

Automatic Substitutions for JDH

All non-formulary agents ordered in the listed classes will be automatically substituted with the **formulary agent (in red)** or product/dose in the 'dispense as' column.

These medication substitutions have prior authorization as approved by the Pharmacy & Therapeutics Committee.

Note: Levofloxacin is Formulary Quinolone. Orders for other quinolones should be reviewed for appropriateness by the Pharmacist and then discussed with the prescriber for possible substitution to levofloxacin.

Acetaminophen

Ordered as:

Dispense as:

Acetaminophen 500 mg	Acetaminophen 650 mg
Acetaminophen 1000 mg	Acetaminophen 975 mg

Clarification order will be written such that combined dose of various medication orders will not exceed 4,000mg (4Gm) of Acetaminophen per day, in order to reduce the potential for liver toxicity (Even lower daily doses such as 2,000mg are suggested in patients on warfarin).

Ace Inhibitors

	Formulary	Formulary	Non-Form.	Non-Form.	Non-Form.	Non-Form.	Non-Form.	Non-Form.	Non-Form.	Non-Form.
Drug	Lisinopril Zestril®	Captopril Capoten®	Benazepril Lotensin®	Enalapril Vasotec®	Fosinopril Monopril®	Moexipril Univasc®	Perindopril Aceon®	Quinapril Accupril®	Ramipril Altace®	Trandolapril Mavik®
Duration	Long-Acting	Short-Acting	Intermed Acting	Intermed Acting	Long-Acting	Intermed Acting	Long-Acting	Intermed Acting	Intermed Acting	Long-Acting
Equiv. Dose	10mg	6.25 mg TID	10mg	5 mg	10mg	7.5mg	4mg	10mg	2.5 mg	2mg

Formulary IV agent conversion to PO

Enalaprilat 1.25mg IV q 6hrs = Enalapril 5mg daily = Lisinopril 10mg daily

Angiotensin Receptor Blocker (ARB's) Equivalency Table

Inpatients ordered non-formulary ARB's will be automatically switched to the corresponding dose of formulary Valsartan (Diovan). The following table may be used as a guide per the Therapeutics Com.

Candesartan (Atacand-®)	Eprosartan (Teveten-®)	Irbesartan (Avapro-®)	Losartan (Cozaar-®)	Olmesartan (Benicar-®)	Telmisartan (Micardis-®)	Valsartan (Diovan-®)
4 mg daily	400 mg daily	75 mg daily	25 mg daily	-----	20 mg daily	40 mg daily
8 mg daily or 4 mg bid	600 mg daily	150 mg daily	50 mg daily	20 mg daily	40 mg daily	80 mg daily
16 mg daily or 8 mg bid	800 mg daily	300 mg daily	100 mg daily	40 mg daily	80 mg daily	160 mg daily

Angiotensin Receptor Antagonist Recommended Substitutions

Combination products such as Hyzaar, Micardis HCT, Avalide, etc, will be converted to the equivalent components. Patients admitted on Hyzaar (50mg Losartan and 12.5mg hydrochlorothiazide tablet) will be converted to the equivalent dose of valsartan 80 mg and hydrochlorothiazide 12.5 mg.

Antacids:**Ordered as:****Dispense as:**

Maalox, Mylanta w or w/o simethicone	Al/Mg/Simthicone
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Antibiotics:**Ordered as:****Dispense as:**

Cephhradine	Cephalexin
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Anti-Fungal – Vaginal**Ordered as:****Dispense as:**

Butaconazole vaginal	Miconazole vaginal	
Clotrimazole vaginal	Miconazole vaginal	

Suggestions: Requires an MD order

1. Uncomplicated Vulvovaginal Candidiasis: Consider Fluconazole 150 mg PO x 1 after an appropriate review for cytochrome P450 3A4 drug interactions

OR

Miconazole Combo Pack : Miconazole 200 mg vaginal suppository daily for 3 days with Miconazole 2% Topical Cream topically to vaginal area BID PRN

2. Severe Vulvovaginal Canidiasis:

Fluconazole 150 mg PO x1 and repeat in 3 days; screen for drug interactions

OR

Miconazole 2% Vaginal Cream 1 applicatorful (5GM) daily for 7 to 14 days

3. Vulvovaginal Candidiasis during Pregnancy: Miconazole 2% Vaginal Cream 1 applicatorful (5 GM) daily for 7 days

Antihistamine**Ordered as:****Dispense as:**

Cetirizine (Zyrtec) 2.5 mg, \geq 5 mg daily	Loratidine 5mg, 10 mg daily
Fexofenadine (Allegra) all doses	Loratidine 10 mg daily

Beta Blocker**Ordered as:****Dispense as:**

Nebivolol 5 mg daily	Metoprolol 50 mg BID
Nebivolol 10 mg daily	Metoprolol 100 mg BID

Bupropion Extended release (Wellbutrin XL) is automatically switched to Bupropion sustained release SR or immediate release (IR):

Ordered as: Bupropion XL**Dispense as:** Bupropion SR or IM

150 mg XL daily	150 mg SR Daily or 75 mg IR BID
300 mg XL daily	150 mg SR BID or 100mg IR TID
450 mg XL daily	200 mg SR Daily or 100 mg IR QID

Calcium Products

Calcium	Product/ mg calcium carbonate	Elemental calcium ++
Calcium Carbonate	Tums-® 500 mg	250 mg
Calcium Carbonate	Oscal -® 1250 mg	500 mg
Calcium Carbonate	Oscal 500 + D-® (Oyster Shell 1250 mg)	500 mg + 200 units of Vit D
Calcium Carbonate susp.	1250 mg/ 5ml	250 mg/ 5 ml

Carbapenem Antibiotics

Ordered as:	Dispense as:
Doripenem (Doribax-®) 500 mg IV q 8 hr	Meropenem 1000 mg IV q 8 hr
Imipenem-Cilastin (Primaxin-®) 2-3 gm/day	Meropenem 1000 mg IV q 8 hr
Meropenem	Meropenem as written

Carvedilol (Coreg-®)

Ordered as:	Dispense as :
Carvedilol extended release ER 10 mg daily	Carvedilol 3.125 mg BID
Carvedilol extended release ER 20 mg daily	Carvedilol 6.25 mg BID
Carvedilol extended release ER 40 mg daily	Carvedilol 12.5 mg BID
Carvedilol extended release ER 80 mg daily	Carvedilol 25 mg BID

Note: In elderly: Consider using lower starting dose of ER when switching from higher dose of IR eg. 25 IR mg bid to Coreg Er 40 mg daily due to higher risk of hypotension using above table

Clindamycin (Cleocin-®)

Clindamycin 600 mg IV q 6 hr	Clindamycin 600 mg IV q 8 hr
Clindamycin 900 mg IV q 6 hr *	Clindamycin 900 mg IV q 8 hr
Clindamycin 900 mg IV q 8 hr **	Clindamycin 600 mg IV q 8 hr

* For PCP, toxoplasmosis, PID in an OB patient .

** Do not interchange with lower dose for PCP, toxoplasmosis, PID in an OB patient or a therapeutic failure at a lower dose.

Colchicine (Colsalide-®)

Ordered as:	Dispense as:
Colchicine 0.5 mg	Colchicine 0.6 mg

Corticosteroids- Inhaled

Fluticasone (Flovent-®) is Formulary; convert all other orders to Fluticasone

Comparative Daily Doses of Inhaled Corticosteroids*

ADULT	LOW DOSE	MEDIUM DOSE	HIGH DOSE
Beclomethasone HFA 80 mcg/puff	2-6 puffs per day	6-10 puffs per day	> 10 puffs per day
Budesonide 200 mcg/dose (Pulmicort Turbuhaler)	1 -2 puffs per day	2-3 puffs per day	>3 puffs per day
Flunisolide 250 mcg/puff (Aerobid, Aerobid-M)	2-4 puffs per day	4-8 puffs per day	> 8 puffs per day
Fluticasone (Flovent)- given bid 44 mcg/puff 110 mcg/puff 220 mcg/puff	2-6 puffs per day 2 puffs per day	3-6 puffs per day	> 6 puffs per day ≥ 3 puffs per day
Fluticasone DPI** 50 mcg/dose 100 mcg/dose	2-6 inhalations per day ---	--- 3-6 inhalations per day	--- >6 inhalations per day

250 mcg/dose (Flovent Rotadisk-®)	---	---	≥3 inhalations per day
Triamcinolone 100 mcg/puff (Azmacort)	4-10 puffs per day	11-20 puffs per day	> 20 puffs per day
Mometasone 220 mcg (Asmanex) Twisthaler	1 inh/ day	2 inh / day	> 2 inh/ day

Corticosteroids- Nasal

Non-formulary:

Switch to Formulary:

Beclomethasone Nasal (Beconase) 1 spray each nostril BID	Fluticasone Nasal (Flonase) 1 spray each nostril Daily
Budesonide Nasal (Rhinocort) 1 spray each nostril daily	Fluticasone Nasal (Flonase) 1 spray each nostril Daily

Factor 7, 8, Humate P

Round doses + / - 10% to the nearest vial size, re-write order per P&T Protocol

Flurazepam (Dalmane) Convert to same dose of Temazepam (Restoril)

Hemorrhoidal ointments

Ordered as:

Dispense as:

Anusol cream	Dibucaine ointment
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Histamine 2 Receptor Antagonists

Non-Formulary

Formulary

Ordered as:

Dispense as:

Cimetidine (Tagamet®) 300 mg po qid	Ranitidine 150 mg po BID
Cimetidine (Tagamet®) 300 mg po bid	Ranitidine 150 mg po Daily
Cimetidine (Tagamet®) 800 mg po qhs	Ranitidine 300 mg po HS
Famotidine (Pepcid®) 20 mg po bid	Ranitidine 150 mg po BID
Famotidine (Pepcid®) 20 mg po daily	Ranitidine 150 mg po Daily
Famotidine (Pepcid®) 40 mg po hs	Ranitidine 300 mg po HS
Famotidine (Pepcid®) 20 mg IV q 12 hr	Ranitidine 50 mg IV q 8 hr
Famotidine (Pepcid®) 20 mg IV q 24 hr	Ranitidine 50 mg IV q 12 hr
Nizatidine (Axid®) 150 mg bid	Ranitidine 150 mg po BID
Nizatidine (Axid®) 150 mg daily	Ranitidine 150 mg po Daily
Nizatidine (Axid®) 300 mg hs	Ranitidine 300 mg po HS

RENAL NOTE: CrCl <50ml/min, Ranitidine 150mg po daily or Ranitidine 50mg IV q24h

Ketorolac (TORADOL®) orders exceeding 5 days: Clarification order will be written such that combined injectable plus oral ketorolac therapy orders, scheduled or prn, will not exceed 5 days duration. Oral ketorolac remains non-formulary.

Meperidine (Demerol) – only approved for 25 mg inj. for shivering

- Convert other injection doses to equivalent inj. dose of morphine or hydromorphone
Meperidine 75 mg = 10 mg Morphine = 1.5 mg Hydromorphone
- Convert oral dose to equivalent oral dose of morphine or hydromorphone
Meperidine 300 mg = 30 mg Morphine = 6 mg Hydromorphone = 30 mg Hydrocodone

Opioids:

Ordered as:	Dispense as:
Tylox	Percocet

Paroxetine (Paxil-®)

Ordered as:	Dispense as:
Paroxetine CR 12.5 mg daily	Paroxetine 10 mg daily
Paroxetine CR 25 mg daily	Paroxetine 20 mg daily
Paroxetine CR 37.5 mg daily	Paroxetine 30 mg daily

Proton Pump Inhibitor-Oral Equivalency Table

Drug Ordered as:	Dispense As:
Esomeprazole	As written
Lansoprazole 15 mg, 30 mg	Esomeprazole 20 mg, 40 mg, same frequency
Omeprazole 20 mg, 40 mg	Esomeprazole 20 mg, 40 mg, same frequency
Pantoprazole 20 mg, 40 mg	Esomeprazole 20 mg, 40 mg, same frequency
Rabeprazole 20 mg, 40 mg	Esomeprazole 20 mg, 40 mg, same frequency

Omeprazole suspension is used for administration with tubes. For Stress Ulcer

Prophylaxis with GI tubes use Omeprazole 40 mg suspension daily

Esomeprazole- IV Formulary PPI

Potassium- Oral

Max. dose of 40 meq oral, orders > 40 meq at one time will be scheduled in divided doses.

Quinolones

A. If CrCl is \geq 50 mls/min

CAP, Nos.Pneumonia , Compl. Skin & Skin structure

- Levofloxacin 750 mg q 24 hrs x 5 days OR
- Levofloxacin 500 mg q 24 hrs X 7 days

Exacerbation of Chronic Bronchitis,CAP

- Levofloxacin 500mg q 24 hrs

B. If CrCl is 20-49 mls/min

CAP,Nos.Pneumonia , Compl. Skin & Skin structure

- Levofloxacin 750 mg x 1 dose, then 750 mg q 48 hrs OR
- Levofloxacin 500 mg x 1 dose, then 500 mg q 48 hrs

Exacerbation of Chronic Bronchitis, CAP

- Levofloxacin 500mg x 1 dose, then 250 mg q 24 hrs

C. If CrCl is 10-19 mls/min, HD or CAPD

CAP,Nos.Pneumonia ,C. Skin & Skin structure

- Levofloxacin 750 mg x 1 dose, then 500 mg q 48 hrs

Exacerbation of Chronic Bronchitis,CAP

- Levofloxacin 500mg x 1 dose, then 250 mg q 48 hrs

D. If CrCl is \geq 20 mls/min and treating Compl. UTI or Acute Pyelonephritis

- Levofloxacin 250 mg q 24 hrs

E. If CrCl is < 20 mls/min and treating Compl. UTI or Acute Pyelonephritis -

- Levofloxacin 250 mg q 48 hrs

Give oral levofloxacin 2 hrs before oral calcium, iron, aluminum, magnesium, zinc

Chart A: Levofloxacin is Formulary Quinolone. Orders for other quinolones should be reviewed for appropriateness by the Pharmacist and then discussed with the prescriber for possible substitution to levofloxacin.

Ciprofloxacin / Moxifloxacin to levofloxacin dosing conversion chart for patients with normal renal function

Diagnosis	Ciprofloxacin Oral Dose ⁺	Ciprofloxacin IV Dose ⁺	Moxifloxacin Oral/IV Dose	Levofloxacin Oral/IV Dose ⁺
Complicated Urinary Tract Infection	500mg q 12 h	400mg IV q 12 h	Not Indicated	250mg q 24 h
Community Acquired Pneumonia	500mg q 12 h	400mg IV q 12 h	400 mg IV q 24 h	500mg q 24 h
Severe Cases of CAP	750 mg q 12hr	400 mg IV q 8 h	Not Indicated	750 mg q 24 h X 5 days
Uncomplicated Skin and Skin Structure Infection (SSSI)	500mg q 12 h	400mg IV q 12 h	400 mg IV q 24 h	500mg q 24 h
Complicated SSSI	750mg q 12 h	400mg IV q 8 h	400 mg IV q 24 h	750mg q 24 h
Intra-abdominal Infections [#]	500mg q 12 h	400mg IV q 12 h	Not Indicated	500-750mg q 24 h

* Clinical effectiveness only proven in infections caused by penicillin-susceptible *S. pneumoniae*, *H. influenzae*, *H. parainfluenzae*, *M. pneumoniae*, and *C. pneumoniae*.

⁺ Unless otherwise specified, durations of treatment are 7 to 14 days.

[#] Used in conjunction with metronidazole

Statins

HMG-CoA Reductase Inhibitor Recommended Substitutions

Simvastatin is the UCHC Preferred Formulary Statin due to general safety, efficacy, contract pricing, and preferred status on outpatient Rx insurance plans.

Pravastatin & Atorvastatin are also formulary but restricted.

Dose equivalency based on % LDL Lowering

Rostuv. 5 mg = Atorvastatin 10 mg = **Simvastatin 20mg** = Lovastatin 40 mg = Pravastatin 40 mg = Fluvastatin 80 mg.

Daily dose @ 9PM for all statins.

HMG CoA Reductase Inhibitor Conversion Table

Dosage Conversion for HMG-CoA Reductase Inhibitors

Atorvastatin	Fluvastatin	Lovastatin	Pravastatin	Rosuvastatin	Simvastatin
Lipitor®	Lescol®	Mevacor®	Pravachol®	Crestor®	Zocor®
--	--	10 mg	10 mg	--	5 mg
--	40 mg	20 mg	20 mg		10 mg
10 mg	80 mg	40 mg	40 mg	5 mg	20 mg
20 mg	--	80 mg	80 mg	10 mg	40 mg
40 mg	--	--	--	20 mg	80 mg
80 mg	--	--	--	--	--

Exceptions:

A. Atorvastatin 80 mg- honor for pt's coming in with this dose + ACS

- B. Pravastatin or Atorvastatin is allowed if documented history of myopathy, myositis or rhabdomyolysis from other statins
- C. Dosing Considerations: Due to the increased risk of Rhabdomyolysis with Simvastatin + CYP3A4 inhibitors follow below:
 + CYP3A4 Inhibitors: Amiodarone, Clarithromycin, Cyclosporin, Diltiazem, Erythromycin, Itraconazole, Ketoconazole, Verapamil, HIV Protease Inhibitors, other potent inhibitors RPH Action:
 If simvastatin ordered change to equivalent dose
 Dose of Atorvastatin or pravastatin
- D. Lipid lowering agents that can cause myopathy when used alone
 Gemfibrozil, Cyclosporin, Danazol, Niacin > 1gm/daily
 RPH Action: If pt. is stable on above med + Simvastatin continue both or if Simvastatin > 10mg/ day RPH may suggest to MD to decrease to 10 mg Simv. or change to Pravastatin or Atorvastatin

Topical Emollients:

Ordered as:

Dispense as:

Eucerin

LubriDerm

The Unit Pharmacist has prior authorization from the Pharmacy & Therapeutics Com. to make the following changes for the following types of Medication Orders.

1. Delete Duplicate orders of the same med, dose, route,

With varying schedules:

- EG: Tylenol 650 mg po q 4 hrs prn pain- new order
 Tylenol “ po q 6 hrs prn pain- old order not Dc'd by MD- Rph to delete
 RPH to add Add. Sig. not to exceed 4 gm/daily
- Orders for the same med with different routes are accepted but the Rph may Delete one route if the MD & patients nurse agrees that this route is not intended to be used for a finite period.
 Pt. is NPO, has Gastric obstruction, intubated- Discuss w MD & RN option to Delete PO until po meds and diet are tolerated or RPH will add sig. as above

2. Automatic Interchange between liquid and solid dosage forms and route (if necessary) of an ordered med (in POE -Invision). *

- EG: Pt. is receiving meds and/or feedings via NG, OG, Peg -Rph after d/w RN will switch from solid to liquid form (if available).
 For Phenytoin RPH to consult with prescriber.

3. Automatic change of dose strengths (a) based on Pharmacy

Availability or change between sustained dose form and immediate release form (b). (in POE -Invision). *

- Fluoxetine (Prozac-R) 30 mg po daily- RPH changes product to 3x 10 mg= 30 mg
- Warfarin 7 as 1.4 tab of 5mg- Rph changes to 5mg & 2 mg tab=7 mg total

b. Cardizem CD 180 mg po daily –pt. can't take CD or med needs to be

crushed or RN preference- Rph change product to Diltiazem 60 mg po q 8 hrs or TID 9-3-9

4. Automatic change of Now & Routine Med order for AM that might result In the patient receiving 2 unintended doses within a short period of time *

a. MD changes order of Metoprolol 50 mg daily to 50 mg po BID as now & routine if within several hours of next scheduled dose

routine with intent of increasing to 2 doses per day-RPH changes to routine

***If any change in med code, route, schedule requires RPH to enter into POE (INvision) Per P&T Protocol**

Approved 2/12/2008 TP/PB

Vitamins:

Therapeutic Multivitamin tab: NDC# 00904-0539-61

Vitamin A 5000 IU, Vitamin C 90mg, Vitamin D 400 IU, Vitamin E 30IU, Thiamine 3mg, Riboflavin 3.4mg, Niacin 20mg, Vitamin B-6 3mg, Folate 400mcg, Vitamin B-12 9mcg, Biotin 30mcg, Pantothenic Acid 10mg, Calcium 66mg,

Multivitamin tab: NDC# 00904-0530-61

Vitamin A 5000IU, Vitamin C 60mg, Vitamin D 400IU, Vitamin E 30IU, Thiamine 1.5mg, Riboflavin 1.7mg, Niacin 20mg, Vitamin B-6 2mg, Folate 400mcg, Vitamin B-12 6mcg, Pantothenic Acid 10mg

Multivitamin liq.: NDC# 50383-683-04 per 5mls

Vitamin A 5000 Int. Units, Vitamin C 200 mg, Vitamin D 400 Int.Units, Thiamine 10 mg, Riboflavin 10 mg, Niacin 100 mg, Vitamin B-6 4.1 mg, Vitamin B-12 -5 mcg, Pantothenic Acid 21.4 mg

Updated: 5/08, 3/09, 6/09