

Reengineering transfusion and cellular therapy processes hospitalwide: ensuring the safe utilization of blood products

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Efforts to make blood transfusion as safe as possible have focused on making the blood in the bag as disease-free as possible. The results have been dramatic, and the costs have been correspondingly high. Although blood services will have to continue to deal with emerging pathogens, efforts to reduce the transfusion of infectious agents presently posing a risk will require high incremental costs and result in only improvements of a small magnitude. The other aspect of safe blood transfusion, the actual transfusion process performed primarily in hospitals, has been accorded considerably less interest. We should turn our attention to enhancing overall blood safety by focusing on improving the process of blood transfusion. Errors involving patient, specimen, and blood product identification put transfused patients at risk, increasing the mortality risk for some. Solutions that could improve the transfusion process are discussed as a focus of this article.

PROPOSED RESPONSE TO THE ISSUE

Implementing the following actions would reengineer transfusion services hospital-wide to ensure the safe utilization of blood products:

1. Implement a program of error detection that would report to an organization such as the AABB.
2. Implement new technologies such as bar coding and mechanical barrier devices to reduce transfusion errors and improve safety of blood transfusions.
3. Educate hospital personnel at all levels about transfusion medicine with an emphasis on proper patient and blood product identification.
4. Improve the utilization of blood products.
5. Create a position of VPTA to oversee all transfusion functions within the hospital.
6. Initiate other steps learned to enhance the necessary likelihood of ABO-matched transfusions such as requiring two ABO determinations on a recipient before issuing non-group O RBCs.

There are definite improvements to be made within the transfusion process in the hospital. It is not reasonable to do nothing and embrace the status quo option. Likewise the status quo option with the minimal intervention would not make the kind of gains that appear possible with the reengineering of transfusion processes hospitalwide. Patients are at risk, and steps must be taken to remedy this problem. It is unwise to reject changes because they will increase costs initially. New pharmaceuticals that improve and save lives may be expensive, but they are not rejected because of their cost. New testing for infections in the blood supply is undertaken with little regard to conducting cost-benefit analysis. Compared to the burgeoning costs of health care, the resources needed to improve transfusion safety by reengineering hospitalwide are modest and hospitals need to embrace them to improve the quality of the care they provide to their patients.

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Implement new technologies to reduce transfusion errors and improve safety of blood transfusion

Despite some initial start-up costs, the use of technology should reap considerable benefits with little continued additional costs. This technology could also be shared by other services such as a pharmacy, thereby spreading the costs. This solution confronts the human element head on. While bar code technology is a great step forward, the problem of switched arm bands would continue and the line-of-sight problem is significant. The use of RFID technology overcomes the line-of-sight problem. Privacy concerns, however, make the implantation of such a device an unlikely solution. The development of an RFID device that could be implanted and would disintegrate over time would probably be more acceptable. Biometrics has the advantage of reading what has always been there, alleviating some of the privacy concerns. As important as technology is, it must be combined with other safeguards. The old-fashioned, visual identification of the patient using armbands can still serve a very useful function as a second check. The use of barrier systems such as Bloodloc also provides for increased likelihood of proper identification and is cost-effective.