

Blood Safety and Donation

Facts and figures from the 2006 Blood Safety survey¹

Key facts

- Less than 45% of donated blood is collected in developing and transitional countries, which are home to about 80% of the world's population.
- In 73 countries, donation rates are less than 1% (fewer than 10 donations per 1000 people). 70 of these are either developing or transitional countries. If 1% to 3% of a country's population donate blood, it would be sufficient for the country's needs.
- In 2002, 63 countries were collecting more than 75% of their blood supplies from family and paid blood donors. This number had fallen to 38 countries in 2006.
- In 2006, 54 countries collected 100% of their blood supplies from voluntary unpaid donors, up from 51 countries in 2004. The proportion of blood collected from voluntary unpaid donors in developing and transitional countries increased from 25% in 2002 to 40% in 2006.
- 31 countries were not able to screen all donated blood for one or more of the infections – including HIV, hepatitis B, hepatitis C and syphilis – that can be transmitted through blood.
- Data on serious adverse events related to blood transfusion were available from 37 countries.

Global data

Blood transfusion saves lives and improves health, but millions of patients needing transfusion do not have timely access to safe blood. Despite ongoing efforts, it will still be many years before artificial blood substitutes can widely replace donated human blood.

The WHO programme on Blood Transfusion Safety has started an annual survey of key quantitative blood safety indicators from Member States. The objective of the survey is to assess the global situation on blood safety, monitor trends and progress and identify priority countries for support. A good response rate was seen in data collection for 2006 with responses being received from 150 countries, covering 84% of the world's population.

Blood supply

While the need for blood is universal, there is a major imbalance between developing and developed countries in the level of access to safe blood.

- Globally, more than 81 million units of whole blood are collected annually.
- In 2006, 150 countries provided data to WHO on 69 million units of blood collected. The data come from countries that account for a total of 5 billion people.

¹ Based on WHO Global Database on Blood Safety (GDBS) and Blood Safety Indicators.

- Of these 69 million units, less than 30 million units (or 45%) are collected in developing and transitional countries, which are home to about 80% of the world's population.
- Of the 73 countries that have donation rates of less than 1% (fewer than 10 donations per 1000 people), 70 are either developing or transitional countries. It is recommended that 1% to 3% of the population donate blood to meet a country's needs.
- The average blood donation rate is three times higher in transitional countries and 10 times higher in developed countries than in developing countries.

Types of blood donation

Donors who give blood voluntarily and for altruistic reasons have the lowest prevalence of HIV, hepatitis viruses and other blood-borne infections, as compared to people who donate for family members or in lieu of payment.

Sufficient supplies of safe blood can only be assured by regular donations from voluntary unpaid donors. The 2006 data reveal some improvements in such donations worldwide, but many developing and transitional countries still rely heavily on relatively unsafe family/replacement donors and paid donors.

- 51 countries reported an increase in blood donation by voluntary unpaid donors. In 27 countries the level remained the same.
- In 2004, 51 countries had reached the WHO-recommended goal of collecting 100% of their blood supplies from voluntary unpaid donors. Thailand, Turkey and Uganda achieved this in 2006.
- Particularly striking is the increase from 25% in 2002 to 40% in 2006 in the proportion of donations collected from voluntary unpaid blood donors in developing and transitional countries.
- 92% of donations in developed countries are from voluntary unpaid donors as compared to 77% in developing and transitional countries.
- More countries are moving towards voluntary blood donation and showing a decrease in dependence on less safe family/replacement and paid blood donors. In 2002, 63 countries were collecting more than 75% of their blood supplies from family and paid blood donors. This number had fallen to 46 countries by 2004 and again to 38 countries in 2006.
- More than 1 million whole blood units were still collected from paid blood donors in 2006.
- Data from 97 countries show that 6.93 million prospective donors were deferred prior to blood collection. The causes of these deferrals include anaemia, existing medical conditions and risk behaviours for transmissible infections. This indicates the need for collecting information about blood donors, and for educating and counseling prospective donors. These measures will help to ensure the safety and availability of blood and blood products, reduce unnecessary deferrals, and also ensure the health and safety of donors.

Blood screening

WHO recommends that, at minimum, all donated blood to be used for transfusion should be screened for HIV, hepatitis B, hepatitis C and syphilis. Complete and accurate data on the screening of donated blood are not available from most developing countries, particularly those where blood services are not coordinated. Many countries do not have reliable testing systems because of staff shortages, lack of basic laboratory services, poor quality test kits or their irregular supplies.

- 31 countries that provided data on screening for transfusion-transmissible infections – including HIV, hepatitis B, hepatitis C, and syphilis – are not able to screen all donated blood for one or more of these infections.
- On the basis that each whole blood donation should be screened* for those four infections, the total number of tests required for 69 million whole blood donations is 276 million. Using the number of whole blood donations and the percentage of donations screened for each country, the calculated number of tests performed in 2006 is 270.1 million, leaving a screening gap of 5.9 million. Of those, 1.8 million tests were not performed, and 4.1 million tests are of unknown status.

* Blood screening figures are based on data from 145 countries on 69 million donations. Globally, for the more than 81 million units of whole blood donated annually, data from 60 countries for approximately 12 million donations is not available.

Blood usage

Data on the use of donated blood is limited, but studies suggest that transfusions are often given unnecessarily when simpler, less expensive treatments can provide equal or greater benefit. Not only is this a waste of a scarce resource but it also exposes patients to the risk of serious adverse transfusion reactions or infections transmitted through the blood.

- Data from 57 countries reveals that in developing and transitional countries, less than 50% of hospitals had transfusion committees in 2006. Such committees should be established in each hospital to implement the national policy and guidelines on blood transfusion and to monitor the use of blood and blood products at the local level.

Regular blood donors

The safety of the blood supply is dependent on collecting blood from voluntary unpaid donors from low-risk populations, screening donated blood for transmissible infections and avoiding unnecessary transfusions. These activities need to be carried out by a well-coordinated blood transfusion service with quality being controlled in all aspects.

As more countries achieve the goal of 100% reliance on voluntary donation, there is growing appreciation of the important role of voluntary unpaid donors who give blood on a regular basis. By continually returning to donate blood, they provide a safe and stable supply of blood. This also saves the considerable amount of time, effort and money that is currently devoted to recruit new donors.

With the increasing demand for blood and blood products, there is a need to recruit more voluntary donors in addition to retaining those who have already donated. The retention of suitable blood donors should be a high priority for every country. This also highlights the responsibility of blood transfusion services to provide quality care to ensure donors' health and safety. This will encourage donor loyalty and a commitment by voluntary unpaid blood donors to donate regularly.