Experiences in CDT Testing

To the Editor:

I read with interest the letter from Dr. Neal Pickett, Jr. of Jefferson-Pilot Insurance Company (JIM Vol. 29, No. 1, pp64-64) concerning the higher than expected rate of CDT positive results in female applicants. I believe that I have an explanation for these findings.

Carbohydrate-deficient transferrin (CDT) is a fraction of the total transferrin. A proportion of the total transferrin is normally carbohydrate deficient even in alcohol abstainers, just as some portion of the total hemoglobin is normally glycated, even in non-diabetics. Assays which measure CDT as an absolute value are then subject to variations in the concentration in serum, the higher the CDT concentration, regardless of alcohol consumption. At the time the testing was performed, Jefferson Pilot was utilizing a lab that used such an assay that measured the absolute concentration of CDT.

Females are more likely to have elevations in their serum transferrin concentrations in at least two conditions. Transferrin levels increase markedly during pregnancy (particularly during the second and third trimesters) in order to transport iron to the developing fetus. Transferrin levels are also markedly elevated in iron deficiency anemia, which is a condition that is fairly common in pre-menopausal women. Therefore, women of childbearing age can be expected to have higher transferrin levels and a higher proportion of elevated CDT values. To the extent that these females are represented in the total female population of applicants to an insurance company, the positive CDT rate for females may be affected. If most of the female applicants are older, post-menopausal women, there will be less impact on the CDT positive rate in females.

Assays which measure CDT as a percentage of the total transferrin (%CDT) or otherwise normalize the transferrin concentration in the
specimen. LabOne, Inc. currently uses an assay that measures %CDT and our rate of positive results in female applicants is significantly less than the positive rate in male applicants. This is consistent with other published demographic data on the prevalence of alcohol abuse in the US population.

References