

**STATEMENT OF  
THE AMERICAN ASSOCIATION OF BLOOD BANKS  
BEFORE THE BLOOD PRODUCTS ADVISORY COMMITTEE  
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**Platelet Pooling**

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The American Association of Blood Banks (AABB) is the professional society for over 8,000 individuals involved in blood banking and transfusion medicine and represents approximately 2,000 institutional members, including blood collection centers, hospital-based blood banks, and transfusion services as they collect, process, distribute, and transfuse blood and blood components and hematopoietic stem cells. Our members are responsible for virtually all of the blood collected and more than 80 percent of the blood transfused in this country. For over 50 years, the AABB's highest priority has been to maintain and enhance the safety and availability of the nation's blood supply.

**The AABB strongly encourages the FDA to allow pre-storage pooling of platelets derived from whole blood and further encourages the FDA to request only scientifically and medically reasonable data to support such a change in approved practice.**

The need for pre-storage pooling arises from the desire of blood collecting facilities to perform cultures of all platelet units to interdict those that are bacterially contaminated. Blood bankers recognize that bacterial contamination of platelets is the greatest residual infectious disease threat to transfusion recipients and causes both frequent deaths and substantial morbidity. Improvement in skin cleansing practices and diversion of the first few milliliters of collected blood are being implemented to reduce contamination of components by skin flora. Currently, however, the most effective way of dealing with this significant problem is to perform a bacterial culture on each unit. This is already feasible with apheresis platelet units, but culturing individual platelet units derived from whole blood imposes serious additional difficulties. The volume needed for the culture to capture contaminating bacteria will remove a significant portion of the small volume in a unit of platelets from whole blood, thereby reducing its clinical efficacy. Furthermore, the sheer number of cultures to be performed will overwhelm the technical capabilities and financial resources of the transfusion system. Blood bankers want to address this issue, but we need a practical way of doing so.

The AABB believes there are already adequate data to support the practice of storing pooled platelet concentrates for the remainder of the usual storage period of its individual units, providing that bacteria are reliably detected in the pool. First, ample data are available and have

been summarized today by Dr. Snyder that this pooling does not lead to immunologic activation between donors such that a "mixed lymphocyte reaction" occurs. Second, the sterile connections through which the pooling will be conducted have already been discussed by this committee; BPAC determined that appropriate use of a sterile connecting device will not increase the likelihood of contamination. The resulting pool of platelets will need to be stored in a larger bag, of course, to facilitate the necessary gas exchange during storage. Manufacturers of bags used for storage of apheresis platelet units already have documented the capabilities of their bags to hold the requisite volume and platelet content of apheresis platelet units, and we believe one can reasonably extrapolate these data to whole blood-derived platelets. Finally, we must not ignore the experience of others. Blood centers across Western Europe have been pooling platelets derived from whole blood for many years very successfully. Although these are usually derived from buffy coats, they provide an adequate, safe system for platelet storage. There should be no need to conduct studies to document again the in vivo recovery and survival nor the clinical utility of using pooled platelets.

The agency is concerned that the increased volume of a pool of platelets, in contrast to a single unit's volume, would allow contaminating bacteria to generate a larger inoculum and thus represent a greater risk for patients. The scientific basis underlying this concern is not strong, particularly when the endpoint concentrations are considered. The increased volume of a pool would make a difference only when the bacterial growth had reached a limiting concentration, and this concentration is usually in the tens of millions of bacteria per milliliter and higher. The difference in the total inoculum of bacteria would be higher than that from a single unit (in direct proportion to the number of units in the pool, according to the FDA's concern); however, at such high concentrations, the morbidity is likely to be dramatic regardless of whether the pooling was conducted before or after storage.

The AABB recognizes that authorization of pre-storage pooling will require a reliable system to detect bacterial contamination. The systems already approved for in-process quality control testing offer this capability, and others are known to be under development.

Although bacterial contamination is a very significant threat to platelet transfusion recipients, its relative rarity makes any study conducted on platelets from whole blood collected and stored in the routine manner extremely difficult. The AABB suggests that the in vitro ("spiking") studies that have already been conducted be referenced as the primary basis of acceptance of a bacterial detection system that could be used to allow pre-storage pooling. This would be analogous to using not blood donors but a population at high risk for HIV to document that a new HIV-antibody test was sensitive for detecting that pathogen's presence. The FDA has not based its approval of HIV test kits on the documentation that when donors were tested a second time they remained negative. The effectiveness of these systems could be tested in the "real world" by retesting units at outdate after the initial culture to determine whether the initial culture was accurate. However, the enormous size of such a study, suggested to involve reculturing 50,000 or 100,000 units, will effectively preclude the study's performance. The result will be that a significant proportion of platelets transfused in this country will never be cultured for bacteria, and an opportunity to enhance patient safety will be missed. Instead, we urge the agency to look at the entire problem - that of bacterial contamination as it currently exists and as it could be markedly reduced by culturing pooled units - and exercise its mandate to improve the safety of transfusion by taking reasonable measures.

We would also add that the ability to leukoreduce multiple units of platelets through a single filter as part of the pooling process will provide an economical way of conducting prestorage leukoreduction with all the advantages this committee has already recognized. Since the vast majority of platelet recipients benefit from leukoreduction, and since it is generally accepted that removal of leukocytes prior to storage minimizes the likelihood of febrile reactions, allowing filtration and pooling would be a boon to recipients even beyond facilitation of culturing.

Finally, the addition of bacterial detection systems will necessitate some delay in release of platelets, which may ultimately result in a higher frequency of outdates and wastage. Given that platelets are already in short supply in some areas of the country, a further decrement will worsen these shortages unless the storage period is increased to at least seven days (where it was in the 1970s before recognition of the importance of bacterial contamination was recognized and 5-day storage was adopted). Extension of the dating period for bacterially tested pooled platelets should be encouraged.