Relevance to Population: Primary prevention of coronary heart disease offers the greatest opportunity for reducing the burden of coronary heart disease in the United States. The clinical approach to primary prevention is founded on the public health approach of therapeutic lifestyle changes. Nonetheless, some persons at higher risk because of high LDL cholesterol levels or because of multiple risk factors are candidates for LDL-lowering drugs. UPMC Health Plan is committed to preventing the development and progression of cardiovascular disease and to reducing the risk for major cardiovascular events. Hyperlipidemia was among the top clinical conditions at UPMC Health Plan in 2010.

Population Covered by Guideline: All adult members age 18 and older

Clinical Indicators Measured by UPMC Health Plan:
1. The percentage of members with a diagnosis of AMI, PTCA, CABG or ischemic vascular disease (IVD) who had an LDL-C level measured within the previous calendar year. HEDIS®
2. The percentage of members with a diagnosis of AMI, PTCA, CABG or ischemic vascular disease (IVD) who had an LDL-C level controlled (< 100mg/dl) within the previous calendar year. HEDIS®


Step I — First consider clinical or laboratory assessment to exclude secondary causes of elevated LDL cholesterol or other forms of hyperlipidemia. Secondary causes of hyperlipidemia include:1
- Diabetes
- Hypothyroidism
- Obstructive Liver Disease
- Chronic renal failure
- Drugs that increase LDL cholesterol and decrease HCL cholesterol (e.g., alcohol, hormones or birth control pills, anabolic steroids, isotretinoin (for acne), certain anti-HIV drugs, cyclosporine, thiazide diuretics, beta blockers, atypical antipsychotics).

Step II — Assess the number of independent Cardiovascular Risk Factors in addition to elevated LDL cholesterol level (Table 1) 1:

Table 1 — Independent cardiovascular risk factors besides elevated LDL cholesterol:
- Family history of premature CAD: Male 1st degree relative < 55 years old; Female 1st degree relative < 65 years old
- Age: Male > 45 years; Female > 55 years
- Hypertension: BP > 140/90 mmHg or on antihypertensive therapy
- Low HDL-C: < 40 mg/dl
- Cigarette smoking, smokeless tobacco, nicotine use
- Diabetes
- Obesity
- Metabolic Syndrome (Table 2).

Table 2 — Clinical Characteristics for Identification of Metabolic Syndrome (syndrome of excessive abdominal fat, insulin resistance, hypertension, elevated triglycerides, and low HDL-C level). 1

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Defining Level</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal Obesity</td>
<td>Waist Circumference</td>
<td>Abdominal obesity is more highly correlated to metabolic syndrome than is general obesity as determined by BMI.</td>
</tr>
<tr>
<td>Males</td>
<td>&gt; 40 inches (&gt; 102 cm)</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>&gt; 35 inches (&gt; 88 cm)</td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td>≥ 150 mg/dl</td>
<td></td>
</tr>
<tr>
<td>HDL Cholesterol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>&lt; 40 mg/dl</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>&lt; 50 mg/dl</td>
<td></td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>≥ 130/≥ 85 mmHg</td>
<td></td>
</tr>
</tbody>
</table>
Fasting Glucose | ≥ 110 mg/dl

**Step III** — Calculate the patient’s 10-year risk for developing Coronary Heart Disease (CHD) using the Framingham Risk Score Model (calculate using Appendix 1 for Males and Appendix 2 for Females). Risk factors included in the Framingham calculation are age, total cholesterol, HDL cholesterol, systolic blood pressure, treatment for hypertension, and cigarette smoking. The levels of Framingham risk used in this guideline to determine management of abnormal cholesterol levels are presented below in Table 3.

**Table 3** — Levels of 10-Year Risk (%) for Developing CHD (used in the ATP III Cholesterol Management Guideline — Table 4) 

<table>
<thead>
<tr>
<th>Risk Levels</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10%</td>
<td>Most patients with 0–1 CHD risk factors have a CHD risk &lt; 10% and a Framingham Risk assessment is not considered necessary.</td>
</tr>
<tr>
<td>10 – 20%</td>
<td>Typically people with 2+ risk factors places them at short- and long-term risk for CHD.</td>
</tr>
<tr>
<td>&gt; 20%</td>
<td>This category represents patients with known CHD or CHD equivalent conditions.</td>
</tr>
<tr>
<td></td>
<td>Patients with CHD</td>
</tr>
<tr>
<td></td>
<td>o CHD includes history of MI, unstable angina, stable angina, coronary artery revascularization (angioplasty or bypass surgery), or evidence of clinically significant myocardial ischemia.</td>
</tr>
<tr>
<td></td>
<td>Patients with CHD equivalent</td>
</tr>
<tr>
<td></td>
<td>o CHD equivalent includes patients with non-coronary forms of atherosclerosis, including peripheral vascular disease, abdominal aortic aneurysm, carotid artery disease, diabetes, and ≥2 cardiovascular risk factors with 10-year risk for CHD &gt;20%.</td>
</tr>
</tbody>
</table>
Step IV — Select treatment options based on the Adult Treatment Panel III Guidelines (Table 4).¹

**Table 4 — Adult Treatment Panel III (ATP III) Guidelines for LDL Cholesterol Management**

<table>
<thead>
<tr>
<th>Number of CHD Risk Factors</th>
<th>Percent 10-year CHD Risk</th>
<th>LDL Goal</th>
<th>LDL at which to start TLC*</th>
<th>LDL at which to start Drug Therapy</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 0─1                        | < 10%                     | < 160    | ≥ 160                     | ≥ 190 (after 3 mo. lifestyle therapies) | Therapeutic Goal: reduce long-term risk
|                            |                           |          |                           |                                   | Most with 0─1 risk factors have a < 10% 10-yr risk
|                            |                           |          |                           |                                   | LDL-lowering drug optional with LDL 160-189
|                            |                           |          |                           |                                   | Factors favoring drug therapy:
|                            |                           |          |                           |                                   |  Severe single risk factor
|                            |                           |          |                           |                                   |  Multiple life-habit risk factors
| 2+ (Multiple)              | < 10%                     | < 130    | ≥ 130                     | ≥ 160 (after 3 mo. lifestyle therapies) | Therapeutic Goal: reduce long-term risk
| 10-20%                    | < 130                     | ≥ 130 (Initiate immediately) | ≥ 130 (after 3 mo. lifestyle therapies) | Therapeutic Goal: reduce short- and long-term risk
| CHD and Risk Equivalents   | > 20%                     | < 100 (optional: < 70)      | ≥ 100 (optional: > 70)             | ≥ 130 (optional: 70 – 129)          | Therapeutic Goal: reduce short- and long-term risk

* Therapeutic Lifestyle Changes (Table 5)
### Table 4 — Adult Treatment Panel III (ATP III) Guidelines for LDL Cholesterol Management (cont.)

<table>
<thead>
<tr>
<th>CHD or Equivalent AND</th>
<th>Baseline (or on treatment): LDL &lt; 100 (optional: 70)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|                       | • Further LDL-lowering is not required  
|                       | • TLC recommended  
|                       | • Consider treatment of high triglycerides/low HDL  
| CHD or Equivalent AND | Baseline (or on treatment): LDL 100–129 |  
|                       |  
|                       | • Initiate or intensify TLC therapies  
|                       | • Initiate or intensify LDL-lowering drugs  
|                       | • Assess for and treat metabolic syndrome  
|                       |   ➢ Stress weight reduction and increased exercise  
|                       | • Drug therapy for high triglycerides and/or low HDL  
|                       |   ➢ Fibrates or nicotinic acid  
| CHD or Equivalent AND | Baseline (or on treatment): LDL ≥ 130 |  
|                       |  
|                       | • Intensive lifestyle therapies  
|                       | • Maximal control of other risk factors  
|                       | • Consider starting LDL-lowering drugs simultaneously with lifestyle therapies  

### Table 5 — Therapeutic Lifestyle Changes (TLC): ¹

1. **Dietary Recommendations (nutrient composition of the TLC diet):**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated fat</td>
<td>Less than 7% of total daily calories</td>
</tr>
<tr>
<td>Trans-fatty acids</td>
<td>Reduce to a very low level</td>
</tr>
<tr>
<td>Polyunsaturated fats</td>
<td>Up to 10% of total daily calories</td>
</tr>
<tr>
<td>Monounsaturated fats</td>
<td>Up to 20% of total daily calories</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Less than 200 mg per day</td>
</tr>
<tr>
<td>Total fat</td>
<td>25%–35% of total daily calories</td>
</tr>
<tr>
<td>Carbohydrates*</td>
<td>50%–60% of total daily calories</td>
</tr>
<tr>
<td>Protein</td>
<td>15% of total daily calories</td>
</tr>
<tr>
<td>Fiber</td>
<td>20–30 grams per day</td>
</tr>
<tr>
<td>Viscous (soluble) fiber</td>
<td>Therapeutic Option: increase LDL-lowering soluble fiber (10–25 grams per day)</td>
</tr>
<tr>
<td>Plant stanols/sterols</td>
<td>Therapeutic Option: increase LDL-lowering plant stanols/sterols</td>
</tr>
<tr>
<td>Omega-3 fatty acids</td>
<td>Encourage consumption of omega-3 fatty acids in the form of fish or in capsule form (1g/day) for risk reduction. For treatment of elevated TG, higher doses are usually necessary for risk reduction.</td>
</tr>
<tr>
<td>Total calories (energy)**</td>
<td>Balance energy intake and expenditure to maintain desirable body weight/prevent weight gain</td>
</tr>
</tbody>
</table>

*Primarily from foods rich in complex carbohydrates, including whole grains, fruits, and vegetables  
**Daily energy expenditure should include at least moderate physical activity (contributing approximately 200 Kcal per day)

2. **Weight control/reduction**

3. **Gradually increase and maintain regular exercise (30 to 45 minutes, 3 to 6 times per week)**
**Table 6 — Drugs Affecting Lipoprotein Metabolism**

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Agents and Daily Doses</th>
<th>Lipid Effects</th>
<th>Major Side Effects</th>
<th>Contraindications</th>
<th>Clinical Trial Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMG CoA reductase inhibitors</td>
<td>Lovastatin (20–80 mg) Pravastatin (20–40 mg) simvastatin (20–80 mg) Fluvastatin (20–80 mg) Atorvastatin (10–80 mg) rosuvastatin (10–40 mg)</td>
<td>LDL ↓ 18%–55% HDL ↑ 5%–15% TG ↓ 7%–30%</td>
<td>Myopathy; Increased liver enzymes</td>
<td>Absolute: active or chronic liver disease; Relative: concomitant use of certain drugs*</td>
<td>Reduced major coronary events, CHD deaths, need for coronary procedures, stroke, and total mortality</td>
</tr>
<tr>
<td>Cholesterol absorption inhibitor</td>
<td>ezetimibe (10 mg) may be used alone or with a statin **</td>
<td>LDL ↓ 23% from statin baseline¹</td>
<td>Severe muscle pain (rarely); back pain; liver dysfunction (esp. combined w/statin); dizziness; headache; sexual dysfunction</td>
<td>Absolute: active liver disease when combined with a statin; avoid use with fibrate drugs; Relative: caution use with certain drugs, e.g., warfarin and cyclosporine</td>
<td>Results of effects on cardiovascular morbidity and mortality are not yet established</td>
</tr>
<tr>
<td>Bile acid sequestrants</td>
<td>cholestyramine (4-16 g) colesteplol (5-20 g) colestevam (2.6-3.8 g)</td>
<td>LDL ↓ 15%–30% HDL ↑ 3%–5% TG → no Δ or ↑</td>
<td>GI distress; Constipation; Decreased absorption of other drugs</td>
<td>Absolute: dysbeta-lipoproteinemia; TG &gt; 400 mg/dl; Relative: TG &gt; 200 mg/dl</td>
<td>Reduced major coronary events and CHD deaths</td>
</tr>
<tr>
<td>Nicotinic acid</td>
<td>rapid release (1.5-3 g) extended release (1-2 g) sustained release (1-2 g)</td>
<td>LDL ↓ 5%–25% HDL ↑ 15%–35% TG ↓ 20%–50%</td>
<td>Flushing; Hyperglycemia; Hyperuricemia; gout; UGI distress; Hepatotoxicity</td>
<td>Absolute: chronic liver disease; severe gout; Relative: diabetes; hyperuricemia; PUD</td>
<td>Reduced major coronary events and possibly total mortality</td>
</tr>
<tr>
<td>Fibric acids</td>
<td>gemfibrozil (600mg BID) fenofibrate (200 mg QD) clofibrate (1000 mg BID)</td>
<td>LDL ↓ 5%–20% HDL ↑ 10%–20% TG ↓ 20%–50%</td>
<td>Dyspepsia; Gallstones; Myopathy; Unexplained non-CHD deaths in WHO study</td>
<td>Absolute: severe renal disease; severe hepatic disease</td>
<td>Reduced major coronary events</td>
</tr>
</tbody>
</table>

*Cyclosporine, macrolide antibiotics, various antifungal agents, and cytochrome P-450 inhibitors (fibrates and niacin) should be used with caution.

**In patients with familial hypercholesterolemia, combined therapy with ezetimibe and simvastatin did not result in significant differences in intima-media thickness, as compared with simvastatin alone, despite decreases in levels of LDL-C and C-reactive protein (ENHANCE Trial).

***Correction of hypertriglyceridemia by fenofibrate may affect LDL cholesterol differently according to hyperlipidemia classification:
- Type III and IV hyperlipidemia – LDL significantly increases
- Type IIb – LDL significantly decreases

UPMC HEALTH PLAN ADULT CHOLESTEROL MANAGEMENT
Initial QIC Approval 11/1999
Approved by QIC 10/2011

Page 5
**Key Points:** Statins are the most effective and efficient class of drugs for lowering both LDL-C levels and cardiovascular events.

- They are effective for both primary and secondary prevention or coronary heart disease and cardiovascular events.
- The ability of statins to reduce cardiovascular events exceeds that predicted from LDL-C-lowering alone.
- Other protective actions may include intravascular anti-inflammatory, anti-thrombotic and plaque-stabilizing effects.

**Appendix 1 — Framingham Estimate of 10-Year CHD Risk for Males (Framingham Point Scores)**

<table>
<thead>
<tr>
<th>Age</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-34</td>
<td>-9</td>
</tr>
<tr>
<td>35-39</td>
<td>-4</td>
</tr>
<tr>
<td>40-44</td>
<td>0</td>
</tr>
<tr>
<td>45-49</td>
<td>3</td>
</tr>
<tr>
<td>50-54</td>
<td>6</td>
</tr>
<tr>
<td>55-59</td>
<td>8</td>
</tr>
<tr>
<td>60-64</td>
<td>10</td>
</tr>
<tr>
<td>65-69</td>
<td>11</td>
</tr>
<tr>
<td>70-74</td>
<td>12</td>
</tr>
<tr>
<td>75-79</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Cholesterol</th>
<th>Age 20-39</th>
<th>Age 40-49</th>
<th>Age 50-59</th>
<th>Age 60-69</th>
<th>Age 70-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 160</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>160-199</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>200-239</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>240-279</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>≥ 280</td>
<td>11</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Points in boxes

<table>
<thead>
<tr>
<th>Smoking Status</th>
<th>Age 20-39</th>
<th>Age 40-49</th>
<th>Age 50-59</th>
<th>Age 60-69</th>
<th>Age 70-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonsmoker</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Smoker</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HDL (mg/dl)</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 60</td>
<td>-1</td>
</tr>
<tr>
<td>50-59</td>
<td>0</td>
</tr>
<tr>
<td>40-49</td>
<td>1</td>
</tr>
<tr>
<td>&lt; 40</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Systolic BP (mmHg)</th>
<th>If Untreated</th>
<th>If Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 120</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>120-129</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>130-139</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>140-159</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>≥ 160</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Cholesterol</th>
<th>Age 20-39</th>
<th>Age 40-49</th>
<th>Age 50-59</th>
<th>Age 60-69</th>
<th>Age 70-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 0</td>
<td>&lt; 1</td>
<td>(continued)</td>
<td>9</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>10</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>11</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>12</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>13</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
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<td>16</td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>15</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>16</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>≥ 17</td>
<td>≥ 30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*HDL like Total Cholesterol should be an average of at least 2 measurements from lipoprotein analysis.
Appendix 2 — Framingham Estimate of 10-Year CHD Risk for Females (Framingham Point Scores)

Age:

<table>
<thead>
<tr>
<th>Age</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-34</td>
<td>-7</td>
</tr>
<tr>
<td>35-39</td>
<td>-3</td>
</tr>
<tr>
<td>40-44</td>
<td>0</td>
</tr>
<tr>
<td>45-49</td>
<td>3</td>
</tr>
<tr>
<td>50-54</td>
<td>6</td>
</tr>
<tr>
<td>55-59</td>
<td>8</td>
</tr>
<tr>
<td>60-64</td>
<td>10</td>
</tr>
<tr>
<td>65-69</td>
<td>12</td>
</tr>
<tr>
<td>70-74</td>
<td>14</td>
</tr>
<tr>
<td>75-79</td>
<td>16</td>
</tr>
</tbody>
</table>

Total Cholesterol: (This should be an avg. of at least 2 measurements from lipoprotein analysis.)

<table>
<thead>
<tr>
<th>Total Cholesterol</th>
<th>Age 20-39</th>
<th>Age 40-49</th>
<th>Age 50-59</th>
<th>Age 60-69</th>
<th>Age 70-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 160</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>160-199</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>200-239</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>240-279</td>
<td>11</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>≥ 280</td>
<td>13</td>
<td>10</td>
<td>7</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Points in boxes

Smoking Status: (“Smoker” means any cigarette smoking in the past month.)

<table>
<thead>
<tr>
<th>Smoking Status</th>
<th>Age 20-39</th>
<th>Age 40-49</th>
<th>Age 50-59</th>
<th>Age 60-69</th>
<th>Age 70-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonsmoker</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Smoker</td>
<td>9</td>
<td>7</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

HDL* (mg/dl)

<table>
<thead>
<tr>
<th>HDL</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 60</td>
<td>-1</td>
</tr>
<tr>
<td>50-59</td>
<td>0</td>
</tr>
<tr>
<td>40-49</td>
<td>1</td>
</tr>
<tr>
<td>&lt; 40</td>
<td>2</td>
</tr>
</tbody>
</table>

Systolic Blood Pressure: (BP reading taken at the time of assessment)

<table>
<thead>
<tr>
<th>Systolic BP (mmHg)</th>
<th>If Untreated</th>
<th>If Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 120</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>120-129</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>130-139</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>140-159</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>≥ 160</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

Point Total | 10-Year Risk %

<table>
<thead>
<tr>
<th>Point Total</th>
<th>10-Year Risk %</th>
</tr>
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<tbody>
<tr>
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<td>&lt; 1</td>
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<td>9</td>
<td>1</td>
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<td>1</td>
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<tr>
<td>11</td>
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<tr>
<td>12</td>
<td>1</td>
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<td>2</td>
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<tr>
<td>14</td>
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<td>16</td>
<td>4</td>
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<td>17</td>
<td>5</td>
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Point Total | 10-Year Risk %

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<th>Point Total</th>
<th>10-Year Risk %</th>
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<td>24</td>
<td>27</td>
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<tr>
<td>≥ 25</td>
<td>≥ 30</td>
</tr>
</tbody>
</table>

*HDL like Total Cholesterol should be an average of at least 2 measurements from lipoprotein analysis.
Cholesterol Management Algorithm Using Framingham Risk Assessment

Management of General Population — Cholesterol Screening

Men and Women Age 20 or More: Full Lipid Profile

Determine number of independent CHD Risk Factors besides LDL cholesterol from the following list:
- Family history of premature CAD: Male 1st degree relative < 55 years old; Female < 65 years old
- Age: Male > 45 years; Female > 55 years
- Hypertension: BP > 140/90 mmHg or on antihypertensive therapy
- Low HDL-C: < 40 mg/dl
- Cigarette smoking, smokeless tobacco, nicotine use
- Diabetes
- Obesity
- Metabolic Syndrome (Table 2)

Risk Factors:
- 0-1 Risk Factors
  - < 10%
    - LDL < 160
      - Recheck TLC; drug Rx optional LDL goal < 160
    - LDL ≥ 160
      - Start TLC; drug Rx (if not at goal in 3 mo.) LDL goal < 160
    - LDL ≥ 190
      - TLC + drug (if not at goal in 3 mo.) LDL goal < 160

- 2+ Risk Factors
  - 10-20%
    - LDL ≥ 130
      - Start TLC; drug Rx (if not at goal in 3 mo.) LDL goal < 130
    - LDL ≥ 160
      - TLC + drug (if not at goal in 3 mo.) LDL goal < 130
  - < 10%
    - LDL ≥ 100
      - TLC + drug; treat ↑TG & ↓HDL
    - LDL 100-129
      - TLC; LDL drug; treat metabolic syndrome
    - LDL > 130
      - LDL goal < 100 (optional < 70)
      - Start TLC & LDL drug together; max. risk-factor control

Risk Levels:
- LDL < 160
- LDL ≥ 160
- LDL ≥ 190
- LDL ≥ 130
- LDL ≥ 160
- LDL ≥ 130
- LDL ≥ 130
- LDL ≥ 130
- LDL ≥ 130
- LDL ≥ 130
- LDL ≥ 130
- LDL ≥ 130
Optimal Cholesterol Management Algorithm if Framingham Risk Assessment Is Not Performed

Management of General Population -- Cholesterol Screening

Men and Women Age 20 or More: Full Lipid Profile

Determine number of independent CHD Risk Factors besides LDL cholesterol from the following list:

- Family history of premature CAD: Male 1st degree relative < 55 years old; Female < 65 years old
- Age: Male > 45 years; Female > 55 years
- Hypertension: BP > 140/90 mmHg or on antihypertensive therapy
- Low HDL-C: ≤ 40 mg/dl
- Cigarette smoking, smokeless tobacco, nicotine use
- Diabetes
- Obesity
- Metabolic Syndrome (Table 2)

0-1 Risk Factors

- LDL < 160
  - Start TLC; drug Rx optional LDL goal < 160
- LDL ≥ 160
  - TLC + drug (if not at goal in 3mo)
- LDL ≥ 190
  - LDL goal < 160
  - Recheck LDL 1 year

2+ Risk Factors

- LDL ≥ 130
  - TLC + drug (if not at goal in 3mo)
- LDL goal < 160

CHD or Equivalent

- LDL < 100
  - TLC; LDL drug; treat ↑TG & ↓HDL
- LDL 100 - 129
  - Intensify TLC & drugs for LDL, TG, HDL
- LDL ≥ 130
  - Start TLC & LDL drug together; max risk-factor control

LDL Goal < 100 (optional < 70)
Clinical practice guidelines are designed to assist clinicians by providing a framework for the evaluation and treatment of patients. The adult cholesterol management guideline is based on the current Adult Treatment Panel III (ATP III) of the National Cholesterol Education Program, National Heart, Lung, and Blood Institute 2002, American College of Cardiology Foundation and the American Heart Association 2004. The current guideline is available at http://www.nhlbi.nih.gov/guidelines/cholesterol/index.htm.

Additional Resources for UPMC Health Plan Members

- MyHealth Advice Line is staffed by experienced Registered Nurses and is available 24/7 to provide telephone support to members. Call 1-866-918-1591. TTY/TDD users should call 1-866-918-1593.

- Health Coach Programs provide intensive case management for members with specific chronic illnesses or conditions. The programs are built upon best practices and accepted clinical guidelines and include:
  - Diabetes
  - Asthma/COPD
  - Behavioral Health
    - Depression
    - Anxiety
    - ADHD
    - Substance Abuse
  - Cardiovascular
    - Heart failure
    - Coronary artery disease
    - Hypertension
    - Hyperlipidemia.
  - Low Back Pain

Members and providers can obtain additional information about the health coach programs by calling 1-866-778-6073.

- Online interactive preventive health programs and resources are available in partnership with WebMD at www.upmchealthplan.com.
  - MyHealth OnLine Tobacco Cessation Program
  - MyHealthOnLine Physical Activity Program
  - MyHealthOnLine Nutrition Program
  - MyHealthOnLine Weight Management Program
  - MyHealthOnLine Stress Management Program
  - MyHealthOnLine Emotional Health Program

Scientific Evidence Sources: