

Blood Transfusions Are Important Life Saving Treatments

Blood transfusion is one of the most important lifesaving treatments available. Whole blood is comprised of several components: *plasma*, the fluid component that contains several biological elements and clotting factors, and *cellular* components, red blood cells that carry oxygen, white blood cells that work to fight infection, and platelets that participate in the formation of blood clots. Human blood, very much like all other organs, reflects the complex pattern of each individual, genetic identity and hereditary, and familial information. Humans are identified by their blood type in the ABO blood groups and the presence or absence of the Rh factor. Occasionally, some individuals carry rare blood subtypes.

Whole blood, with all its components, is rarely used for transfusion in modern day medical practice. The more common transfusion, when the oxygen-carrying capacity of blood is needed, is transfusion of packed red blood cells. The red cells are separated out under sterile conditions and suspended in a fluid vehicle for transfusion. Red blood cells primarily contain *hemoglobin*, a protein that carries oxygen vital to cells and tissues of the body. Thus, packed red blood cell (PRBC) transfusions are given to raise the level of hemoglobin circulating in the bloodstream of patients when the levels are significantly low, the clinical condition termed *anemia*.

Normal hemoglobin levels are about 14 to 17 grams per 100 milliliters of blood for men and

Wawa Designed After Scottish Course

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green perched on a gravel hillside, are the tiny greens of the 1898 game. They require a cool, steady Scottish eye to hit from the fairway.

Ahead of Alex Smith lay glory as one of the leading players of early 20th-century golf. Mr. Smith won the U.S. Open at Onwentsia in 1906, becoming the first man to card a win with a score below 300, and repeated his victory in 1910. He used his status to move from the Chicago area to a high-status club on Long Island, New York. As far as is known, Mr. Smith never returned to Mackinac Island.

During the 1910s and 1920s, in response to technological changes and the growing popularity of golf, many American nine-hole courses expanded to 18 holes. For example, Newport, site of the inaugural 1895 U.S. Open, was sharply expanded and completely rebuilt; the current course dates back to 1924, and few traces remain of the earlier course. By contrast, Wawashkamo, laid out as a nine-hole course in 1898, would remain that length. It would be little changed after the construction of the current bunkers in 1912. Although unusually challenging for a course of this length, the nine-hole links course would not host a major tournament. Instead, it would serve as Mackinac Island's community golf course and would provide an unusual golfing experience to enthusiasts from all over the world.

Wawashkamo was elevated to the rank of a Historic



Maintaining Your Health on Mackinac

By Yvan Silva, M.D.

12 to 15 for women. Several conditions can lead to low levels of hemoglobin, ranging from acute blood loss or inadequate manufacture of red blood cells because of disease processes. Clearly, individual circumstances vary widely, but anemia, when hemoglobin levels are 7% or less, indicates the need for urgent transfusion. Current medical research shows that levels of 7% or less lead to significant decline in oxygen delivery to vital tissues with potentially dangerous consequences.

There are many reasons that transfusions may be needed. Blood loss from internal bleeding or injuries is commonly seen in emergency situations, blood loss during or after major surgery, treatment for leukemia and other types of cancer, aftereffects of chemotherapy and other cancer treatments, chronic anemia resulting from chronic illness, bleeding disorders, and other causes like malnutrition and deficiency syndromes.

Testing for compatibility is essential for safe blood transfusion. Typing and cross-matching are the techniques used to identi-

fy commonality between the recipient and blood donor, matching for ABO compatibility, Rh factor, and other possible rare blood subtypes. Several other safety procedures are employed for preservation, shelf life, and infection control. The ideal transfusion is done to bring hemoglobin levels to normal without the undesirable side effects of a transfusion reaction. When these occur, they can range from mild fever or chills to severe. In the case of ABO incompatibility, they can be fatal.

An important imperative in the field of blood and blood products is the control of infection risk. Blood donors give voluntarily. Every blood donor is carefully screened, and unhealthy individuals and carriers of chronic disease are excluded. Each unit of blood is tested for the presence of viruses, including hepatitis, the virus that causes AIDS (the human immunodeficiency virus or HIV), cytomegalus virus, and West Nile virus. There is also

testing for other diseases like syphilis and other known transmissible infectious agents. With modern testing methods, the chances of risk of blood containing the HIV is now less than one in 1.9 million, the risk of exposure to the hepatitis C virus is less than one in a million.

Transfusion of blood and blood products can be lifesaving. Transfusion of components of blood – plasma and other cellular components, are also of tremendous importance when required. These are used to correct clotting abnormalities and improve some cellular deficits when desirable. Improved therapeutic support measures have

diminished the need for transfusion and research is developing several alternatives. Used under more stringent indications than before and thus only when clinically indicated, blood transfusion is becoming safer than before, with risk of contamination and transmission of infection remarkably low. Blood transfusions are used more rarely than before, under carefully controlled guidelines, and safety is, as always, an important consideration.

Dr. Silva is a professor of surgery at Wayne State University and a resident of Woodbluff on Mackinac Island.

Island Yatch Club Bridge Results

In Mackinac Island Yacht Club Bridge League games for the week ending Wednesday, July 25, Dorothy Sharer placed first, Nicki Krzykowski placed second, Mary Duncan placed third, and Susan Bankard placed fourth.

Special guest of honor was Louina Riley of Hendersonville, North Carolina.

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