

COLA Patient Safety Program 2014

Safe storage of blood for transfusion

COLA's Patient Safety Program began in 2008 with the intent of focusing on areas in laboratory medicine that are found to have high error rates and significant impact on patient safety. COLA is also focused on reducing the frequency of citations for criteria that impact, or can potentially impact, patient safety. Through this program, COLA identifies an existing COLA criterion or patient safety issue as the patient safety goal for each year, and provides education on good laboratory practices for implementation of that safety goal. The program is also integrated into the COLA survey process.

The COLA Patient Safety Goal for 2014 focuses on Transfusion Medicine, and only applies to those facilities that store blood products for transfusion. It is:

TS 13: Does an audible alarm sound indicating a power failure or other disruption of refrigeration?

The alarm should be set to activate under conditions that will allow corrective action to be taken **before** blood components or derivatives reach unacceptable temperatures. Prevention and corrective action are the keys to ensuring safe storage of blood products for transfusion purposes.

Be sure that the system produces an alarm in an area that is staffed 24 hours, seven days a week. Alarm checks should be performed and documented regularly.

Consider these important points for proper storage temperatures¹:

- If red blood cells are not stored at the proper temperature, this will greatly reduce the oxygen-carrying ability. There are two main reasons why red blood cells are used in transfusions. One is to restore or help the body maintain its oxygen carrying capacity, and the other is to maintain the volume of blood in the body.
- Keeping red cells at the proper temperature will help minimize any bacterial contamination. Blood stored above 6°C may allow bacteria to increase to such an extent that transfusing the blood could be fatal.
- Red Blood Cells are sensitive to freezing. Storage of red cells below 1°C can cause the red cells to hemolyze. If the hemolyzed blood is transfused, the results can be fatal as well.
- The anticoagulant-preservative solution that is present in the blood bag prevents the blood from clotting and helps the red blood cells remain viable. Storing the red blood cells between 1°C and 6°C will ensure that the nutrients are not used too quickly, helping the red blood cells remain viable until the expiration date.

Storing all blood products, including red cells, plasma, platelets and other products, at the correct temperatures and taking corrective action before temperatures are out of range helps to ensure blood products are available for patients who need transfusions. Consider these facts about blood needs²:

- Every two seconds someone in the U.S. needs blood.
- More than 41,000 blood donations are needed every day.
- A total of 30 million blood components are transfused each year in the U.S.
- A single car accident victim can require as many as 100 units of blood.
- Many cancer patients will need blood, sometimes daily, during their chemotherapy treatment.
- Patients with Sickle Cell disease can require frequent blood transfusions throughout their lives.

Taking action before refrigerator temperatures are out of range is critical to prevent units from being discarded due to improper storage and to ensure a safe blood supply for all patients who need blood transfusions. Transfusing improperly stored blood can put the health of the patient at risk.

Think about this important patient safety goal, and take steps to ensure compliance in your laboratory.

¹ World Health Organization: Guidelines and Principles for Safe Blood Transfusion Practice

² www.redcrossblood.org/learn-about-blood/blood-facts-and-statistics