

A recent National Heart, Lung, and Blood Institute state-of-the-science symposium concluded that many opportunities exist to improve transfusion practice.³ At Intermountain Healthcare we have attempted to improve NICU transfusion practice using a series of initiatives and studies, including instituting guidelines for NICU transfusions,⁴ audits of compliance with these guidelines, and creating new ways to make it easier for busy clinicians to comply with these guidelines.⁵ The present analysis was an extension of this effort. Indeed, we found that even without the monthly reports, reminders, central scrutiny, and programmatic emphasis, compliance with transfusion guidelines remained high and was accompanied by yet lower transfusion rates. The reasons for the continued success are not completely clear. We speculate that electronic transfusion ordering is partly responsible, because clinicians are faced with the guidelines each time they enter a transfusion order.^{1,5} This reasoning is consistent with a recent report from the Mayo Clinic, where instituting decision support for transfusions through electronic physician order entry was accompanied by a decrease red blood cell (RBC) transfusion rate among critically ill adults.⁶ Perhaps the continued success is partly due to our clinicians recognizing that in the previous study, transfusion rates were reduced, blood bank resources were conserved, and financial savings were realized, while no adverse effects could be identified in any measure of patient outcome.⁵

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest relevant to this letter to the editor.

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Frequency of severe allergies in blood donors

Severe allergic reactions, also called anaphylactic reactions or anaphylactoid reactions, are a rare but potentially fatal complication of transfusion. These reactions are thought to be caused by interaction between an allergen and a preformed immunoglobulin (Ig)E antibody, although their pathogenesis is incompletely understood.¹ In a minority of cases, recipient antibody directed against IgA is implicated. There have also been rare case reports of passive transfer of donor IgE antibodies in plasma-containing components, resulting in allergic reactions in recipients who are subsequently exposed to the allergen.^{1,2} In a study performed in Scandinavia, up to 27% of donors had IgE antibodies to at least one of 14 common food and inhalant allergens.³ Transfer of peanut allergen from platelet donors who had eaten peanuts the evening before donation has also been associated with a severe anaphylactic reaction in a 6-year-old recipient with a history of peanut allergy.⁴ In a recent Canadian case, a patient developed a severe anaphylactic reaction within minutes of ingesting peanut butter 2 days after transfusion of fresh-frozen plasma. The 19-year-old donor was found to have a history of severe peanut allergy and anaphylaxis.² This case motivated us to assess the frequency of severe allergy in Canadian Blood Services donors as part of a large, anonymous donor

TABLE 1. Severe allergies reported in donors

Severe allergy	Number having allergy	% of donors with severe allergies
Medications	793	57.6
Food		
Peanut or other nut	134	9.7
Shellfish or fish	143	10.4
Other food	143	10.4
Pollen	234	17.0
Insect stings	210	15.2
Animal dander	197	14.3

survey. Details of the survey have been described elsewhere.⁵ In brief, an anonymous questionnaire was mailed to 40,000 successful whole blood donors in 2008, 2 to 6 weeks after their donations. The study sample was stratified by region and first-time donors were over-sampled to constitute 50% of the sample population. Donors were asked if they had any allergies and, if so, did they consider these allergies to be severe (possibly life-threatening).

The response rate was 45.5%. A history of any allergy was reported in 7234 of 17,961 donors (40.3%). A history of severe allergy was reported in 1376 donors (7.7%). The frequency of severe allergies is shown in Table 1, with 1376 donors reporting 2004 severe allergies. Peanut or other nut allergies were reported by 9.7% of donors with severe allergies, or 0.74% of all donors. Allergy rates were similar in first-time versus repeat donors and in younger versus older donors (data not shown). Rates were higher in female donors compared to male donors (history of any allergy or severe allergy in 36.2 and 5.9% of male donors, compared to 44.3 and 9.4% for female donors, respectively, $p < 0.01$).

We conclude that a self-reported history of severe allergy is common in our donor population. In particular, the frequency of severe peanut allergy of 0.74% is similar to that described in the general population.⁶ It is uncertain what donors considered to be a severe, life-threatening allergy and it is possible that there was overreporting of severe allergies. However, this same problem would likely be present if a question about severe allergies was added to the donor health assessment questionnaire. At the present time, Canadian donors are asked if they are experiencing an allergy on

the day of donation, and donors would be deferred if they are feeling unwell due to respiratory allergic symptoms. However, donors are not asked about history of severe allergy. Attempting to reduce the frequency of extremely rare cases of passive transfer of donor IgE antibodies by deferring donors with a history of severe allergy would result in considerable donor loss. Although some European countries may defer donors with a history of severe allergies, differences between hemovigilance schemes make it difficult to compare rates of anaphylactic reactions between different jurisdictions.

CONFLICT OF INTEREST

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