screened for plasma lipids. A lipid panel should be measured, preferably after an overnight fast. In most clinical laboratories, the total cholesterol and TGs in the plasma are measured enzymatically, and then after precipitation of apoB-containing lipoproteins, the cholesterol in the supernatant is measured to determine the HDL cholesterol (HDL-C). The LDL cholesterol (LDL-C) is then estimated using the following equation (the Friedewald formula):

$$\text{LDL-C} = \text{total cholesterol} - (\text{TG}/5) - \text{HDL-C}$$

(The VLDL cholesterol content is estimated by dividing the plasma TG by 5, reflecting the ratio of TG to cholesterol in VLDL particles.) This formula is reasonably accurate if test results are obtained on fasting plasma and if the TG level does not exceed ~200 mg/dL; by convention, it cannot be used if the TG level is >400 mg/dL. LDL-C can be directly measured by a number of methods. The non-HDL-C can be easily calculated by subtracting the HDL-C from the total cholesterol. It has the advantage of incorporating the cholesterol contained within VLDL and IDL, which in most cases is also atherogenic and associated with increased ASCVD risk. There is increasing evidence that measurement of plasma apoB levels may provide a better assessment of cardiovascular risk than the LDL-C level, and even the non-HDL-C level, and is recommended by some experts. While this has not yet become standard clinical practice, the data supporting the use of apoB as a risk marker and guide to therapeutic intervention are quite strong. There is also increasing interest in Lp(a), an independent ASCVD risk factor that is highly heritable and may be helpful in risk stratification. In patients with evidence of dyslipidemia, further evaluation and treatment are based on evidence of preexisting ASCVD and clinical assessment of cardiovascular risk using risk calculators such as the American Heart Association (AHA)/American College of Cardiology (ACC) risk calculator as well as, in some cases, based on additional approaches to risk assessment such as apoB and Lp(a) (see “Approach to the Patient” for more detailed discussion).