27	100	45	ERCENT SUSC	100	100	ı	94
DR	433	50	33	99	46	99	100	100		81
HUH/HZ	215	58	36	99	50	100	100	100		82
HV/SN	46	53	40	100	37	91	100	100		80
KCI	39	74	44	100	28	97	100	100		94
SN/GR	420	50	35	99	50	97	100	100		87
	44				44					

Staphylococci exhibiting resistance to oxacillin should be considered resistant to other penicillins, cephalosporins, carbacephems, and carbapenems. Infections with oxacillin-resistant staphylococci have not responded favorably to therapy with B-lactam antibiotics, carbapenems, and beta-lactamase inhibitor combinations despite apparent in vitro susceptibility of some strains to the latter

- Oxacillin breakpoint is 2.0 for S. aureus and S. lugdenensis and 0.25 for coagulase negative staphylococci (CLSI M100-S26).
- 3. Vancomycin breakpoint is 2.0 for S aureus and 4.0 for coagulase negative staphylococci (CLSI M100-S26). In 2015 we had no VISA isolates.
- Hospitals with less than 30 organisms tested are not included in this report.
- 5. Trimethoprim/Sulfamethoxazole is not tested on coagulase negative staphylococci
- Inducible Clindamycin resistance is included in the %S calculation

Staphylococcus aureus:	% MRSA, ICU vs.	. NON-ICU	
HOSPITAL	% MRSA**		
	NON-ICU	ICU	

S. aureus:	Vancomycln, Dapton	rycin, and Linezolid MIC Distr
Drug	Total	% with MIC (S

Drug	Total	% w	vith MIC (S
		≤ 0.5 µgm/ml	1 µgmi
Vancomycin		4.2%	93.05 3511 iversity
Number ¹	3776	158	
	WAYN	E STATE	Physician Group
			Thysician Group

Opiate Conversions



OPIOID ANALGESICS: DOSING GUIDELINES FOR ADULTS

		Dose is for short-acting drug unless otherwise indicated				
		Equianalgesic Dose* See footnotes for cross- tolerance information¶		Typical Starting Dose§ See footnotes below		
DMC Formulary Products Note: Not all products are available at all sites	Commonly Used Non-Formulary Products (NF)	Oral	Parenteral IV/IM/ SubQ	Oral	Parenteral IV/IM/ SubQ	Comments
morphINE Immediate-release: 2 mg/mL, 20 mg/mL elixir, 15 mg, 30 mg tab Extended-release: Oramorph®SR and MS Contin®15 mg, 30 mg, 60 mg, 100 mg CRtabs	Avinza [®] Kadian [®] rectal suppositories	30 mg	10 mg	15 mg q 4 h	5 mg q 4 h	
codeine 15, 30, 60 mg tab; with acetaminophen 15-300 mg, 30-300 mg, 60-300 mg tabs, 12-120 mg/5 ml elixir.		130 mg	75 mg (NF)	30 mg q 4 h	30 mg (IM/SubQ) q 4 h (NF)	Doses > 65 mg produces constipation and other side effects without improving analgesia.
fentaNYL Duragesic [®] transdermal patches 12, 25, 50, 75, 100 mog/hr.	Actiq [®] (lozenges) Fentora [®] (buccal)	not available	100 to 200 mcg IV or IM	Not for use in opioid-naive patient or acute pain (NF)	50 mcg q 1 h	Duragesic [®] 25 mcg/hr ~ oral morphine 90 mg/day. Patch: onset of action ~16 to 24 hours, applied every 72 hours. Actiq [®] ≠ Fentora [®] ≠ Duragesic [®] ; see package insert for dosing conversion
HYDROmorphone Dilaudid [®] 2, 4 mg tab	Exalgo [®] ER	7.5 mg	1.5 mg	4 mg q 4 h	0.7 mg q 4 h	DMC P&T Committee has determined that 1 mg of parenteral HYDROmorphone is equivalent to 7 mg of parenteral morphine.
HYDROcodone with acetaminophen Norco [®] 5- 325, 7.5-325, 10-325 mg, Hycet 7.5-325 mg/15 ml elixir	Lortab [®] , Vicodin [®]	30 mg	not available	5 mg q 4 h	not available	
meperidine Not approved for pain at the DMC. See <u>DMC Meperidine Criteria for Use</u>	meperidine oral tablets, oral solution	300 mg (NF)	75 mg	not recomme	ended for pain	Avoid use in impaired renal or hepatic function, use of MAOI within the past 14 days, impaired consciousness, or seizure disorder. Contraindicated in sickle cell disease.
methadone Dolophine [®] 5, 10 mg tab; 1 mg/mL and 10 mg/mL elixir.	40 mg tab restricted to authorized addiction treatment facilities	Contact site pain management service for dosing recommendations				Methadone for opioid dependence: Outpatient methadone dose should be confirmed with patient's methadone clinic. Refer to 2 MED 608: Methadone use in patients currently enrolled in a methadone maintenance program.
oxyCODONE Immediate-release: 5, 15, 20, 30 mg tab, 20 mg/mL elixir; with acetaminophen Percocet [®] , Endocet [®] 5-325 mg, 7.5-325, 10-325 mg; with aspirin Percodan [®] 4.5-325 mg tab Controlled-release: oxyCONTIN [®] 10, 20, 30, 40, 60, 80 mg CRtabs	Roxicet [®] oral solution	20 mg	not available	5 mg q 4 h	not available	
	oxymorphone (Opana®, Opana®ER)	10 mg (NF)	1 mg (NF)	NF	NF	
buprenorphine Subutex® 2 mg, 8 mg sublingual tab (not approved as an analgesic) Buprenex® 0.3 mg/mL inj NF = Non-Formulary See page 2 for footnotes	Butrans®(transdermal) Suboxone®, Zubsolv® (buprenorphine- naloxone)	not available	0.4 mg	not available	0.3 mg IM/IV q 6 h	

NF = Non-Formulary. See page 2 for footnotes.





AND MUCH MORE!



Need Help?

- Selecting a drug (antibiotic), dose, or adjusting for renal function?
- 24/7 Clinical Pharmacy Support

- Harper Inpatient Pharmacy
- 313-745-8216

- Detroit Receiving Inpatient Pharmacy
- 313-745-3518



Find this presentation in the Intern Lecture series boot camp area of www.wsumed.com

