

## ANSWERS

Blood can form a gel when there are high concentrations of proteins, such as IgM and/or IgG antibodies, that precipitate at low temperatures (cryoglobulins) or agglutinate red blood cells (cold agglutinins) (1, 2). A bone marrow biopsy performed on this patient revealed Waldenström macroglobulinemia, which produces large amounts of IgM (3, 4). Warming this patient's sample in a water bath, keeping it on heat packs during transport, and diluting it with warm diluent can reliquefy the sample.

**Author Contributions:** All authors confirmed they have contributed to the intellectual content of this paper and have met the following 3 requirements: (a) significant contributions to the conception and design, acquisi-

tion of data, or analysis and interpretation of data; (b) drafting or revising the article for intellectual content; and (c) final approval of the published article.

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## References

1. McPherson RA, Pincus MR, Henry JB. Henry's clinical diagnosis and management by laboratory methods. 21st ed. Philadelphia: Saunders Elsevier; 2007. p 537–8.
2. Stone MJ, Bogen SA. Evidence-based focused review of management of hyperviscosity syndrome. *Blood* 2012;119:2205–8.
3. Berentsen S, Tjonnfjord GE. Diagnosis and treatment of cold agglutinin mediated autoimmune hemolytic anemia. *Blood Rev* 2012;26:107–15.
4. Gertz MA. Waldenström macroglobulinemia: 2011 update on diagnosis, risk stratification, and management. *Am J Hematol* 2011;86:411–6.

## News &amp; Views

## Economic Rewards for Blood Donation: Validity of the Donor Questionnaire as Litmus Test

Justin D. Kreuter\* and Manish J. Gandhi

In a recent issue of *Science*, Lacetera, Macis, and Slonim summarize new information regarding the impact that economic rewards have on the blood supply and safety (1). For many years, the WHO has taken the stance that economic incentives decrease the safety of the blood supply. In support of the WHO position, the establishment of an all-volunteer blood supply led to a dramatic decrease in the incidence of posttransfusion hepatitis C. The authors submit, however, that the position of the WHO is based on studies that failed to control for several confounding variables (percentage of first-time donors, location of donation, and use of prisoners). Recent randomized field surveys reviewed by the authors found that economic incentives increase donations. Furthermore, they identified a direct relationship between the dollar value of the incentive and

blood donation. It is important to maintain the distinction between a token of appreciation (allowed by WHO) and something with transferable cash value (not allowed by WHO). Donor centers, who are responsible for maintaining an adequate blood supply, must negotiate this fine line. For some time, reward programs have been known to increase the number of donations, yet “too much” of a reward (something with transferable cash value) may give a donor a reason to lie on the donor questionnaire. It is critical to appreciate that the donor questionnaire provides a substantial layer of safety to the blood supply. If answered honestly, the donor questionnaire protects the blood supply from window-period infections (after inoculation, but before testing results are positive), infections that do not have testing available, and emerging infections. Lying about recent intravenous drug use may not be worth a T-shirt with the donor center logo, but \$20 in cash or a gift card might be. The most valuable reward discussed by the authors is a day of paid vacation. Although a day of paid vacation is highly valuable, donors cannot sell this day to another individual; furthermore, the donors receive this day of paid vacation even if they

Division of Transfusion Medicine, Department of Laboratory Medicine and Pathology, Mayo Clinic, Rochester, MN.

\* Address correspondence to this author at: Mayo Clinic, 200 First St. SW, Rochester, MN 55905. Fax 507-284-1399; e-mail kreuter.justin@mayo.edu.

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are not able to successfully donate blood. These aspects are likely critical for maintaining the validity of the donor questionnaire.

The authors cite a study performed in Argentina, a middle-income country that is primarily dependent on blood donations from family and friends. Interestingly, the economics of reward were different in Argentina from those in the US and Europe. This finding suggests that individuals may experience the reward of an incentive program differently, depending on their cultural values. The blood bank community historically has had a difficult time obtaining donations from minority populations. Perhaps these findings will stimulate research into the interplay between rewards for blood donation and cultural values.

As summarized by the authors, all studies of economic incentives have shown just a temporary increase in donations. The blood bank community is most interested in developing and nurturing the regular habit of blood donation. The regular blood donor evens out

the peaks and troughs of the blood supply. In addition, regular blood donors have the lowest risk of infectious disease transmission.

We need donors. We need healthy donors. We need healthy donors from a range of ethnic backgrounds.

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### Reference

1. Lacetera N, Macis M, Slonim R. Public health. Economic rewards to motivate blood donations. *Science* 2013;340:927–8.