

To:
Prescribing Physicians, Pharmacies
From:
Wisconsin Medicaid, Division of Health Care Financing

January 2004

Utilization and Program Costs of Statins for Wisconsin Medicaid

PRIOR AUTHORIZATION GUIDELINES

In order to encourage the use of generic lovastatin, the Wisconsin Medicaid program began requiring prior authorization for brand name HMG-CoA reductase inhibitors on April 15, 2003. Prior authorization was made available through the STAT-PA system. Only recipients new to statin drugs are required to try lovastatin first. The criteria for determining prior authorization includes:

- Any recipient currently on an effective brand name statin will be granted PA to continue on that statin drug.
- Any recipient who requires >35% reduction in low-density lipoprotein (LDL) cholesterol **will be granted** PA to start on the brand name statin drugs.
- Any recipient who has impaired renal function **will be granted** PA to start on the brand name statin drugs.
- Any recipient who is at high risk for drug interactions **will be granted** PA to start on the brand name statin drugs.

For more information, go to the Wisconsin Medicaid pharmacy handbook website at <http://www.dhfs.state.wi.us/Medicaid2/handbooks/pharmacy/index.htm>.

Wisconsin Medicaid analyzes claim data to review adherence to prior authorization policies.

THE COST OF GENERIC VERSUS BRAND-NAME HMG-COA REDUCTASE INHIBITORS

In June 2002, lovastatin became the first HMG-CoA reductase inhibitor with an AB rated generic equivalent. All other statins are currently available only as brand name products. Brand name lovastatin is also still marketed as Mevacor. Other brand name products include Altacor (lovastatin ER), Lipitor

(atorvastatin), Zocor (simvastatin), Pravachol (pravastatin), Crestor (rosuvastatin), Lescol (fluvastatin), and Lescol XL (fluvastatin XL). Products that contain an HMG-CoA reductase inhibitor combined with another ingredient (e.g. Advicor) were not included in this analysis.

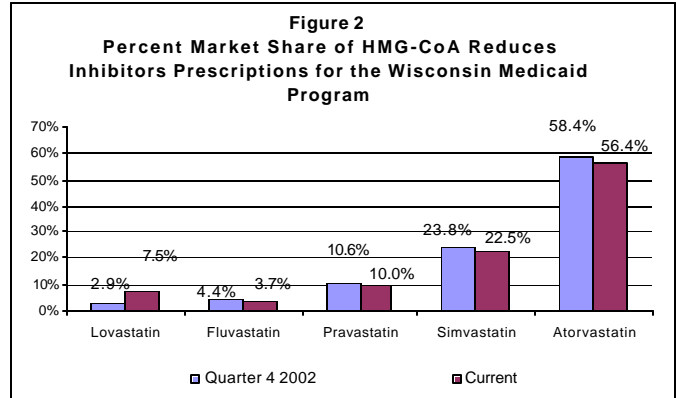
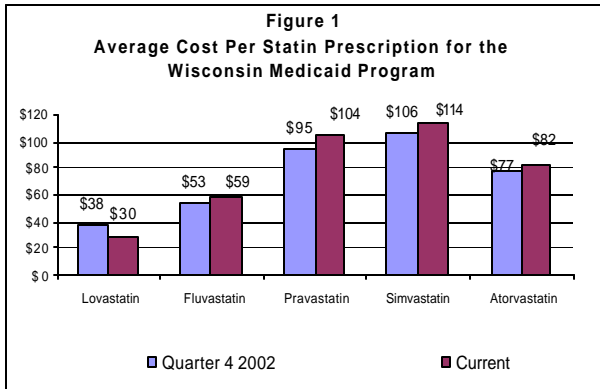
The generic form of lovastatin is significantly less expensive to the Medicaid program than brand name products. Average cost to the Wisconsin Medicaid Program for generic lovastatin 40 mg is \$1.20 per tablet¹ and for a brand name HMG-CoA reductase inhibitors (including the brand name forms of lovastatin) range from \$1.65 to \$4.18 per equipotent dosage² (table 1).

Table I
Cost Per Tablet for Wisconsin Medicaid

Trade Name	Generic Name	Cost Per Tablet
Mevacor 40 mg	Lovastatin	\$4.18
Zocor 20 mg	Simvastatin	\$4.03
Pravachol 40 mg	Pravastatin	\$3.98
Crestor 10 mg	Rosuvastatin	\$2.31
Lipitor 10mg	Atorvastatin	\$2.28
Lescol 40 mg or Lescol XL 80 mg	Fluvastatin or Fluvastatin XL	\$1.79/\$2.09
Altacor 40 mg	Lovastatin ER	\$1.65
Lovastatin 40 mg (Generic)	-----	\$1.20

WISCONSIN MEDICAID COST AND EXPENDITURES FOR HMG-COA REDUCTASE INHIBITORS

The annual drug budget for the Wisconsin Medicaid program is currently over \$500 million. The budget has increased approximately 16 percent each year over the past 2 years. Wisconsin Medicaid spent more than \$12.5 million on HMG-CoA reductase inhibitors in 2001. In 2002, Wisconsin Medicaid spent more than \$16 million. This is an increase of 29% from the previous year. The average cost per prescription of an HMG-CoA reductase inhibitor for the last quarter of 2002 as compared to the current cost per prescription is illustrated in Figure 1. The percent of the overall number of prescriptions for these agents is illustrated in Figure 2.



CLINICAL INFORMATION

HMG-CoA reductase inhibitors (also known as 'statins') are used to treat dyslipidemias of various etiologies. Table 2 briefly summarizes the approved indications of the available products.

When given in approximately equivalent daily doses, HMG-CoA reductase inhibitors can reduce low-density lipoprotein (LDL) cholesterol up to about 40% (table 3). However, if a reduction in LDL greater than 40% is desired, a daily dose of atorvastatin 20mg, lovastatin 80mg, simvastatin 40mg or rosuvastatin 5 mg is more likely to achieve this goal.

In addition to the reduction of LDLs, the HMG-CoA reductase inhibitors have mixed influence on other lipoproteins. Even though this article concentrates on the reduction of LDLs, table 4 briefly summarizes which HMG-CoA reductase inhibitors are approved to treat other lipoprotein disorders.

	Atorvastatin	Fluvastatin	Lovastatin	Pravastatin	Simvastatin	Rosuvastatin
Hypercholesterolemia	X	X	X	X	X	X
Mixed Dyslipidemia	X	X		X	X	X
Primary Prevention Of CHD	X	X	X	X	X	
Secondary Prevention Of CHD		X	X	X	X	
Dysbetalipoproteinemia	X			X	X	
Elevated Serum Triglycerides	X			X	X	X

Rosuvastatin				5 (45%)	10-20 (52-55%)	40 (63%)
Atorvastatin			10 (38%)	20 (43%)	40 (50%)	80 (60%)
Simvastatin		10 (30%)	20 (38%)	40 (41%)	80 (47%)	
Lovastatin	10 (21%)	20 (27%)	40 (31%)	80 (42%)-as 40 bid		
Pravastatin		20 (30%)	40 (34%)			
Fluvastatin	20 (20%)	40 (24%)	80 (30%)			
Fluvastatin XL						
Lovastatin ER						

	Atorvastatin	Fluvastatin	Lovastatin	Pravastatin	Simvastatin	Rosuvastatin
Decrease Total Cholesterol	X	X	X	X	X	X
Decrease Low-Density Lipoproteins	X	X	X	X	X	X
Decrease Apolipoprotein B	X	X	X	X	X	X
Decrease Triglyceride	X	X		X	X	X
Increase High-Density Lipoproteins	X	X		X	X	X

DRUG INTERACTIONS, ADVERSE EFFECTS AND MONITORING³⁻⁶

Simvastatin, lovastatin, and atorvastatin are metabolized by cytochrome P450 3A4. Therefore, HMG-CoA reductase inhibitors are susceptible to interactions when taken with other agents metabolized by P450 3A4. Inhibitors of P450 3A4 such as clarithromycin, erythromycin, protease inhibitors, verapamil and itraconazole are likely to increase blood concentrations of HMG-CoA reductase inhibitors. Fluvastatin is primarily metabolized by P450 2C9. Some inhibitors of P450 2C9 are omeprazole, cimetidine and metronidazole. Pravastatin and rosuvastatin are not significantly metabolized by the P450 system and are unlikely to interact with other agents that are metabolized by these enzymes.

The most common adverse effects for HMG-CoA reductase inhibitors are GI complaints, headache, insomnia, and rash. One notable adverse effect is photosensitivity. Adverse effects that are rare but more serious include elevated liver enzymes (transaminase and creatine kinase) and rhabdomyolysis. Patients should be advised to report any unexplained muscle pain or weakness to their physician and liver enzymes should be monitored. Liver function tests (LFTs) should be checked before initiating treatment, routinely as recommended by the manufacturer and after each dose elevation. The risk of significant elevations in LFTs increases with increasing doses of an HMG-CoA reductase inhibitor. Table 5 summarizes individual monitoring parameters.

	Baseline	Prior To Dose Elevation	After Dose Elevation	6 Weeks	12 Weeks	Periodically
Atorvastatin	X		X		X	X
Fluvastatin	X		X		X	
Fluvastatin XL	X		X		X	
Lovastatin	X		X	X	X	X
Pravastatin	X	X				
Rosuvastatin	X	X	X		X	X
Simvastatin	X		X			
Simvastatin 80mg	X		X		X	X

RECOMMENDATIONS

New patients requiring up to a 30% reduction in LDL levels should be treated with a single daily dose of lovastatin. Reductions of LDL up to 42% may be achieved with 80 mg of lovastatin. The use of generic lovastatin in these patients would provide substantial savings to the Medicaid program. Patients requiring LDL reductions greater than 40% need to be treated with a more potent statin. Treatment goals for reduction of cholesterol are continuously evaluated and new guidelines are published periodically. In addition, goals for secondary prevention of a cardiovascular event may be more aggressive than those for primary prevention.

Some patients currently on other statins may be effectively treated with lovastatin. Prescribers should consider changing these patients to lovastatin to provide substantial savings to the Medicaid program without decreasing the quality of care the patient receives. Medicaid will continue to reimburse for the other statins for those patients requiring these more potent drugs. The change to generic lovastatin will also save Medicaid and SeniorCare patients since they will pay a generic co-payment. (\$1 vs. \$3 for Medicaid and \$5 vs. \$15 for SeniorCare).

For additional information, contact Mike Boushon, DHCF pharmacy consultant at (608) 261-7791.

LDL LEVELS NEEDED TO ACHIEVE LDL LEVELS OF < 100MG/DL, <130MG/DL OR <160MG/DL

Baseline LDL in mg/dL	Goal LDL of <100 mg/dL	Goal LDL of <130 mg/dL	Goal LDL of <160 mg/dL
100	1.00%		
110	10.00%		
120	17.50%	0.00%	
130	23.85%	0.77%	
140	29.29%	7.86%	
150	34.00%	14.00%	
160	38.13%	19.38%	0.63%
170	41.76%	24.12%	6.47%
180	45.00%	28.33%	11.67%
190	47.89%	32.11%	16.32%
200	50.50%	35.50%	20.50%
210	52.86%	38.57%	24.29%
220	55.00%	41.36%	27.73%
230	56.96%	43.91%	30.87%
240	58.75%	46.25%	33.75%
250	60.40%	48.40%	36.40%
260	61.92%	50.38%	38.85%
270	63.33%	52.22%	41.11%
280	64.64%	53.93%	43.21%
290	65.86%	55.52%	45.17%
300	67.00%	57.00%	47.00%
310	68.06%	58.39%	48.71%
320	69.06%	59.69%	50.31%
330	70.00%	60.91%	51.82%
340	70.88%	62.06%	53.24%
350	71.71%	63.14%	54.57%
360	72.50%	64.17%	55.83%
370	73.24%	65.14%	57.03%
380	73.95%	66.05%	58.16%

■ =LDL reduction not likely with HMG-CoA reductase inhibitor monotherapy

HMG-COA REDUCTASE INHIBITORS GROUPED BY EQUIVALENT DAILY DOSE, APPROXIMATE (%) REDUCTION IN LDLs AND COST PER MONTH OF THERAPY

Fluvastatin 10mg QD	(20%)	\$48.97/month
Lovastatin 10mg QD	(21%)	\$12.83/month

Lovastatin 20mg QD	(27%)	\$20.63/month
Fluvastatin 40mg QD	(24%)	\$48.97/month
Fluvastatin 40mg BID	(30%)	\$97.94/month
Fluvastatin XL 80mg	(30%)	\$62.73/month
Pravastatin 20mg QD	(30%)	\$81.32/month
Simvastatin 10mg QD	(30%)	\$69.39/month

Lovastatin 40mg QD	(31%)	\$36.23/month
Pravastatin 40mg or 80mg QD	(34-37%)	\$119.34/month
Simvastatin 20mg QD	(38%)	\$121.05/month
Atorvastatin 10mg QD	(38%)	\$66.88/month

Simvastatin 40mg QD	(41%)	\$121.05/month
Lovastatin 40mg BID	(42%)	\$72.90/month
Atorvastatin 20mg QD	(43%)	\$98.60/month
Rosuvastatin 5mg QD	(45%)	\$69.30/month

Simvastatin 80mg QD	(47%)	\$121.05/month
Atorvastatin 40mg QD	(50%)	\$96.19/month
Rosuvastatin 10mg or 20mg QD	(52-55%)	\$69.30/month

Atorvastatin 80mg QD	(60%)	\$96.19/month
Rosuvastatin 40mg QD	(63%)	\$69.30/month

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6. *CRESTOR® (rosuvastatin calcium) Prescribing Information. Wilmington, Del: AstraZeneca Pharmaceuticals LP. 8/03.