

## Indiana Medicaid Therapeutics Committee Therapeutic Class Review Summary

### **Therapeutic Class:**

Angiotensin II Receptor Blockers

### **Overview:**

Angiotensin II receptor blockers (ARBs) inhibit the binding of angiotensin II to the AT<sub>1</sub> receptors in the vascular smooth muscle which in turn produces vasodilation. Since ARBs do not inhibit the function of angiotensin converting enzyme (ACE) like ACE inhibitors, ARBs do not affect the response of bradykinin. Therefore, coughing, which is the most common side effect of ACE inhibitors, does not occur as often with angiotensin II receptor blockers. According to JNC-VII, ARBs are listed among the initial therapy options for patients with heart failure, diabetes, and chronic kidney disease.

Seven angiotensin II receptor blockers currently exist in the United States. All ARBs have an indication for the treatment of hypertension. Irbesartan and losartan have additional indications for the treatment of diabetic nephropathy in type 2 diabetic patients with hypertension, elevated serum creatinine, and proteinuria. In addition, losartan has an indication for reduction of stroke risk in patients with hypertension and left ventricular hypertrophy (not applicable in African-American patients). Valsartan has an indication for the treatment of heart failure (NYHA class II-IV) and an indication for the treatment of clinically stable patients with left ventricular failure or left ventricular dysfunction following MI to reduce cardiovascular mortality. Candesartan has an FDA-approved indication for the treatment of heart failure (NYHA class II-IV) in patients with left ventricular systolic dysfunction (ejection fraction less than or equal to 40%) to reduce cardiovascular death and heart failure hospitalizations. Candesartan has also received FDA approval for use in conjunction with an ACE inhibitor to have an added effect on these outcomes. Telmisartan is also indicated for cardiovascular risk reduction in patients unable to take ACE inhibitors. Generic products are not available in this class. The head-to-head clinical trials have shown statistically significant differences in blood pressure reduction between various agents within this class. However, clinically, the difference may not be significant.

<b>Generic Name</b>	<b>Trade Name</b>	<b>Manufacturer</b>	<b>Generic</b>
Candesartan	Atacand <sup>®</sup>	AstraZeneca	N
Eprosartan	Teveten <sup>®</sup>	Kos	N
Irbesartan	Avapro <sup>®</sup>	Bristol-Myers Squibb	N
Losartan	Cozaar <sup>®</sup>	Merck & Co, Inc.	N
Olmesartan	Benicar <sup>®</sup>	Sankyo Pharma, Inc.	N
Telmisartan	Micardis <sup>®</sup>	Boehringer Ingelheim	N
Valsartan	Diovan <sup>®</sup>	Novartis	N



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**Summary:**

Angiotensin II receptor blockers (ARBs) offer an alternative to ACE inhibitors in the management of hypertension, especially for ACE inhibitor-intolerant patients. ARBs are safe and effective maintenance medications that can be used as monotherapy or in combinations. In addition to the treatment of hypertension, many of the ARBs have other FDA-approved indications. Currently, no generic angiotensin II receptor blockers are available. The preferred drug list should be based on indications, efficacy, current utilization, and cost.