

Experience with routine total nonfasting blood cholesterol screening of volunteer blood and component donors

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BACKGROUND: There is an increasing number of blood programs giving donors information about health risks for cardiovascular disease based on a total nonfasting cholesterol level measured at donation.

STUDY DESIGN AND METHODS: Experience with screening 187,714 individual donors for total nonfasting cholesterol was reviewed and results were compared with those for a representative sample of United States adults as published in National Health and Nutrition Examination Surveys. Donors were invited to retrieve their results and were tracked as to whether they used this service or not.

RESULTS: By comparison with the national surveys, more blood donors have normal total nonfasting cholesterol levels and fewer have borderline high or high values as defined by the National Cholesterol Education Program Expert Panel. These observations hold for both males and females across all age ranges from 20 to older than 75 years. Only a minority of donors retrieve their results.

CONCLUSIONS: The blood donor setting can be expanded, by inclusion of total nonfasting cholesterol level, to include screening for cardiovascular disease risk. When compared with the general adult population, donors represent a group at less risk for heart disease.

KEY POINTS:

1. The total nonfasting cholesterol results were reviewed on all volunteers donating during 2008 at Carter BloodCare, the community independent blood center serving the Dallas-Fort Worth metroplex and 56 surrounding counties in north, central, and east Texas.
 - a. While a cholesterol measurement was made on all volunteers at each of their donations, the only results included in this review were each individual's first donation during 2008, regardless of the total number of donations he or she made during the year.
 - b. In this way the authors could compare their results, for a similar time frame, with Health, United States, 2009; a publication, which is prepared by the Centers for Disease Control and Prevention's National Center for Health Statistics, reporting on elements of national health that include the results of monitoring cholesterol levels in American adults over time.
2. The study shows the mean and standard deviation (SD) values for total nonfasting cholesterol in 187,714 individual donors during 2008.
 - a. Male mean cholesterol levels peak in the 35- to 44-year age group before declining, while female mean cholesterol levels peak in the 55- to 64-year age group and then decline.
 - b. At each age range, however, for both males and females, donor mean cholesterol levels are lower than values in the Health, United States, 2009 report.
3. Differences between volunteer blood donors and national report participants are especially evident when the percentages of those with high nonfasting cholesterol levels are compared across the age ranges.

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Experience with routine total nonfasting blood cholesterol screening of volunteer blood and component donors (*continued*)

KEY POINTS (*continued*):

- a. While the patterns are again comparable for both males and females, the percentages of blood donors in the high nonfasting cholesterol range are lower.
 - i. In Health, United States, 2009, 20.8% of men in the 45- to 54-year age range have high cholesterol by comparison with 11.5% of volunteer blood donors at the same age.
 - ii. With regard to women, 30.5% of 55- to 64-year-olds in the national report have high cholesterol levels while only 17.4% of donors have values greater than 240 mg/dL.
4. Regarding younger donors and total nonfasting cholesterol, the observations that 5.5% of teenage male and 7.7% of teenage female blood donors are borderline high and 0.8% of teenage male and 1.3% of teenage female blood donors are high are cause of significant concern.
 - a. Since atherosclerosis can start at an early age, education about risk for cardiovascular disease and risk prevention take on added significance for youth.
5. With regard to donors' interest in choosing to access their total nonfasting cholesterol results, except for men in the 45- to 54-year age range, where 50.7% did retrieve results, only a minority of donors took advantage of this service.
 - a. The age range that included individuals least likely to seek their cholesterol levels was the 16- to 19-year-olds where only 15.1% of the males and 19.1% of the females retrieved their results.
 - b. When donors were grouped according to their risk category, results were retrieved by 36.3% of those with normal cholesterol levels, 46.3% of those with borderline high cholesterol levels, and 45.0% of those with high values.
6. While knowledge of an individual's cholesterol is valuable to those at risk of cardiovascular disease, provided that the information prompts action when indicated, there are added benefits to considering a broader risk profile.
 - a. This profile might include, for example, weight, blood sugar, abdominal girth, and blood pressure.
7. The point has been made on a number of occasions that strategies are needed at many levels in the community, including schools and work sites, to promote healthy lifestyles.
 - a. Strategies that combine donation with additional tests of general health are valuable in defining a role for blood programs to contribute to community health.

