



# Indiana Medicaid Drug Utilization Review Board Newsletter

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Indiana Medicaid DUR Board  
Room W382  
Indiana State Government  
Center, South  
402 West Washington Street  
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## Treatment of Hypertension: A Review

Recent estimates have shown that one in three American adults has high blood pressure. Surprisingly, this condition still remains inadequately managed despite the fact that treatment has been shown to prevent cardiovascular diseases as well as extend and enhance life. Interestingly, nearly one-third of hypertensive Americans are not aware that they have this condition. Hypertension and its complications leads to more physician visits than any other medical condition, costing the U.S. economy more than \$100 billion dollars annually; just a ten percent decline in the number of these visits would save \$478 million dollars each year. Subsequently, hypertension remains an important public health challenge due to associated morbidity, mortality, and high cost to society.<sup>1,4</sup>

Blood pressure is categorized as either normal, pre-, stage 1-, or stage-2 hypertension. Hypertension is usually found incidentally by healthcare professionals and normally produces no symptoms. Though elevated blood pressure alone is not an illness, it often requires treatment due to its short- and long-term effects on many organs. Persistently high blood pressure is a contributing factor to numerous life-threatening conditions, but can be modified by changes in lifestyle and pharmaceutical interventions.<sup>1</sup>

Attention has focused on healthy lifestyle modifications as a treatment regimen because such changes have been shown to reduce blood pressure, enhance antihypertensive drug efficacy, and decrease cardiovascular risk. Factors essential for monitor-

ing include obesity, physical activity, dietary changes, and alcohol consumption. Once blood pressure exceeds treatment goals, drug therapy is initiated; and, while clinical trials have demonstrated comparative efficacy among several classes of anti-hypertensives, most patients require at least two medications for the treatment of hypertension. The combination of agents from different categories along with healthy lifestyle changes often results in synergistic outcomes.<sup>3,4</sup>

Classes of drugs proven to reduce complications of high blood pressure include the following: angiotension converting enzyme inhibitors (ACE), angiotensin receptor blockers (ARB), beta-blockers (BB), calcium channel blockers (CCB), and thiazide-type diuretics. Among these, thiazide diuretics are recommended as initial therapy for most patients with hypertension either alone or in combination with a drug from another class. Hypertensive patients with coexisting conditions such as diabetes, heart failure, and chronic kidney disease, usually require use of a different medication for first-line therapy.<sup>3</sup> (See Table 1 for classification and management of blood pressure)

Because increased blood pressure is prevalent in most patients with diabetes and chronic kidney disease, these individuals should receive aggressive therapy in order to reach target blood pressure goals. (See Table 2 for treatment of specific conditions) Current guidelines recommend that patients with diabetes and chronic kidney disease keep blood pressure at or below 130/80 mmHg. Therefore, adequate pre-

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Table 1. Classification and management of blood pressure for adults<sup>3</sup>

Blood pressure classification*	Systolic blood pressure (mmHg)**	Diastolic blood pressure (mmHg)**	Lifestyle modification(s)***	Initial drug therapy without coexisting condition(s)***	Initial drug therapy with coexisting condition(s)***
Normal	< 120	and < 80	Encourage	No antihypertensive medication indicated	Medication(s) for coexisting indications
Prehypertension	120-139	or 80-89	Yes		
Stage 1 Hypertension	140-159	or 90-99	Yes	Thiazide-type diuretics for most; may consider an ACE, ARB, BB, CCB, or combination	Medication(s) for coexisting indications; other antihypertensive medications (diuretics, ACE, ARB, BB, CCB) as needed
Stage 2 Hypertension	<sup>3</sup> 160	or <sup>3</sup> 100	Yes	Two-drug combination for most (usually thiazide-type diuretic and ACE or ARB or BB or CCB)	

\*This classification is based on the average of two or more properly measured, seated blood pressure readings on each of two or more office visits.

\*\*Blood pressure should be kept at or below 130/80 mmHg for patients with diabetes and chronic kidney disease.

\*\*\*Treatment is determined by highest blood pressure category

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scribing of lifestyle modifications, antihypertensive drug doses, or appropriate drug combinations is critical for proper blood pressure control.<sup>3</sup>

Clinical trials have established that effective blood pressure management can be achieved in most patients who are hypertensive. However, patient motivation to maintain a healthy lifestyle and adhere to prescribed drug therapy are imperative for optimal outcomes.<sup>3</sup> The challenge to lower high blood pressure will continue unless productive interventions are identified. Consequently, the National Heart, Lung, and Blood Institute is planning to develop a set of integrated guidelines for reducing the risk for cardiovascular disease. An expert panel will begin working on these guidelines during the year 2007 and it is anticipated that it will take approximately 24 months to develop these new guidelines. Furthermore, these guidelines will cover a range of cardiovascular disease risk factors including high blood pressure, cholesterol, and obesity, and will provide an updated guide to the treatment of hypertension.

Table 2. Comorbidities and drug therapy<sup>3</sup>

Comorbid Condition	Diuretics	BB	ACE	ARB	CCB	Aldosterone Antagonist
Heart Failure	•	•	•	•		•
Post myocardial infarction		•	•			•
High coronary disease risk	•	•	•		•	
Diabetes	•	•	•	•	•	
Chronic kidney disease				•	•	
Recurrent stroke prevention	•			•	•	

\*ACE and BB are recommended in asymptomatic patients with ventricular dysfunction.

\*\*HTN should be treated initially with BB and ACE in patients with acute MI or unstable angina.

\*\*\*The American Diabetes Association recommends ACE, BB, and diuretics for initial therapy. In patients with signs of kidney dysfunction, ARB are considered first line options.

#### References:

1. American Heart Association. Available at: <http://www.americanheart.org>. Accessed February 2007.
2. Food and Drug Administration. Available at: <http://www.accessdata.fda.gov/scripts/cder/drugsatfda/>. Accessed February 2007.
3. NHLBI. Seventh Report of the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7). NIH publication #04-5230. Available at: <http://www.nhlbi.nih.gov/guideline/hypertension/jnc7full.htm>. Accessed February 2007.
4. World Health Organization. Available at: [http://www.who.int/cardiovascular\\_diseases/guidelines/hypertension/en/index.html](http://www.who.int/cardiovascular_diseases/guidelines/hypertension/en/index.html). Accessed February 2007.

### Program Assistance

All prior authorization requests or questions regarding the PDL should be directed to the ACS Clinical Call Center at 1-866-879-0106.

### PDL Listing

The fee-for-service PDL listing may be found at the following Web site:

<http://www.indianapbm.com/>

## Top 20 Drugs for 1Q 2007

**Top 20 Drugs 1<sup>st</sup> Quarter 2007  
Ranked by Total Amount Paid**

Drug	Total Paid	Total Claims
Risperidone	\$3,682,239.58	13,913
Quetiapine	\$3,053,633.72	12,188
Olanzapine	\$3,009,747.62	6,677
Aripiprazole	\$2,959,519.07	7,654
Antihemophilic factor	\$2,784,074.98	96
Divalproex sodium	\$1,709,510.84	11,296
Topiramate	\$1,482,133.01	5,954
Insulin	\$1,440,562.08	12,814
Lamotrigine	\$1,334,170.81	5,683
Fentanyl	\$1,123,444.74	3,599
Atorvastatin	\$1,069,705.08	10,445
Ziprasidone	\$1,064,103.84	3,818
Oxycodone	\$1,022,530.95	4,689
Fluticasone/salmeterol	\$911,402.58	5,143
Oxcarbazepine	\$909,389.96	4,512
Amphetamine salts	\$878,182.35	8,843
Sertraline	\$855,537.70	10,822
Methylphenidate	\$844,104.12	9,448
Pantoprazole	\$776,559.21	6,337
Duloxetine	\$773,975.14	5,702

**Top 20 Drugs 1<sup>st</sup> Quarter 2007  
Ranked by Total Claims Paid**

Drug	Total Claims	Total Paid
Hydrocodone/APAP	44,456	\$373,461.64
Aspirin	38,820	\$30,197.12
Docusate sodium	37,541	\$79,747.53
Alprazolam	32,684	\$316,770.42
Acetaminophen	32,334	\$84,435.55
Calcium/Vit D	30,738	\$70,352.29
Multivitamins	25,374	\$36,015.91
Loratadine	24,187	\$243,006.99
Clonazepam	21,932	\$122,806.44
Lorazepam	20,852	\$127,157.03
Multivitamins with minerals	19,549	\$53,301.36
Albuterol	19,217	\$323,845.53
Omeprazole	18,976	\$530,601.32
Risperidone	13,913	\$3,682,239.58
Amoxicillin	13,465	\$108,322.01
Insulin	12,814	\$1,440,562.08
Levothyroxine	12,633	\$137,901.49
Quetiapine	12,188	\$3,053,633.72
Diazepam	12,100	\$234,664.83
Lisinopril	11,885	\$80,380.25