



**Midland Quality**  
Alliance

MIDLAND QUALITY ALLIANCE  
ALGORITHM FOR MANAGEMENT OF  
HYPERTENSION  
AND  
GUIDELINES FOR COST EFFECTIVE  
PHARMACOLOGICAL MANAGEMENT

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## Comparison of ACCF/AHA Stages of HF and NYHA Functional Classifications

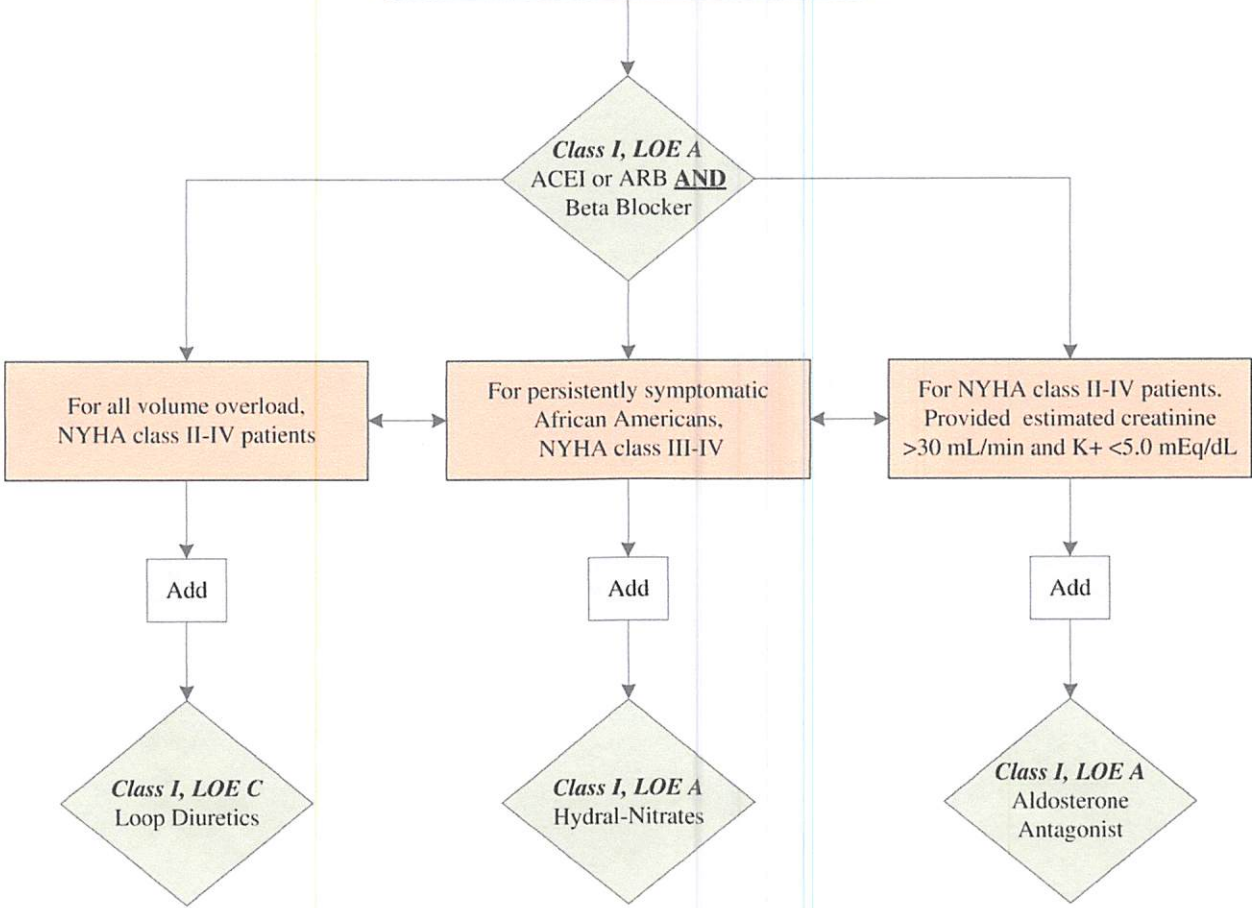
### ACCF/AHA Stages of HF (38)

### NYHA Functional Classification (46)

A	At high risk for HF but without structural heart disease or symptoms of HF	None	
B	Structural heart disease but without signs or symptoms of HF	I	No limitation of physical activity. Ordinary physical activity does not cause symptoms of HF.
C	Structural heart disease with prior or current symptoms of HF	I	No limitation of physical activity. Ordinary physical activity does not cause symptoms of HF.
		II	Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in symptoms of HF.
		III	Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes symptoms of HF.
		IV	Unable to carry on any physical activity without symptoms of HF, or symptoms of HF at rest.
D	Refractory HF requiring specialized interventions	IV	Unable to carry on any physical activity without symptoms of HF, or symptoms of HF at rest.

**ACCF indicates American College of Cardiology Foundation; AHA, American Heart Association; HF, heart failure; and NYHA, New York Heart Association.**

**HFrEF Stage C  
NYHA Class I – IV  
Treatment:**



## MIDLAND HEALTHCARE ALLIANCE PREFERRED MEDICATIONS IN CHF

### I. STEP ONE THERAPY (ACE inhibitor or ARB + Beta Blocker)

#### a) ACE inhibitors

Lisinopril (least expensive) \$ <5 USD

Fosinopril (less cough due to less bradykinin) \$\$ 5-25 USD

Ramipril (More potent, more effective in a few studies) \$\$ 5-25 USD

#### b) ARB (angiotensin receptor blockers)

Losartan (least expensive, but least potent) \$ <5 USD

Valsartan (Moderately potent) \$\$ 5-25 USD

Candesartan (More potent) \$\$\$ 25-100 USD

#### c) Beta blockers

Carvedilol (most effective in studies AND least expensive) \$ <5 USD

Metoprolol succinate XL (once a day, more chronotropic, if rate needs slowing) \$\$ 5-25 USD

#### d) ARNI (arb+neprolysin inhibitor) This can be considered instead of ACE or ARB. \$\$\$\$\$ >500 USD

### II. STEP TWO THERAPY (add on to above)

#### a) Diuretic (improves CHF symptoms but does not affect mortality)

Furosemide \$ <5 USD

Bumetanide \$\$ 5-25 USD

#### b) Aldosterone antagonist

Spironolactone (improves mortality and LV remodeling) \$ <5 USD

#### c) Hydralazine + nitrates

This should be considered for all African American patients due to demonstrated superior outcomes in these patients

## Hypertension

Drug	Dose Range (estimated \$/30 days)	
<b>Thiazide/Thiazide-like Diuretics</b>		
Chlorthalidone	12.5-25	\$8-16
Hydrochlorothiazide	25-50	\$0.6-1.2
Indapamide	1.25-2.5	\$6.68
Metolazone	2.5-10	\$50-114
<b>Ace-i</b>		
Benazepril	10-40	\$1.7-2.8
Captopril	12.5-150	\$68-122
Enalapril	5-40	\$14-28
Fosinopril	10-40	\$4-8
Lisinopril	10-40	\$0.8-1.6
Moexipril	7.5-30	\$19-47
Perindopril	4-16	\$20-40
Quinapril	10-80	\$3.3-6.6
Ramipril	2.5-10	\$3-6
Trandolapril	1-4	\$9-18
<b>ARBs</b>		
Azilsartan	40-80	\$161-175
Candesartan	8-32	\$53-106
Eprosartan	600-800	\$70.50
Irbesartan	150-300	\$4.5-6
Losartan	50-100	\$1.1-3.3
Olmesartan	20-40	\$4-5.3
Telmisartan	20-80	\$8-10
Valsartan	80-320	\$6.6-10
<b>CCB-dihydrophyridines</b>		
Amlodipine	2.5-10	\$0.35-0.5
Felodipine	5-10	\$14-16
Isradipine	5-10	\$31-62
Nicardipine SR	5-20	\$38
Nifedipine LA	60-120	\$8.4-16.8
Nisoldipine	30-90	n/a
<b>CCB-nondihydrophyridines</b>		
Diltiazem SR	180-360	\$10-20
Diltiazem ER	120-480	\$7.5-30
Verapamil IR	40-80	\$0.5-1
Verapamil SR	120-480	\$4-8
Verapamil-delayed onset ER	100-480	\$8-12
<b>Diuretics-loop</b>		
Bumetanide	0.5-4	\$15-51

Furosemide	20-80	\$0.3-1	
Torsemide	5-10	\$1.5-1.9	
<b>Diuretics-K sparing</b>			
Amiloride	5-10	\$6-12	
Triamterene	50-100	\$292	triam/hctz combo (37.5/25mg-75/50mg) is a lot cheaper ~\$1.5-3
<b>Diuretics-aldosterone antag.</b>			
Eplerenone	50-100	\$37-75	
Spironolactone	25-100	\$1.3-2.6	
<b>Beta Blockers-cardioselective</b>			
Atenolol	25-100	\$0.8-1.6	
Betaxolol	5-20	\$6.6-26	
Bisoprolol	2.5-10	22	
Metoprolol tartrate	100-400	\$1-4.2	
Metoprolol succinate	50-200	\$7-14	
<b>Beta Blockers-cardioselective and vasodilatory</b>			
Nebivolol	5-40	\$121-242	
<b>Beta Blockers-noncardioselective</b>			
Nadolol	40-120	\$33-99	
Propranolol IR	160-480	\$15-45	
Propranolol LA	80-320	\$14-37	
<b>Beta Blockers-intrinsic sympathomimetic</b>			
Acebutolol	200-800	\$4.4-12	
Carteolol	2.5-10	n/a	
Penbutolol	10-40	n/a	
Pindolol	10-60	\$30-180	
<b>Beta Blockers-combined alpha and beta</b>			
Carvedilol	12.5-50	\$1.5-3	
Carvedilol CR	20-80	148	
Labetalol	200-800	\$15-30	
<b>Direct renin inhibitor</b>			
Aliskeren	150-300	\$166-210	
<b>Alpha-1 Blockers</b>			
Doxazosin	1-8	\$7-11	
Prazosin	2-20	\$13-99	
Terazosin	1-20	\$2.6-5.4	
<b>Central alpha1-agonist and other centrally acting drugs</b>			
Clonidine PO	0.1-0.8	\$0.5-3.2	
Clonidine Patch	0.1-0.3	\$58.5-107	
Methyldopa	250-1000	\$8-17	
Guanfacine	0.5-2	\$2.6-6.2	
<b>Direct vasodilators</b>			
Hydralazine	50-200	\$2-6	
Minoxidil	5-100	\$5-63	