Using Lorcaserin for Weight Management Prior to Bariatric Surgery: Modeling the Cost Implications for California State Medicaid

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Background & Objectives

- Pharmacologic therapy is part of the treatment paradigm recommended by many professional organizations for weight loss treatment in overweight or obese patients.
- Lorcaserin is indicated as an adjunct to a reduced-calorie diet and increased physical activity for chronic weight management in adults with overweight and at least one weight related comorbidity and in obesity.
- Many commercial health care plans and state Medicaid programs commonly provide coverage for bariatric surgery for patients with BMI ≥ 40 or BMI 35-39.9 with ≥ 1 obesity-related comorbidity.
- Coverage for anti-obesity medications is less common, even though some patients may benefit from anti-obesity medication prior to and to avoid bariatric surgery.
- This study modeled the pharmacy and medical cost implications of treating patients with lorcaserin, an FDA-approved anti-obesity medication, prior to bariatric surgery, in the California MediCal population.
Method

• The model assumes that severely obese patients (BMI ≥ 40) whose weight was reduced to BMI < 35 following lorcaserin treatment would avoid bariatric surgery.

• Model inputs included the size of the adult MediCal population, national rate of bariatric surgery, and the average cost of bariatric surgery in California.

• Lorcaserin treatment and outcomes were based on the results from three Phase III clinical trials (BLOSSOM, BLOOM, BLOOM-DM) evaluating the efficacy and safety of lorcaserin for weight loss.

• Medication specific inputs included proportion of patients responding to lorcaserin treatment (achieving ≥ 5% weight loss from baseline at week 12), expected weight loss, and medication acquisition costs.

• The model generated cost estimates over a 2-year timeline from the payer perspective.
Population

MediCal Adult Population
- 4,800,000

Undergoing Bariatric Surgery
- 4,979 (.001%)

BMI 35-39.9
- Modeled Patients: 548 (11%)

BMI ≥ 40
- Modeled Patients: 4,431 (89%)

Total Modeled Patients: 4,431
Weight Loss at 12 Weeks of Treatment

Patients who responded to lorcaserin treatment lost at least 5% of baseline body weight in the first 12 weeks of treatment.

Patients in Clinical Trial Treated with Lorcaserin

- BMI < 35 kg/m²
  - < 5% at Week 12 = 79.0%
  - ≥ 5% at Week 12 = 21.0%
- BMI ≥ 35 kg/m²
  - < 5% at Week 12 = 4.0%
  - ≥ 5% at Week 12 = 17.0%

Patients in Clinical Trial Receiving Placebo

- BMI < 35 kg/m²
  - < 5% at Week 12 = 7.5%
  - ≥ 5% at Week 12 = 35.0%
- BMI ≥ 35 kg/m²
  - < 5% at Week 12 = 4.0%

Patients with BMI > 35 at one year discontinued medication at one year. Patients with BMI ≤ 35 at one year continued on medication through year two. Patients who did not lose at least 5% of body weight in the first 12 weeks of treatment discontinued medication at 12 weeks.
Bariatric Surgeries Avoided

Total Model Assessed Patients

Patients Undergoing Surgery \textit{without} prior lorcaserin use

4,431

0

Patients Undergoing Surgery \textit{following} lorcaserin use

4,100

331 (7.5%)

Net Surgeries Avoided
## Model Inputs

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorcanerin Monthly Acquisition Costs</td>
<td>$140</td>
</tr>
<tr>
<td>Cost of Bariatric Surgery</td>
<td>$21,000</td>
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<tr>
<td>≥ 5% Weight Loss at 12 Weeks Time on Medication</td>
<td></td>
</tr>
<tr>
<td>BMI &lt; 35</td>
<td>24 Months</td>
</tr>
<tr>
<td>BMI ≥ 35</td>
<td>12 Months</td>
</tr>
<tr>
<td>&lt; 5% Weight Loss at 12 Weeks Time on Medication</td>
<td>3 Months</td>
</tr>
<tr>
<td>Avoided Surgeries</td>
<td>331 (7.5%)</td>
</tr>
</tbody>
</table>
Results

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Scenario With Medication</th>
<th>Scenario Without Medication</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorcaserin Acquis</td>
<td>$4,791,011</td>
<td>$0</td>
<td>$4,791,011</td>
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<tr>
<td>Bariatric Surgery</td>
<td>$86,097,488</td>
<td>$93,058,245</td>
<td>-$6,960,757</td>
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<tr>
<td>Total</td>
<td>$90,888,499</td>
<td>$93,058,245</td>
<td>-$2,169,746</td>
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<tr>
<td>Per Member per Month (PMPM)</td>
<td>$1.58</td>
<td>$1.62</td>
<td>-$0.04</td>
</tr>
</tbody>
</table>
Summary

• The number of patients predicted to undergo bariatric surgery was 4,431.
• Of these, 1,883 (42.0%) would respond to lorcaserin treatment and 331 would reach a BMI ≤ 35 at one year.
• The model predicted that with lorcaserin treatment, medication costs at two years would total $4.8 million.
• Bariatric surgery costs totaled $86.1 million, compared to $93.1 million if lorcaserin was not used.
• Predicted cost savings for patients who would avoid bariatric surgery were estimated at $2.2 million, or $.04 PMPM.
Thank You