



2016

# Global Status Report on Blood Safety and Availability



World Health  
Organization

# **Global Status Report on Blood Safety and Availability**

**2016**



Global status report on blood safety and availability 2016  
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# Preface

Blood is a vital health care resource used in a broad range of clinical services. In developed countries, transfusion is most commonly used for supportive care in cardiovascular and transplant surgery, massive trauma, and therapy for solid and haematological malignancies; in developing countries, on the other hand, it is more often used to treat pregnancy-related complications and severe childhood anaemia. Access to sufficient, secure supplies of blood and blood products and safe transfusion services is an essential part of any strong health system, and is an important component of efforts towards achieving the goal of universal health coverage. Blood can save lives, but can also be a vector for harmful infectious diseases, such as HIV and hepatitis. New pathogens are evolving and may pose additional threats to the safety and availability of blood supply, highlighting the importance of an effective surveillance and vigilance system for blood and transfusion safety at global and national levels.

Ensuring sufficient supplies of safe blood and blood products, and prevention of transmission of HIV, hepatitis and other transfusion-transmissible infections, are major public health responsibilities of every national government. Since 1975, the World Health Assembly has highlighted the global need for blood safety and availability through the adoption of several resolutions that have given greater priority to the issue within global and national health agendas. Key resolutions include WHA28.72, Utilization and supply of human blood and blood products (1975); WHA56.30, Global health-sector strategy for HIV/AIDS (2003); WHA58.13, Blood safety: proposal to establish World Blood Donor Day (2005); WHA63.12, Availability, safety and quality of blood products (2010); and WHA 67.6, Hepatitis (2014). These resolutions have also identified the guiding principles and essential elements for the development of sustainable national blood systems to meet the transfusion needs of all patients.

The World Health Organization (WHO) Global Database on Blood Safety (GDBS) was established in 1998 to address global concerns about the availability, safety and accessibility of blood for transfusion. The objective of this activity is to collect and analyse data from all countries on blood and blood product safety as the basis for effective action to improve blood transfusion services globally. WHO has published several reports in the past on this topic, the most recent being in 2011. The present 2016 report, which is based on the latest GDBS data, provides information on the current status of blood transfusion services. It finds that blood and transfusion safety is a matter of continuing concern. The problem is particularly acute in developing and low-resource countries, where a high risk of transfusion-transmitted infections and an insufficient blood supply have a negative impact on the effective

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delivery and safety of key health services and interventions. For the first time, this report also presents in its annexes key data and information for each Member State.

The fundamental strategy to ensure timely access to safe and sufficient supplies of blood and blood products is the development of a nationally coordinated blood transfusion service based on voluntary non-remunerated blood donations. This service should be governed by quality management in all its aspects, have sufficient and continuous funding, and be fully integrated into the national health system. Based on the information that Member States have provided to WHO, much more still needs to be done to establish such a service in Member States, particular in developing countries. As the world embarks on achieving the goal of universal health coverage, no country should be left behind in securing sufficient and safe blood supply for its health system. Governments, WHO and international partners need to scale up their efforts in implementing the WHO blood safety strategies and improving the safe and sufficient supply of blood and blood products throughout the world.

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# Abbreviations

Ab	antibodies
Ag	antigens
BTS	blood transfusion service
CDC	Centers for Disease Control and Prevention
FFP	fresh frozen plasma
GDBS	Global Database on Blood Safety
HBsAg	hepatitis B surface antigen
HBV	hepatitis B virus
HCV	hepatitis C virus
HIV	human immunodeficiency virus
HTLV	human T-lymphotropic virus
NAT	nucleic acid amplification testing
NBTS	national blood transfusion service
PAHO	Pan American Health Organization
PDMP	plasma-derived medicinal products
PEPFAR	President's Emergency Plan for AIDS Relief
PCR	polymerase chain reaction
RNA	ribonucleic acid
TTI	Transfusion-transmissible infection
VNRD	voluntary non-remunerated blood donation
WHO	World Health Organization

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# 1 Introduction

The objective of this report is to provide an overview of the current status and trends in blood supply, safety, sufficiency and usage globally. The report is primarily based on data for the year 2013, which were reported by 156 of 195 Member States to the World Health Organization (WHO) Global Database on Blood Safety (GDBS). To give a more complete overview of the global situation, data for 2012 from 15 countries and for 2011 from nine countries were used where 2013 data were not available.<sup>1</sup> These 180 countries account for a total population of 7 billion, representing 98.3% of the global population.

The WHO GDBS was established in 1998 to provide data about the availability, safety and accessibility of blood for transfusion. The main objective of the survey is to collect and analyse data on national blood systems from all countries as the basis for effective action to improve access to safe blood and blood products and transfusion practices globally. The WHO Blood Transfusion Safety programme has undertaken biennial surveys on the safety and availability of blood in Member States since 1998. Since 2006, GDBS data are collected annually using a standardized tool, which is sent to national health authorities or national blood transfusion services for completion. Web-based tools were used for 2011, 2012 and 2013 data collection.

Standardized definitions of the terminologies used in the survey questionnaire were prepared to promote consistency of reporting. Where possible, efforts were made to validate the data reported to WHO with WHO regional and country offices, as well as with experts who visited countries on behalf of WHO. Countries were contacted for clarification or correction when discrepancies, inconsistencies or any unusual patterns were observed. Efforts were also made to validate GDBS data by comparing them with data available from other published sources. However, systematic verification was not performed for all data provided by all countries. In particular, answers to the questions on the existence of policies, programmes or mechanisms could be affected by individual interpretation of the questions asked.

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<sup>1</sup> In the subsequent sections of this report, for the purposes of simplicity, “GDBS 2013 data” is used to describe the data from all 180 countries surveyed.

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## 2 Collection and supply of blood and blood components

### 2.1 GLOBAL OVERVIEW OF BLOOD COLLECTION

It is estimated that a total collection of 112.5 million blood donations were made in the 180 countries during the reporting period. Of these, 100.6 million were whole blood donations and 11.9 million were apheresis donations (Table 1). These donations were collected from all types of blood donors: voluntary non-remunerated, family or replacement, and paid. This estimation has taken into consideration the partial data provided by countries. Annex 1 provides a note on how the estimation of global collection was performed.

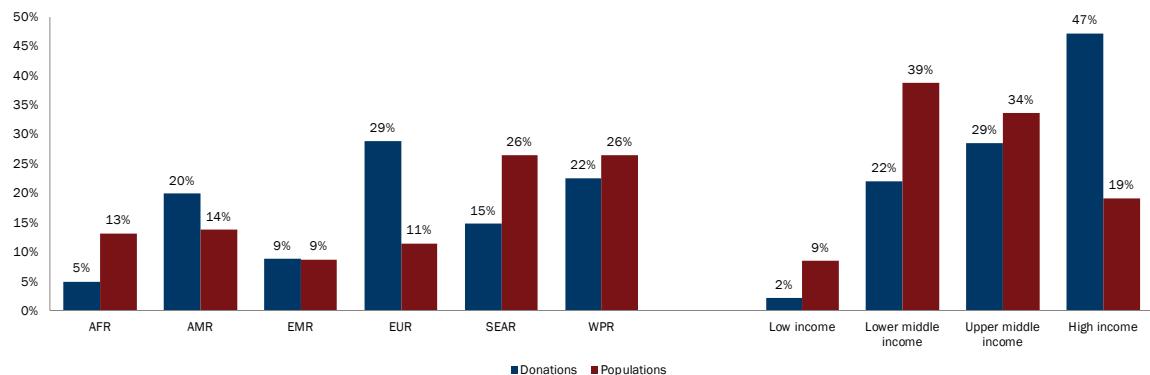
**Table 1. Estimated blood donations by WHO region, 2013**

Region	Estimated whole blood donations (millions)	Estimated apheresis donations (millions)	Total (millions)
Africa	5.6	0.03	5.6
Americas	20.4	2.0	22.4
Eastern Mediterranean	9.9	0.04	9.9
Europe	26.5	6.1	32.5
South-East Asia	16.6	0.06	16.7
Western Pacific	21.6	3.7	25.3
Global (rounded totals)	100.6	11.9	112.5

When the donation and population data are correlated and analysed by WHO region and World Bank income group, the level of availability of blood for transfusion is found to vary across WHO regions and World Bank income groups. For example, 46 countries in the WHO African Region collected a total of about 5.6 million blood donations; these accounted for only about 4% of global donations, though these countries are home to around 13% of the global population. The 11 countries in the South-East Asia Region reported the collection of 15% of global blood donations, though these countries represent 26% of the global population. In the European Region, the number of reported donations represented 30% of the global total, though the region is inhabited by only 11% of the global population. Similarly, countries in the high-income group collected 47% of the global donations, though their populations only

account for 19% of the global population. Countries in the low-income and lower middle-income groups collected 2% and 22% of the global donations respectively, though their populations represent 9% and 39% of the global population respectively (Figure 1).

**Figure 1. Regional distribution of population and blood donations by WHO region and World Bank income group, 2013**



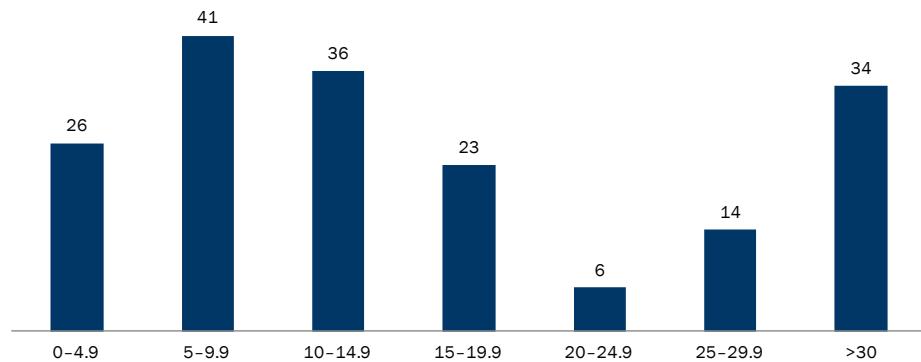
AFR: African Region; AMR: Region of the Americas; EMR: Eastern Mediterranean Region; EUR: European Region; SEAR: South-East Asia Region; WPR: Western Pacific Region

There were wide variations in blood donation rates among countries, ranging from 0.3 to 56 per 1000 population. The whole blood donation rate (median) was 32.1 donations per 1000 population per year (range 11.2– 57.8) in high-income countries, 14.9 (range 6.7–39.7) in upper middle-income countries, 7.8 (range 0.7–20.6) in lower middle-income countries, and 4.6 (range 0.3–9.4) in low-income countries. Across WHO regions, the donation rates ranged as follows: 0.2 to 39.7 (median 5.7) in Africa,<sup>2</sup> 2.7 to 36.5 (median 14.8) in the Americas, 2.3 to 27.8 (median 14.9) in the Eastern Mediterranean, 3.9 to 57.8 (median 33.6) in Europe, 1.8 to 30.8 (median 7.9) in South-East Asia, and 3.3 to 49.9 (median 13.1) in the Western Pacific.

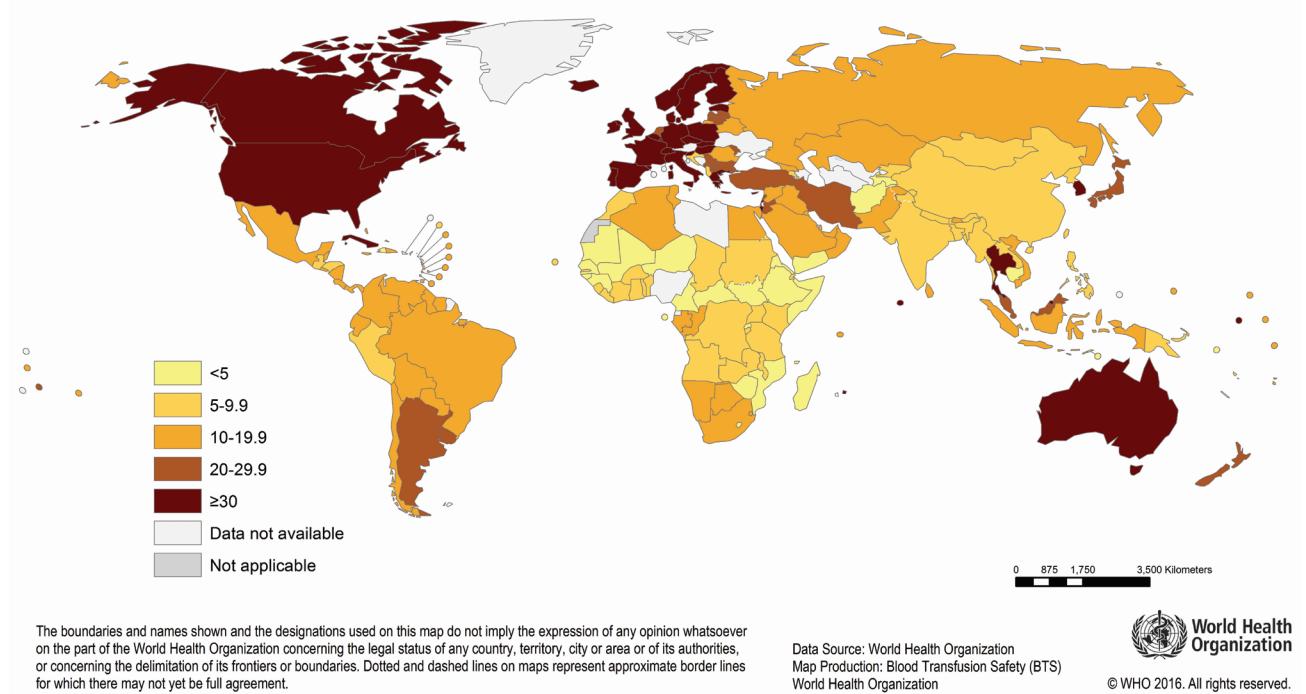
Sixty-seven countries reported collecting less than 10 whole blood donations per 1000 population per year in 2013 (Figure 2). Of these, 38 countries are in the WHO African Region, five in the Region of the Americas, six in the Eastern Mediterranean Region, four in the European Region, six in the South-East Asia Region and eight in the Western Pacific Region (Figure 3).

<sup>2</sup> Mauritius is an outlier in the African Region, with a donation rate of 39.7 per 1000 population. The second highest in the region is South Africa, with 18.0 donations per 1000 population.

**Figure 2. Distribution of countries by number of whole blood donations per 1000 population, 2013**



**Figure 3. Whole blood donations per 1000 population, 2013**

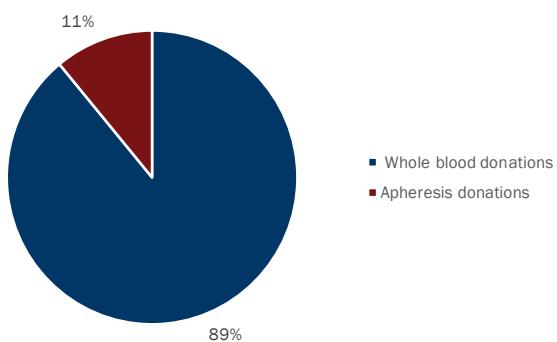


## 2.2 COLLECTION OF BLOOD COMPONENTS THROUGH APHERESIS PROCEDURE

Seventy-eight of the 180 responding countries reported collecting blood both as whole blood donations and through apheresis procedures. Of the total 99.5 million donations reported worldwide in 2013<sup>3</sup>, 89% were donated as whole blood and 11% were donated by apheresis (Figure 4).

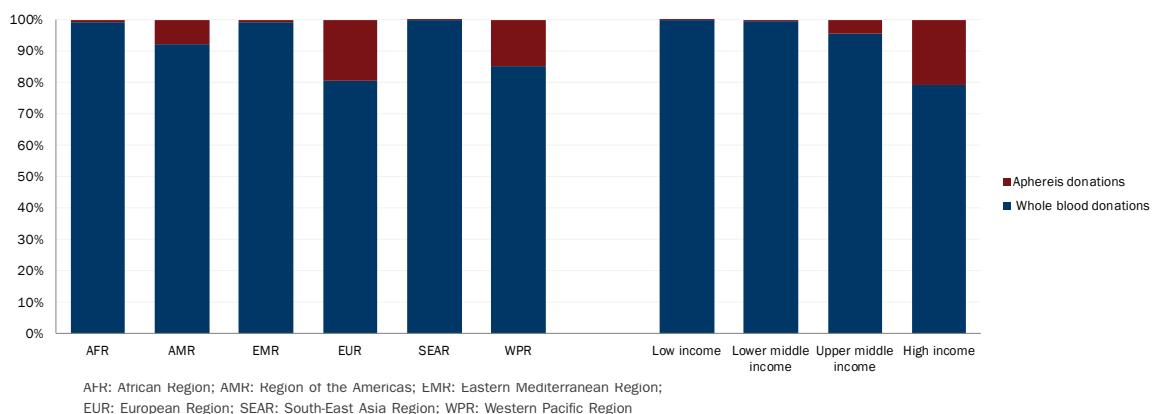
<sup>3</sup> In analysing the types of blood donations, the data as reported by the countries, including those partial data reported by countries (see Annex 1 for explanatory note), rather than the estimated national number, were directly used for aggregation and analysis by WHO region and World Bank income group.

**Figure 4. Blood donations by method of collection (%), 2013**



In high-income countries, 21% of all donations were collected through apheresis, compared to 4% in upper middle-income countries and 0.4% in lower middle-income countries. Across WHO regions, apheresis donations were mainly reported in the European Region, the Western Pacific Region and the Region of the Americas, where 20%, 15% and 8% (respectively) of the total donations were collected through apheresis procedures (Figure 5).

**Figure 5. Method of collection of blood donations by WHO region and World Bank income group, 2013**



## 2.3 TYPES OF BLOOD DONATIONS

Of the 180 countries that reported to WHO GDBS, 178 provided information on donations given by different types of blood donors (voluntary non-numerated, family/replacement, paid). These countries collected 88.2 million whole blood donations and 11.0 million apheresis donations.

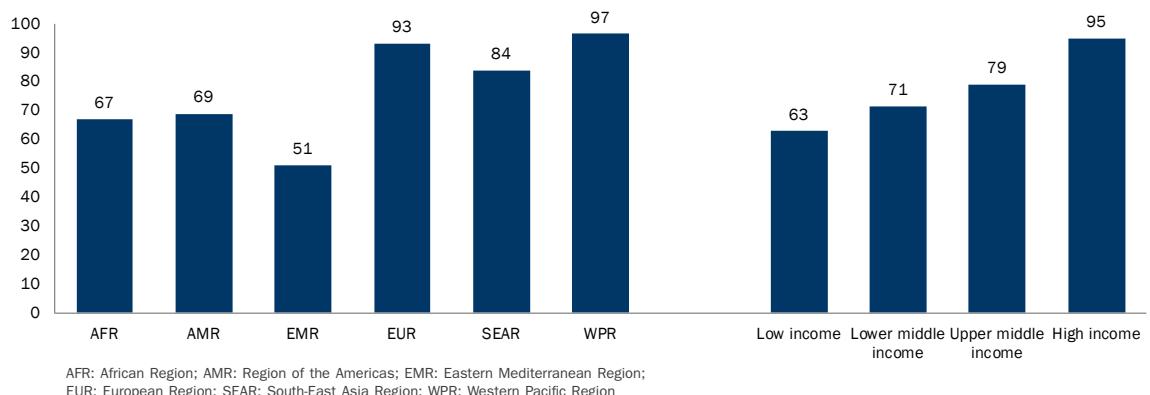
Overall, of the total 88.2 million whole blood donations, 83.3% were reported as voluntary non-remunerated donations, 16.4% as family or replacement donations, and 0.3% as paid blood donations.

Seventy-four countries collected more than 90% of their blood supply from voluntary non-remunerated blood donations: 30 in the European Region, 17 in the African Region, 13 in the Western Pacific Region, six in the Region of the Americas, five in the Eastern Mediterranean Region, and three in the South-East Asia Region. Fifty-seven countries (22 in Africa, 22 in the Americas, 10 in Europe, nine in the Eastern Mediterranean, five in the Western Pacific and three in South-East Asia) remained considerably dependent on family/replacement and paid blood donors, with these donations accounting for more than 50% of their blood supplies in 2013.

In 2013, the proportion of voluntary non-remunerated blood donations in high-income, upper middle-income, lower middle-income and low-income groups were 95%, 79%, 71% and 63%, respectively. Higher-income groups in general had a higher proportion of blood collected from voluntary non-remunerated blood donors in surveyed countries (Figure 6).

When analysed by WHO region, the proportion of voluntary non-remunerated whole blood donations varied from 51% in the Eastern Mediterranean Region to as high as 97% in the Western Pacific Region, with the European Region at 93%. The proportion of voluntary non-remunerated donations in the African Region, Region of the Americas and the South-East Asia Region was 67%, 69% and 84%, respectively (Figure 6).

**Figure 6. Proportions of voluntary non-remunerated whole blood donations by WHO region and World Bank income group, 2013**



An increase of 10.7 million blood donations from voluntary non-remunerated donors between 2008 and 2013 was reported in total by 159 countries that provided data for both years. The highest percentage increases in voluntary non-remunerated donations were observed in the South-East Asia Region, which reported an increase of 75%, followed by African Region, which reported an increase of 37%. The greatest increase in absolute numbers occurred in the South-East Asia Region, which reported an increase of 5.3 million voluntary non-remunerated donations (Table 2). The reported increase in voluntary non-

remunerated donations in South-East Asia was mainly contributed by India, which reported collecting 8.5 million donations from voluntary non-remunerated blood donors, a 85% increase from the reported 4.6 million in 2008.

Except for Europe, in which a marginal increase was observed, all WHO regions registered substantial increases in total collections from all types of blood donors, ranging from 13% in the Americas to 47% in Africa. South-East Asia reported increases in voluntary non-remunerated donations by a higher percentage than the total number of donations, meaning the increase in total blood collection was mainly contributed by the increase in voluntary non-remunerated donations. In the Eastern Mediterranean Region, the African Region and the Region of the Americas, the increases in total collections outpaced those in collections of voluntary non-remunerated donations (Table 2).

**Table 2. Change in voluntary non-remunerated donations and total blood donations by WHO region, 2008–2013**

	Voluntary non-remunerated donations (millions)			Total donations (millions)		
	2008	2013	Change	2008	2013	Change
Africa (n=44)	2.13	2.92	37%	2.95	4.34	47%
Americas (n=28)	8.68	9.52	10%	12.32	13.96	13%
Eastern Mediterranean (n=17)	2.88	3.57	24%	4.88	6.92	42%
Europe (n=38)	15.87	16.23	2%	16.58	17.07	3%
South-East Asia (n=11)	7.09	12.44	75%	10.52	14.86	41%
Western Pacific (n=21)	17.69	20.47	16%	18.27	21.17	16%
Total (n=159)	54.34	65.14	20%	65.51	78.32	20%

Globally, 94% of 11.0 million apheresis donations for clinical transfusion were given by voluntary non-remunerated donors, 2.7% by family or replacement donors, and 3.3% by paid donors. In the European Region and the Western Pacific Region, while the majority of the collections reported were from voluntary non-remunerated donors, 321 707 (5%) of apheresis donations in Europe and 34 342 (0.9%) of apheresis donations in the Western Pacific were collected from paid donors; it is possible, however, that the data for Europe may reflect the inclusion of some plasma donations for fractionation. In the Region of the Americas, the majority (93%) of the collections reported were from voluntary non-remunerated donors, while 92 921 (7%) of apheresis donations were collected from family replacement donors. In the Eastern Mediterranean Region, 46% of the total 36 731 apheresis donations were from voluntary non-remunerated blood donors, 33% were from family or replacement donors, and 21% were from paid donors; in addition, 15 965 apheresis donations collected through apheresis procedures were reported as apheresis component (platelet) units, though their donation type is unknown (Figure 7).

**Figure 7. Total number of apheresis donations (thousands) and distribution of donation types by WHO region**

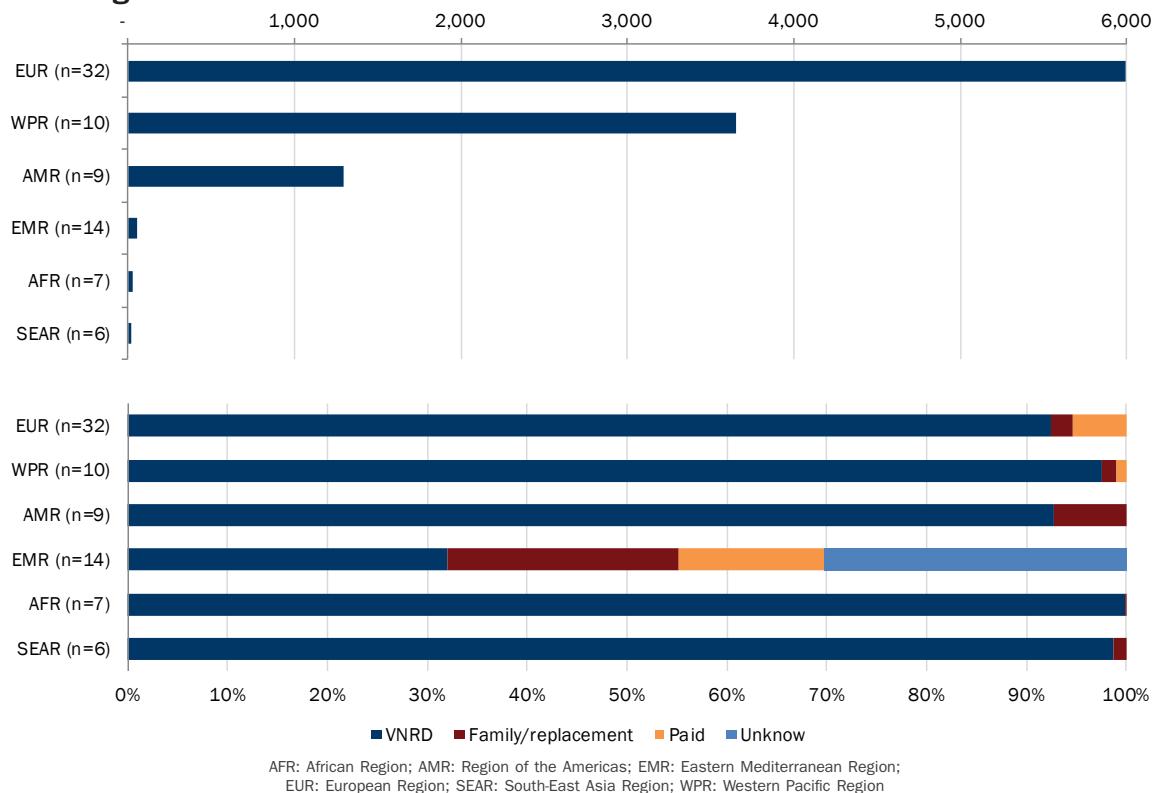
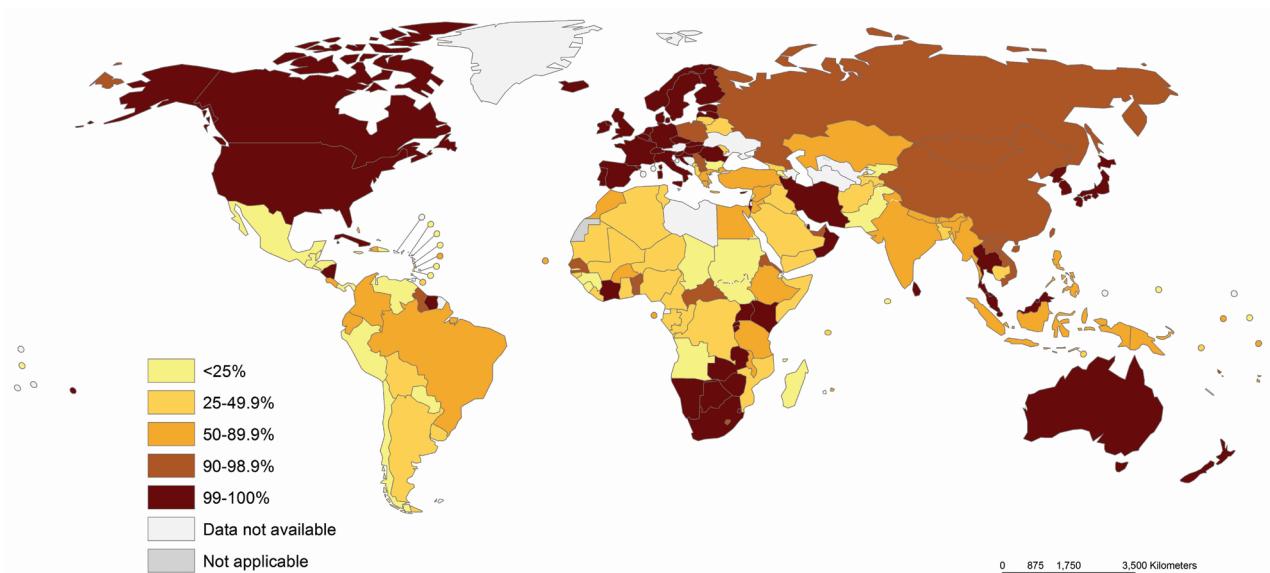


Figure 8 shows the geographical distribution by country of the proportion of voluntary non-remunerated blood donations (both whole blood and apheresis donations).

**Figure 8. Proportion of voluntary non-remunerated donations (whole blood and apheresis donations combined) by country, 2013**



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

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Map Production: Blood Transfusion Safety (BTS)  
World Health Organization

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## **2.4 BLOOD DONOR PROFILE**

### **2.4.1 Donor sex and age profile**

Data from 118 countries on the sex profile of blood donors show that, overall, 30% of blood donations were given by female donors; of these, 18 countries reported less than 10% of donations by women. Across the WHO regions, the Eastern Mediterranean had the lowest proportion of donations given by female donors (Table 3). However, substantial variations exist among countries within the region. For example, of 12 countries in the Eastern Mediterranean reporting data on the sex distribution of blood donations, nine reported that less than 10% of donations were given by female donors. The other three countries (Egypt, Morocco and Tunisia) reported percentages of 54%, 40% and 35%, respectively.

**Table 3. Blood donations from female donors by WHO region (median and range, %)**

Region	Median	Range
Africa (n=35)	25	2–72
Americas (n=15)	37	20–47
Eastern Mediterranean (n= 12)	7	1–54
Europe (n=26)	31	13–52
South-East Asia (n=8)	32	2–73
Western Pacific (n=22)	24	1–81

A total of 80 countries (high-income 23, upper middle-income 18, lower middle-income 22, low-income 17) reported data on number of donations given by donors of different age groups. Globally, 40% of donations were given by donors aged 25–44 years. Donors of the age groups 45–64 years and 18–24 years contributed 29% and 23% of the total donations, respectively. Of the total donations, 5% were given by donors in the group aged 65 years and over, and 3% were given by donors aged younger than 18 years. GDBS data show that proportionally more young people donate blood in low- and middle-income countries than in high-income countries: 42% of blood donations were given by donors aged below 24 years in low- income countries, 33% in lower-middle-income countries, 28% in upper-middle income countries and 21% in high-income countries (Figure 9). This may mainly reflect the age structure of the populations in developed and developing countries: proportionally there are more young people in developing countries and there are relatively more older people in developed countries.

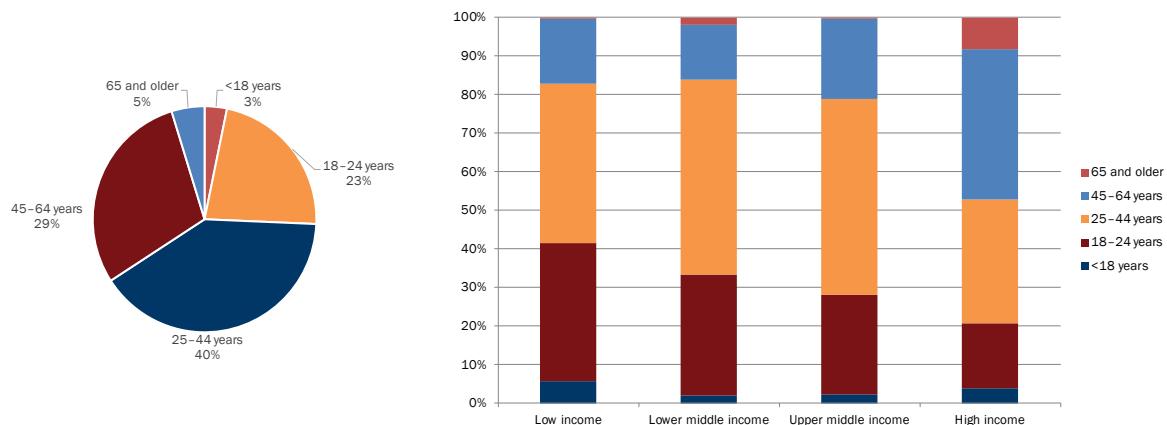
Stratification of the donation rate by age group shows that the average donation rate for the group aged 18–24 years was highest in high-income and upper middle-income countries, while the donation rate for the group aged below 18 years was highest in lower middle-income and low-income countries. In lower middle-income and low-income countries, there was a clear pattern

whereby donation rates for younger age groups were higher than those for older age groups; there was no such pattern in high-income countries, as shown in Figure 10(a). Several developing countries (see Figure 10(b) for examples) reported a relatively high donation rate by people aged below 18 years, mainly school students. This could be the result of the recruitment strategy of targeting young people, for example through the implementation of such programmes as Club 25.<sup>4</sup>

Young people also had high donation rates in some developed countries. For example, in France, the donation rate by the group aged 18–24 years was 93 per 1000 population, while in the groups aged 25–44, 45–64 and 65 years and over, the rates were 60, 68 and 37 per 1000 population, respectively. Poland and Singapore also reported that the group aged 18–24 years had the highest donation rate. However, in other developed countries, such as Australia, the Netherlands, and New Zealand, the pattern was different, with older age groups (45–64 years and 65 years and over) having higher donation rates, as shown in Figure 10(b).

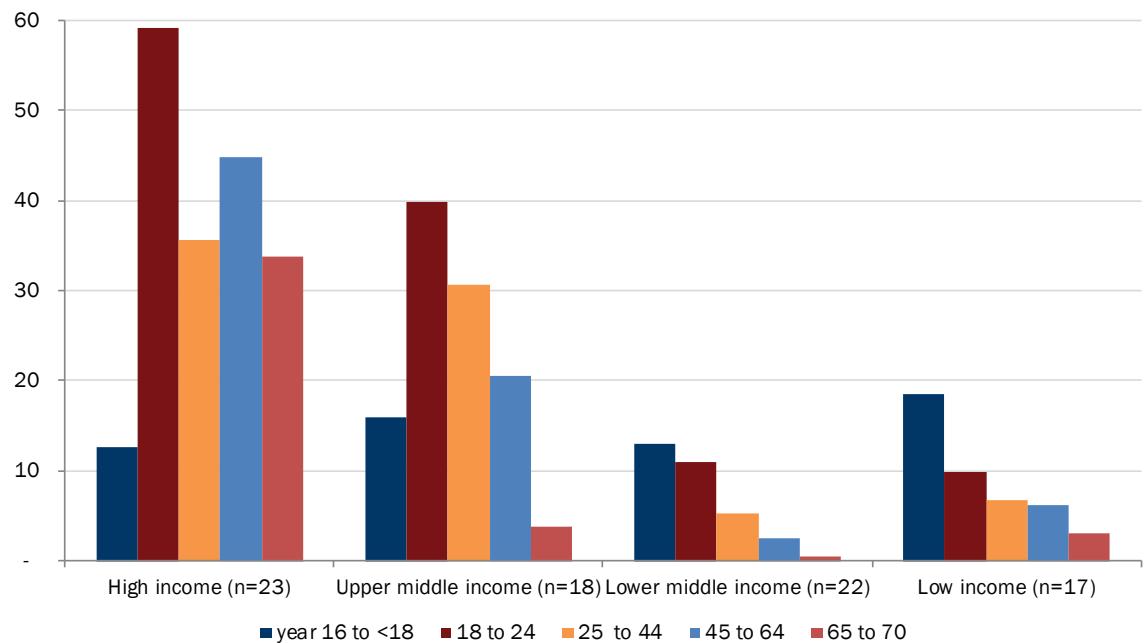
Demographic information about blood donors is important for formulating and monitoring donor recruitment strategies to meet blood requirements. This may include the strategies to address the barriers to blood donation that specific populations may face.

**Figure 9. Contribution to donations by donors of different age group, 2013**



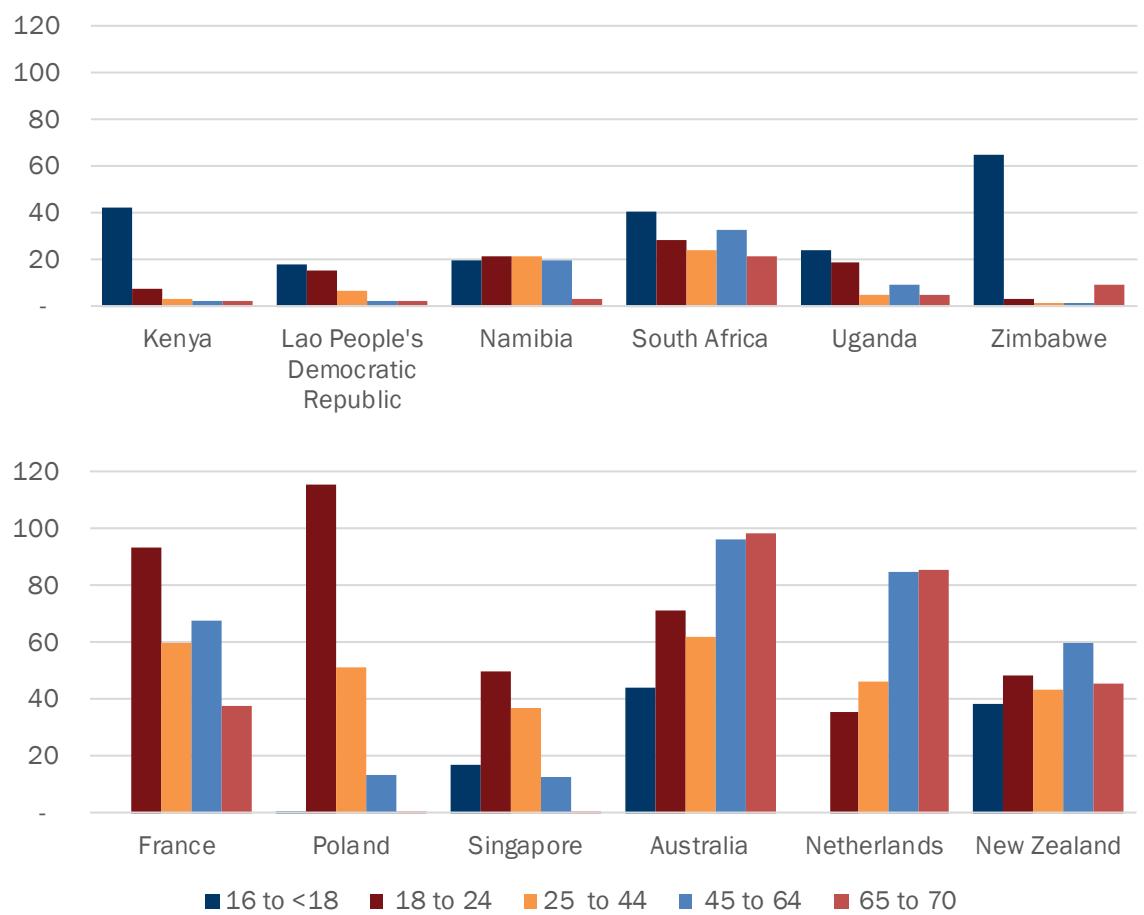
<sup>4</sup> Tagny CT, Owusu-Ofori S, Mbanya D, Deneys V. "The blood donor in Sub-Saharan Africa: a review." *Transfusion Medicine*. 2010;20(1):1–10. doi:10.1111/j.1365-3148.2009.00958.x.

**Figure 10(a). Age group donation rate (per 1000 population) by World Bank economic group, 2013**



Note: Forty countries (high-income 10, upper middle-income 5, lower middle-income 14, low-income 11) reported that no blood was collected from donors aged below 18 years, and 29 countries (high-income 5, upper middle-income 4, lower middle-income 9, low-income 11) reported no donations collected from donors aged 65 years and above, because of the age limit required by the donation criteria. Accordingly, age-specific (16–18 years or 65–70 years) population data from these countries were not included in calculating the average age group-specific donation rate by World Bank economic group.

**Figure 10(b). Age group donation rate (per 1000 population) in selected countries**



## **2.4.2 Repeat donors and first-time donors**

A total of 110 countries (Europe 35, Africa 31, Western Pacific 18, Americas 11, Eastern Mediterranean 10, South-East Asia five) reported data on the number of voluntary non-remunerated whole blood donations given by first-time donors and repeat donors. Overall, the percentage of whole blood donations given by repeat voluntary non-remunerated blood donors in countries ranged widely from less than 0.1% to 100% (median 45%).<sup>5</sup> Table 4 shows the proportions of donations given by repeat voluntary non-remunerated blood donors, by WHO region.

**Table 4. Donations given by repeat voluntary non-remunerated blood donors by WHO region (median and range, %)**

Region	Median	Range
Africa (n=31)	26	2–86
Americas (n=11)	19	<0.1–90
Eastern Mediterranean (n= 10)	30	0.6–85
Europe (n=35)	85	0.2–100
South-East Asia (n=5)	47	12–85
Western Pacific (n=18)	48	1–89

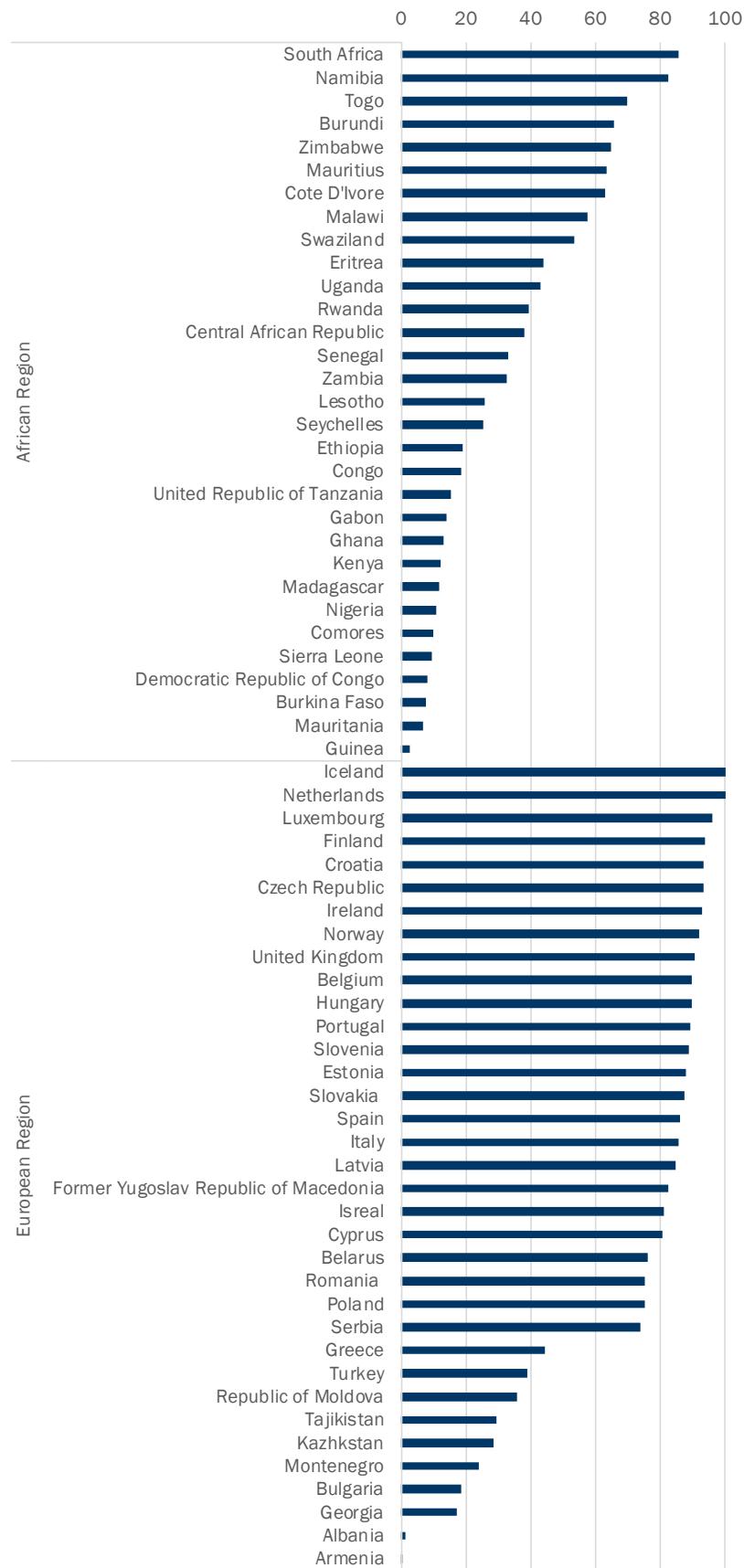
Figure 11 shows the proportion of whole blood donations by repeat voluntary non-remunerated donors in countries in the African and European Regions.

A proxy measure for regular blood donations is the frequency of donations per donor per year. Data reported to the WHO GDBS on the number of active whole blood donors and the number of donations these donors had given in 2013 were provided by 125 countries (low-income 23, lower middle-income 36, upper middle-income 24, high-income 42), accounting for 53.1 million whole blood donations. Overall, each donor donated 1.38 whole blood donations on average in 2013. This may be an underestimation of the actual donation frequency, as 48 countries (nine low-income, 21 lower middle-income, 10 upper middle-income and eight high-income) reported exactly the same number for active donors and donations, an error probably due to the lack of an appropriate donor database that can uniquely identify donations from the same donor. Figure 12 shows the donation frequency of the voluntary non-remunerated whole blood donors in 2013 in selected countries with a percentage of voluntary non-remunerated blood donations higher than 70%.

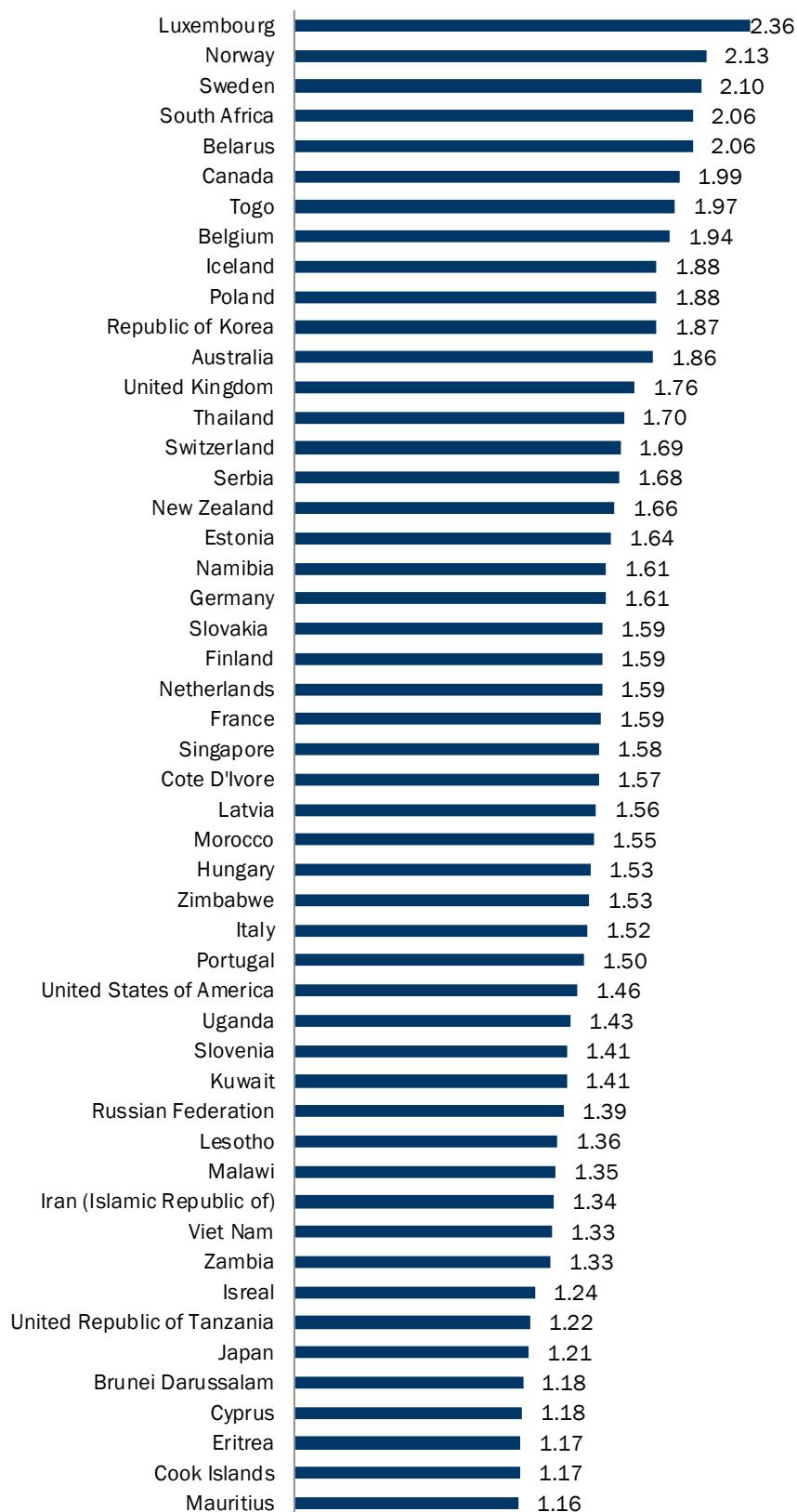
It is important to have a regular donor base to ensure a sufficient and safe blood supply. It is also important to continuously recruit new donors into the donor base.

<sup>5</sup> Several countries in Europe have implemented a policy of testing without collecting blood from first-time donors and thus reported 100% collection of repeat donors.

**Figure 11. Donations by repeat voluntary non-remunerated blood donors in countries in the African and European Regions (%)**



**Figure 12. Donation frequency per donor in selected countries with percentage of voluntary non-remunerated blood donations higher than 70%, 2013**



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### **2.4.3 Donor deferral**

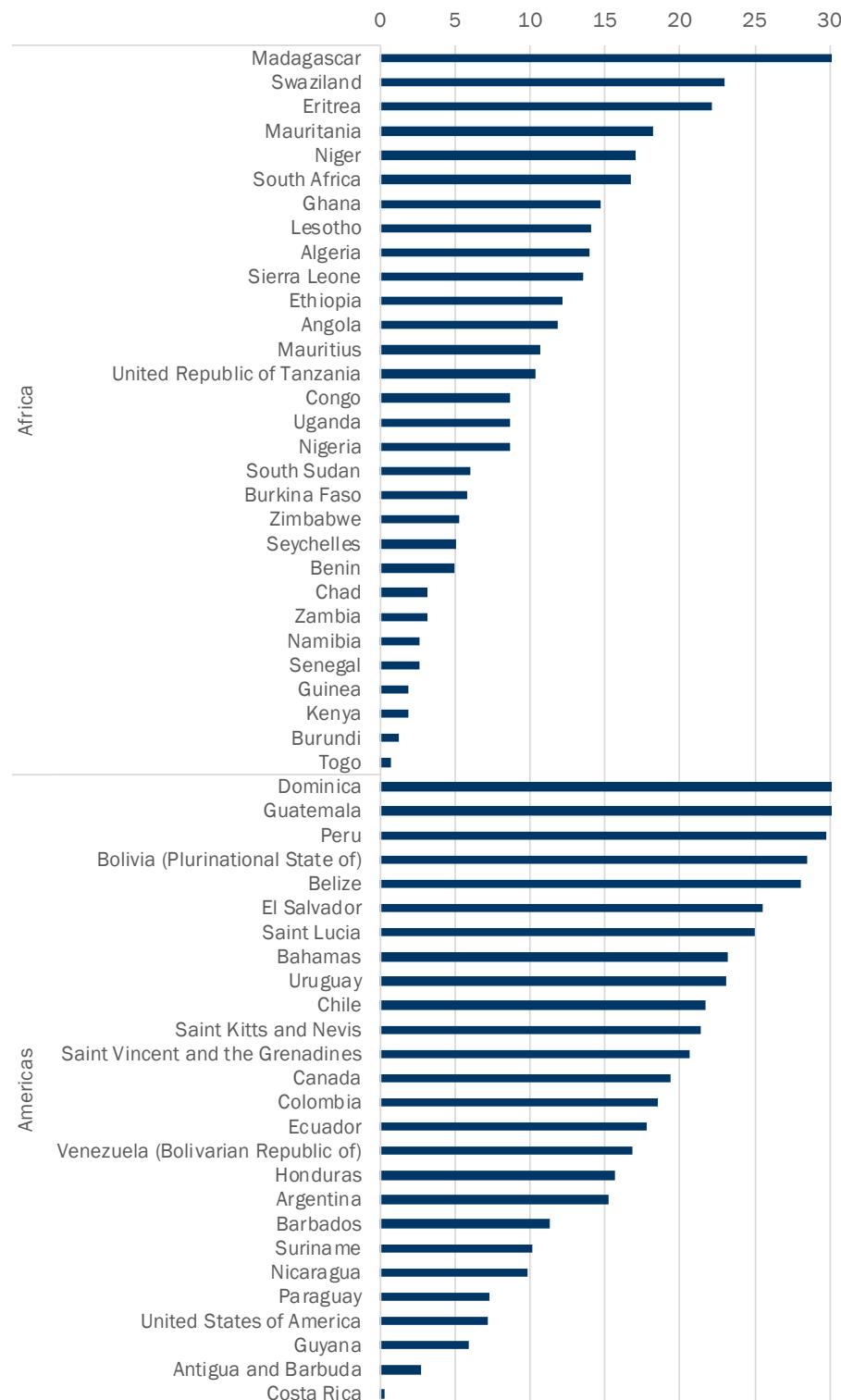
Data on deferral from blood donation were provided by 128 countries (Africa 30, Europe 30, Americas 29, Western Pacific 20, Eastern Mediterranean 11, South-East Asia eight). Only 80 countries provided number of deferrals by reason. The total deferral rates (the percentage of deferrals among all blood donor presentations) varied widely among countries, from less than 1% to over 37%. The median rate of total deferral was 12%. Figure 13 shows the total deferral rate in countries, by WHO region. Variations in deferral rates could be due to absence of donor selection criteria or appropriate donor selection procedures, or different donor registration practices. It is important to note, however, that there may be underreporting of the total number of total deferrals or deferral due to specific reasons, in particular by developing countries.

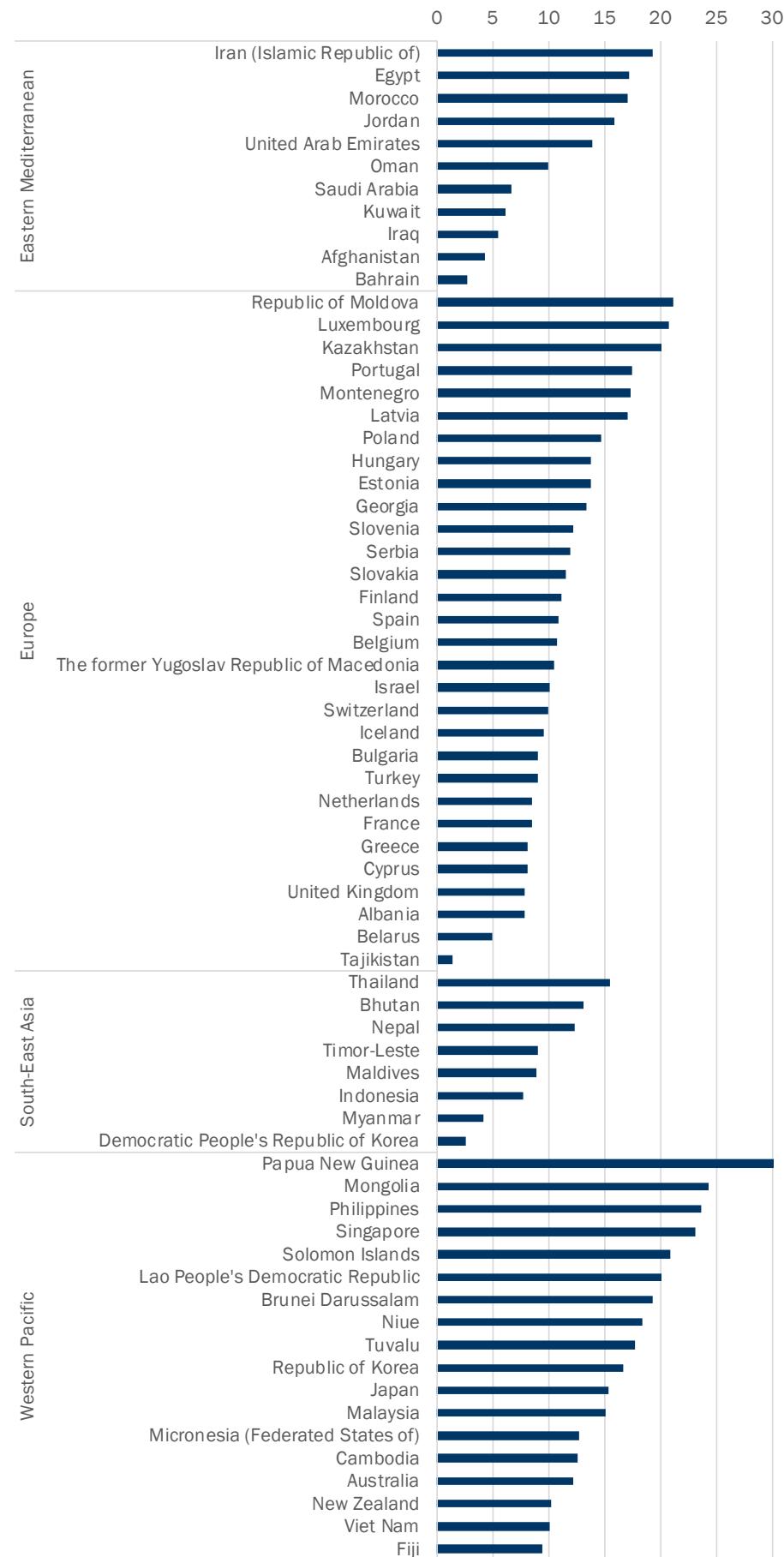
Many countries were unable to provide information on the number of deferrals from blood donation and the underlying reasons. Collection of these data should be encouraged, as it is useful for countries in monitoring implementation of their donor selection guidelines and in identifying needs for improvement in donor education.

## **2.5 PRE-DEPOSIT AUTOLOGOUS BLOOD DONATIONS**

Sixty-four countries (Europe 21, Americas 22, Africa four, Western Pacific four, Eastern Mediterranean three) reported a total of 101 994 autologous donations in 2013. The median percentage of autologous donations among all whole blood donations was 0.08% (range less than 0.01% to 2.7%). Italy reported the largest absolute number of autologous donations – 51 185 (accounting for 1.91% of its total reported whole blood donations). Argentina reported collecting 11 455 autologous donations in 2013, accounting for 1.20% of its reported whole blood donations. Many countries were not able to provide data on autologous donations, since they are collected in hospitals and currently many countries do not have established systems for data collection or reporting on activities from hospitals. It is probable therefore that the reported total number of autologous blood donations is an underestimation.

**Figure 13. Donor deferral rate in countries by WHO region**





### 3 Processing of whole blood donations into components

Blood collected in an anticoagulant can be stored and transfused to a patient in an unmodified state. This is known as whole blood transfusion. However, blood may be used more effectively if it is separated into components (red cell concentrates, fresh frozen plasma, cryoprecipitate and platelet concentrates), so that it can meet the needs of more than one patient and is used appropriately.

Based on data reported to the GDBS by 167 countries, 85% of whole blood donations collected globally were processed into components: 97% in high income countries, 92% in upper middle-income countries, 59% in lower middle-income countries and 50% in low-income countries.

Across the WHO regions, the lowest overall percentages for processing blood into components were in the South-East Asia Region (61%) and the Eastern Mediterranean Region (65%). The percentage was 69% in the African Region and greater than 90% in the Region of the Americas, the European Region and the Western Pacific Region (Figure 14).

**Figure 14. Whole blood donations processed into components by WHO region and World Bank income group, 2013 (%)**

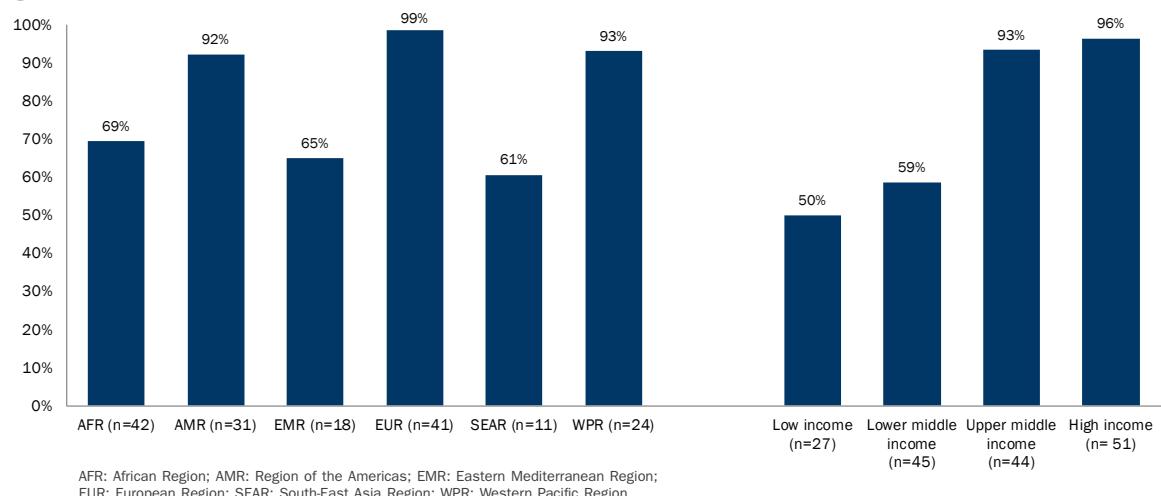


Table 5 shows the number of countries processing blood donations into components in different percentage groupings, by WHO region. In almost all countries in Europe (39/41) over 90% of whole blood donations were separated into components. In other WHO regions, between 27% (3/11 in

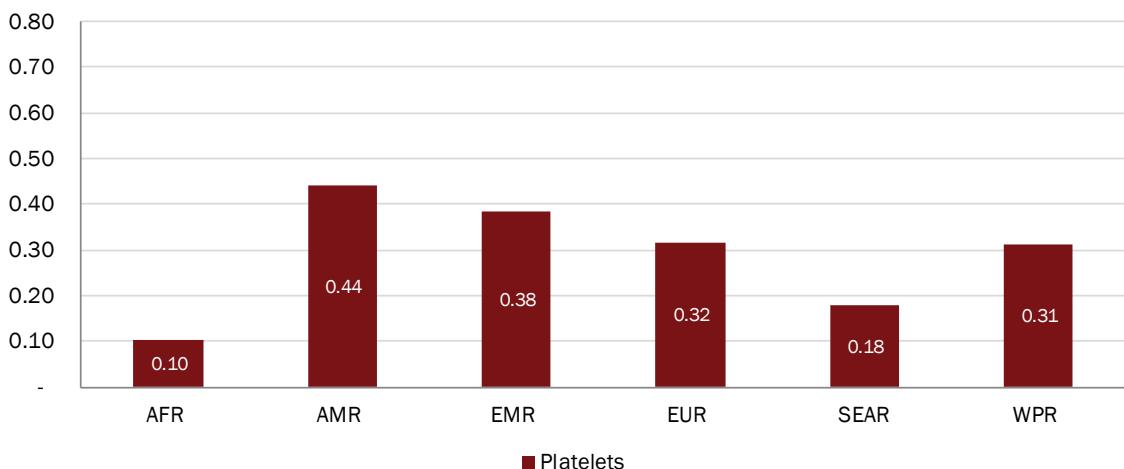
South-East Asia) and 55% (17/31 in the Americas) of countries reported that over 90% of whole blood donations were separated into components. Around 36% (15/41) of countries in Africa and 18% (2/10) of countries in South-East Asia reported that less than 25% of whole blood donations were separated into components.

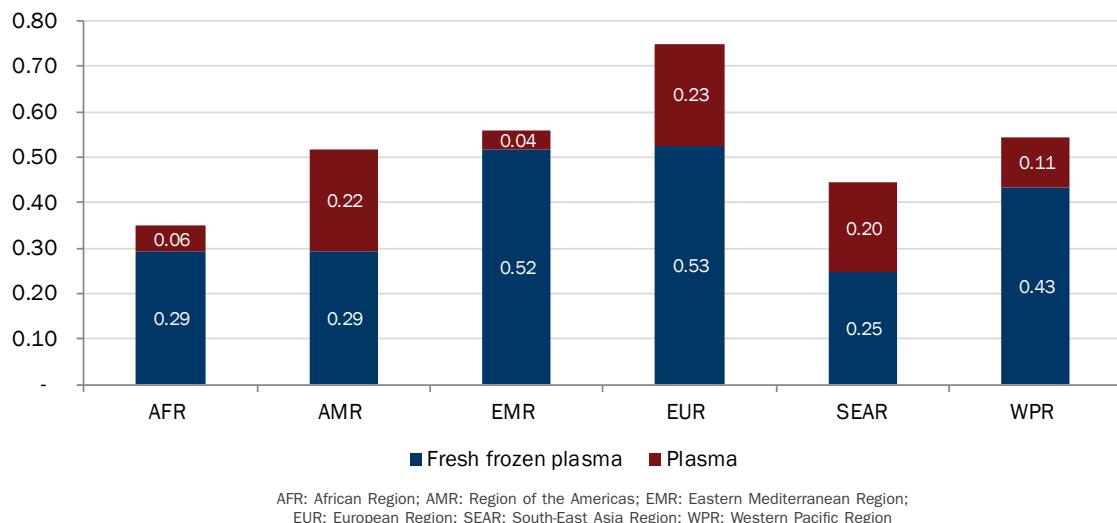
**Table 5. Proportion of blood donations processed into components: number of countries in each percentage grouping by WHO region, 2013**

Region	< 25%	25–49.9%	50–74.9%	75–89.9%	90–100%
Africa (n=42)	15	6	5	1	15
Americas (n=31)	2	4	2	6	17
Eastern Mediterranean (n=18)	2	3	1	3	9
Europe (n=41)	0	0	0	2	39
South-East Asia (n=11)	2	1	4	1	3
Western Pacific (n=24)	3	2	5	1	13

Using components produced per whole blood collection as an indicator of the productivity of the blood services in component preparations, GDBS data show that there are great country-level variations in the degree of processing of whole blood donations into different blood components across WHO regions. The African Region recorded the lowest productivity ratio for platelets, with an average of 0.10 units of platelet produced per single collection. The ratio in South-East Asia was 0.18 units of platelet produced per collection. Other regions had a productivity ratio for platelets higher than 0.3. The European countries and countries in the Western Pacific had slightly lower platelet production ratios than those of the Americas and the Eastern Mediterranean. This could be because Europe and the Western Pacific has a higher percentage of apheresis platelet collections. Europe had the highest level of plasma production per collection, with each collection producing 0.53 units of fresh frozen plasma and 0.23 units of frozen plasma (Figure 15).

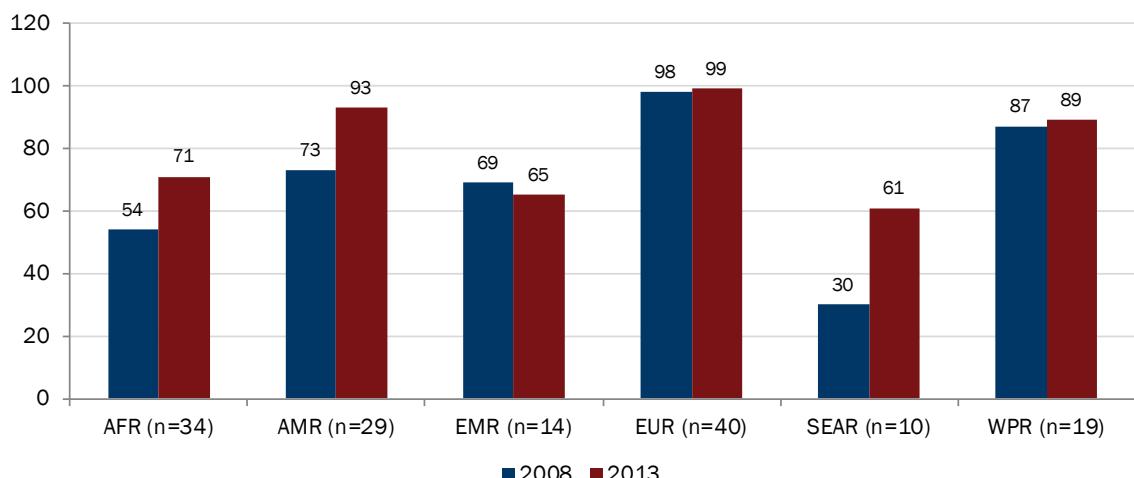
**Figure 15. Average component (platelets, fresh frozen plasma and plasma) units produced per collection by WHO region**





According to the data reported by 148 countries, whole blood donations that were separated into components increased from 38.4 million in 2008 to 52.4 million in 2013, an increase of 14 million (36%). The proportion of units of whole blood that were separated into components increased from 74% to 82% over the period. Figure 16 shows the change of proportion between 2008 and 2013 by WHO region. The biggest proportional increase was reported by the South-East Asia Region (from 30% to 61%). The African Region reported an increase from 54% to 71%.

**Figure 16. Proportions of whole blood units that were separated into components by WHO region, 2008 and 2013**



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## **4 Laboratory screening of blood donations**

### **4.1 LABORATORY SCREENING POLICY**

The following subsections analyse the data on laboratory screening policy according to screening component.

#### **4.1.1 HIV, hepatitis B virus and hepatitis C virus**

In the WHO GDBS questionnaire, questions were asked on the policy related to the minimum requirements for laboratory screening of blood. Of the 180 responding countries, 176 reported having a policy of screening all blood donations for HIV. Four countries did not answer the questions (three in the Region of the Americas and one in the Eastern Mediterranean Region). Overall, 70 countries reported testing for HIV-1/2 antibodies (Ab), while 106 countries reported testing for HIV-1/2 antibodies and antigens (Ab+Ag). A total of 44 countries reported testing HIV RNA using nucleic acid amplification testing (NAT) in addition to serological testing (Table 6).

Of the 180 responding countries, 176 reported having a policy of screening all blood donations for hepatitis B virus (HBV). Four countries (three in the Americas and one in the Eastern Mediterranean) did not answer the questions on HBV testing policy. All 176 countries reported having a policy of testing all blood donations for hepatitis B surface antigen (HBsAg). A total of 44 countries reported having a policy of testing all blood donations for anti-HBc in addition to testing for HBsAg, 13 countries reported selective testing for anti-HBc, and 42 countries reported using NAT for HBV in addition to serological testing (Table 7).

More countries in the Americas and the Eastern Mediterranean reported routinely testing blood for anti-HBc than was the case for South-East Asia and the Western Pacific. In Europe, nine countries reported routinely testing all blood for anti-HBc, and eight countries reported selective testing for anti-HBc. Countries reporting selective testing for anti-HBc indicated that the tests were performed for donors with higher risk of HBV infection or for new donors (Table 7).

Of the 180 responding countries, a total of 174 countries reported having a policy of serological testing of all blood for hepatitis C virus (HCV), with 140 countries having a policy of testing all blood for HCV antibodies, and 34 countries testing for HCV Ab+Ag. Forty-three countries reported also having a

policy of testing all blood with NAT in addition to the serological testing. One country reported not testing donated blood for HCV before it was released for transfusion. Five countries (four in the Americas, one in the Eastern Mediterranean) did not answer the questions in this section (Table 8).

**Table 6. Distribution of blood laboratory screening policies for HIV-1/2 by WHO region**

Region	Ab	Ab+Ag	Ab + NAT	Ab+Ag + NAT	Unanswered
Africa (n=46)	11	33	2	0	0
Americas (n=35)	5	22	3	2	3
Eastern Mediterranean (n=20)	3	11	2	3	1
Europe (n=43)	4	16	16	7	0
South-East Asia (n=11)	6	3	0	2	0
Western Pacific (n=25)	12	6	6	1	0
Global (n=180)	41	91	29	15	4

Note: The “unanswered” status in countries of the Region of the Americas could result from the different form used for data collection.

**Table 7. Distribution of blood laboratory screening policies for HBV by WHO region**

Region	HBsAg	HBsAg + anti-HBc (routine)	HBsAg + anti-HBc (selective)	HBsAg + anti-HBc (routine) + NAT	HBsAg + anti-HBc (selective) + NAT	HBsAg + NAT	Unanswered
Africa (n=46)	36	6	2	0	0	2	0
Americas (n=35)	16	12	0	3	0	1	3
Eastern Mediterranean (n=20)	7	7	0	4	1	0	1
Europe (n=43)	14	4	3	5	5	12	0
South-East Asia (n=11)	8	1	0	0	1	1	0
Western Pacific (n=25)	17	1	0	1	1	5	0
Global (n=180)	98	31	5	13	8	21	4

Note: The “unanswered” status in countries of the Region of the Americas could result from the different form used for data collection.

**Table 8. Distribution of blood laboratory screening policies for HCV by WHO region**

Region	Anti-HCV	Anti-HCV Ab+Ag	HCV Ab + NAT	HCV Ab+Ag + NAT	No test	Unanswered
Africa (n=46)	31	13	2	0	0	0
Americas (n=35)	21	6	3	1	0	4
Eastern Mediterranean (n=20)	10	4	4	1	0	1
Europe (n=43)	15	5	21	2	0	0
South-East Asia (n=11)	8	1	2	0	0	0
Western Pacific (n=25)	16	1	7	0	1	0
Global (n=180)	101	30	39	4	1	5

Note: The “unanswered” status in countries of the Region of the Americas could result from the different form used for data collection.

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#### **4.1.2 Syphilis**

Two European countries (Denmark, Iceland) reported implementing a policy of not routinely performing syphilis testing for blood donations. Norway reported testing all new donors for syphilis. Four countries (three in the Americas and one in the Eastern Mediterranean) did not answer the questions on syphilis testing policy. All other 173 responding countries have a policy of performing syphilis testing for all donations.

#### **4.1.3 Chagas**

Eighteen countries, all in Latin America, reported having a policy of testing all blood donations for *Trypanosoma cruzi*. Twelve countries reported implementing selective testing for *T. cruzi* for donors who have travelled to at-risk areas or who have defined risk factors (Table 9).

**Table 9. Testing for Chagas disease**

Test for all donations	Selective testing
Argentina	Belgium
Belize	Canada
Bolivia (Plurinational State of)	France
Brazil	Japan
Chile	Luxembourg
Colombia	New Zealand
Costa Rica	Norway
El Salvador	Spain
Guatemala	Sweden
Guyana	Switzerland
Honduras	United Kingdom
Mexico	United States of America
Panama	
Paraguay	
Suriname	
Trinidad and Tobago	
Uruguay	
Venezuela (Bolivarian Republic of)	

#### **4.1.4 human T-lymphotropic virus**

Thirty-seven countries reported having the policy of testing all blood donations for human T-lymphotropic virus (HTLV-I/II) antibody. Seven countries reported implementing selective testing for new donors or donors who have not been tested before (Table 10).

**Table 10. Testing for HTLV-I/II**

Africa (1)	Americas (22+1)	Eastern Mediterranean (4+1)	Europe (8+3)	Western Pacific (2+2)
Gabon	Argentina	Kuwait	France	Australia
	Bahamas	Qatar	Greece	Japan
	Barbados	Saudi Arabia	Ireland	New Zealand <sup>a</sup>
	Brazil	United Arab Emirates	Israel	Republic of Korea <sup>a</sup>
	Canada	Iran (Islamic Republic of) <sup>a</sup>	Netherlands <sup>b</sup>	
	Chile		Romania	
	Costa Rica		Spain	
	Dominica		United Kingdom	
	Guyana		Luxembourg <sup>a</sup>	
	Haiti		Portugal <sup>a</sup>	
	Honduras		Sweden <sup>a</sup>	
	Jamaica			
	Panama			
	Paraguay			
	Peru			
	Saint Kitts and Nevis			
	Saint Vincent and the Grenadines			
	Suriname			
	Trinidad and Tobago			
	United States of America			
	Uruguay			
	Venezuela (Bolivarian Republic of)			
	Ecuador <sup>a</sup>			

<sup>a</sup> Selective testing.<sup>b</sup> Until July 2013 all donations were tested. Since 1 July 2013 testing is only for new donors prior to the first donation.

## 4.2 COVERAGE AND QUALITY OF LABORATORY SCREENING OF BLOOD DONATIONS

Based on GDBS data, 13 countries (Africa six, Americas three, Western Pacific three, the Eastern Mediterranean one) reported not being able to test 100% of the blood collected for one or more of the four transfusion-transmissible infections – HIV, HBV, HCV and syphilis – as required by the national testing policy. Seven countries (Americas three, Africa two, Eastern Mediterranean one, Western Pacific one) reported not being able to test all donations for HIV. The percentages of donations tested in these countries ranged from 91.6% to 99.7%. Nine countries (Africa four, Americas three, Eastern Mediterranean one, Western Pacific one) reported not being able to test all donations for

HBV, with the percentage of donations tested in these countries ranging from 26.8% to 98.5%. Eleven countries (Africa five, Americas three, Western Pacific two, Eastern Mediterranean one) reported not being able to test all donations for HCV. The percentages of donations tested ranged from 17.5% to 99%. One country in the Western Pacific Region reported not testing donated blood for HCV. Nine countries (Africa three, Americas three, Eastern Mediterranean two, Western Pacific one) reported not being able to test all donations for syphilis. The percentages of donations tested ranged from 66.0% to 98.4%. Three European countries reported not routinely testing for syphilis as the result of a change in the national policy.

One country in Africa, three countries in the Eastern Mediterranean, two in the Americas and one in the Western Pacific were not able to provide data on the coverage of one or more screening tests for the four key infectious makers of HIV, HBV, HCV and syphilis.

Tables 11–14 show the status of coverage of laboratory screening for HIV-1/2, HBV, HCV and syphilis by WHO region.

**Table 11. Coverage of laboratory screening for HIV-1/2 by WHO region**

Region	100%	<100%	No/no routine test	Not answered
Africa	44	2	0	0
Americas	31	3	0	1
Eastern Mediterranean	16	1	0	3
Europe	43	0	0	0
South-East Asia	11	0	0	0
Western Pacific	24	1	0	0

**Table 12. Coverage of laboratory screening for HBV by WHO region**

Region	100%	<100%	No/no routine test	Not answered
Africa	42	4	0	0
Americas	31	3	0	1
Eastern Mediterranean	16	1	0	3
Europe	43	0	0	0
South-East Asia	11	0	0	0
Western Pacific	24	1	0	0

**Table 13. Coverage of laboratory screening for HCV by WHO region**

Region	100%	<100%	No test	Not answered
Africa	41	5	0	0
Americas	30	3	0	2
Eastern Mediterranean	16	1	0	3
Europe	43	0	0	0
South-East Asia	11	0	0	0
Western Pacific	21	2	1	1

**Table 14. Coverage of syphilis testing by WHO region**

Region	100%	<100%	No/no routine test	Not answered
Africa	40	3	0	1
Americas	31	3	0	1
Eastern Mediterranean	15	2	0	3
Europe	40	0	3	0
South-East Asia	11	0	0	0
Western Pacific	23	1	0	1

One potential barrier to the implementation of 100% screening policies for four key transfusion-transmitted infections (HIV, HBV, HCV and syphilis) is the irregular supply of test kits. In 2013, 35 countries (20 in Africa, seven in the Americas, four in Africa, two in the Eastern Mediterranean, and one each in South-East Asia and the Western Pacific) reported stock-outs of test kits for transfusion-transmissible infections at the national or regional level during the reporting period.

To assess whether blood screening was conducted in a quality-assured manner, data were collected on two aspects of quality assurance: use of standard operating procedures and participation in external quality assessment. Reports were received from 137 countries on the percentage of blood donations that were screened in facilities that met these quality assurance criteria. Overall, 97% of the donations reported by these countries were screened following these basic quality-assured procedures. In high-income countries, 99.6% of the donations were screened following basic quality-assured procedures, compared to 97% in upper middle-income countries, 81% in lower middle-income countries and 66% in low-income countries.

## **4.3 PREVALENCE OF MARKERS OF INFECTION IN BLOOD DONATIONS**

Prevalence of an infection among blood donations or the proportion of blood donations with a positive result is directly related to the safety of the blood supply, because it has an impact on the residual risk of distributed blood products for transfusion and also on the risk due to errors in blood quarantine and release (even though test-positive donations are discarded). Prevalence of an infection in blood donations is dependent on the prevalence of an infection in the population from which blood donors are selected, and on the effectiveness of donor recruitment and selection processes. Table 15 shows the proportion of blood donations with positive or reactive<sup>6</sup> results in screening tests for HIV, HBV, HCV and syphilis, by income group. Globally, the proportions vary greatly, with the lowest proportions in developed countries and the highest in developing countries for all infections.

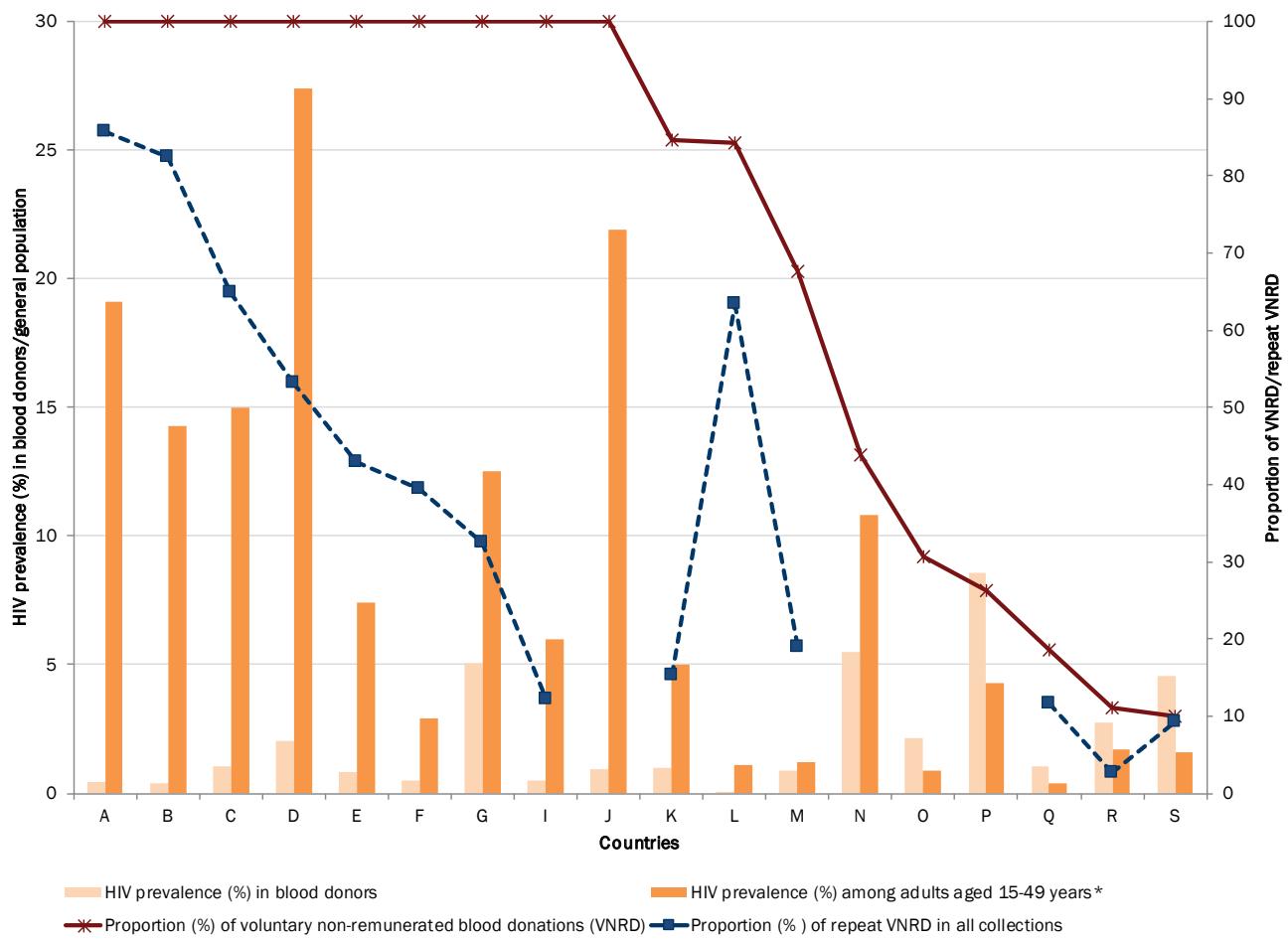
**Table 15. Proportions of blood donations with positive/reactive results on screening tests by World Bank income group**

Income group	Proportion of blood donations with positive/reactive results (median and interquartile range, %)			
	HIV	HBV	HCV	Syphilis
High	0.003 (<0.001–0.04)	0.03 (0.008–0.18)	0.02 (0.003–0.16)	0.05 (0.005–0.26)
Upper middle	0.08 (0.006–0.2)	0.39 (0.16–0.69)	0.21 (0.05–0.42)	0.31 (0.12–1.07)
Lower middle	0.20 (0.05–0.44)	1.60 (0.94–4.13)	0.40 (0.19–1.50)	0.58 (0.18–1.47)
Low	1.08 (0.56–2.69)	3.70 (3.34–8.47)	1.03 (0.67–1.80)	0.90 (0.31–1.88)

Figure 17 illustrates the prevalence of HIV infections in the general and blood donor population in selected countries of sub-Saharan Africa that reported confirmatory positive HIV results of blood donations to WHO. It shows that a high prevalence of HIV in the general population in a country does not mean that the prevalence rate of HIV in blood donors will inevitably be high. The figure also relates the percentage of voluntary non-remunerated donations in all collections and the percentage of repeat voluntary non-remunerated donations in selected sub-Saharan African countries, and shows that a blood collection system based on repeat and voluntary non-remunerated blood donors can greatly reduce the prevalence of HIV infection among the blood donors recruited.

<sup>6</sup> See Annex 1 for an explanatory note on the issue of varying testing/confirmatory strategies in countries, on which the reported numbers of positive/reactive test donations and proportion of positive/reactive results in blood donations tested were based.

**Figure 17. Prevalence of HIV infection in general and in blood donor population in selected sub-Saharan African countries**

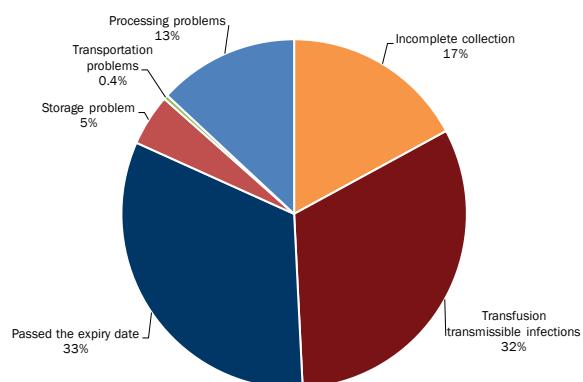


## 5 Discard of blood

Information on discarded blood donations was provided by 150 countries (48 high-income, 43 upper middle-income, 40 lower middle-income, and 19 low-income). Reactivity for markers of transfusion-transmissible infection, outdated stock, and incomplete collection were among the main reasons for discard (Figure 18). The median total discard rate was 9.0% in low-income countries, 10.9% in lower middle-income countries, 6.7% in upper middle-income countries and 5.7% in high-income countries (Table 16). Transfusion-transmissible infection was the most common reason for discard in low-income countries, with a median discard rate of 7.4%. Discard rates due to reactivity for markers of transfusion-transmissible infection for lower middle-income, upper middle-income, and high-income countries were 5.1%, 3.9% and 1.1%, respectively (Table 17). Globally, it is estimated that 1.8 million blood donations collected were discarded in 2013 due to transfusion-transmissible infection reactivity.

Table 18 shows the percentage of donations discarded due to expiry. The percentage varies across and within income groups. Appropriate stock management is required to reduce the wastage of blood due to expiry. The low percentage in low-income countries may reflect the wide existence of situations where there is no or low levels of stock and blood transfusions sometimes need to be arranged ad hoc based on demand.

**Figure 18. Distribution of discards of blood donations by reason, 2013**



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**Table 16. Percentage of total donations discarded by World Bank income group**

Income group	Median (range)
Low (n=19)	9.0 (0.6–20.0)
Lower middle (n=34)	10.9 (0.5–26.4)
Upper middle (n=37)	6.7 (0.5–21.3)
High (n=39)	5.7 (0.8–27.2)

**Table 17. Percentage (median and range) of donations discarded due to reactivity for markers of transfusion-transmissible infection by World Bank income group**

Income group	Median (range)
Low income (n=16)	7.4 (0.5–17.0)
Lower middle income (n=37)	5.1 (0.4–23.0)
Upper middle income (n=35)	3.9 (0.01–16.0)
High income (n=40)	1.1 (<0.001–11.7)

**Table 18. Percentage (median and range) of donations discarded due to outdate/expiry by World Bank income group**

Income group	Median (range)
Low income (n=14)	1.3 (0.01–7.5)
Lower middle income (n=31)	3.1 (0.1–14.9)
Upper middle income (n=32)	4.7 (0.04–25.8)
High income (n=443)	2.7 (0.001–20.9)

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## 6 Clinical use of blood

### 6.1 TRANSFUSION OF BLOOD AND BLOOD COMPONENTS

There is evidence of significant differences in patterns of blood use between high-, middle- and low-income countries. In high-income countries, transfusion is most commonly used for supportive care in cardiovascular and transplant surgery, massive trauma, and therapy for solid and haematological malignancies. In low- and middle-income countries, on the other hand, it is more often used to treat pregnancy-related complications and severe childhood anaemia.<sup>7</sup>

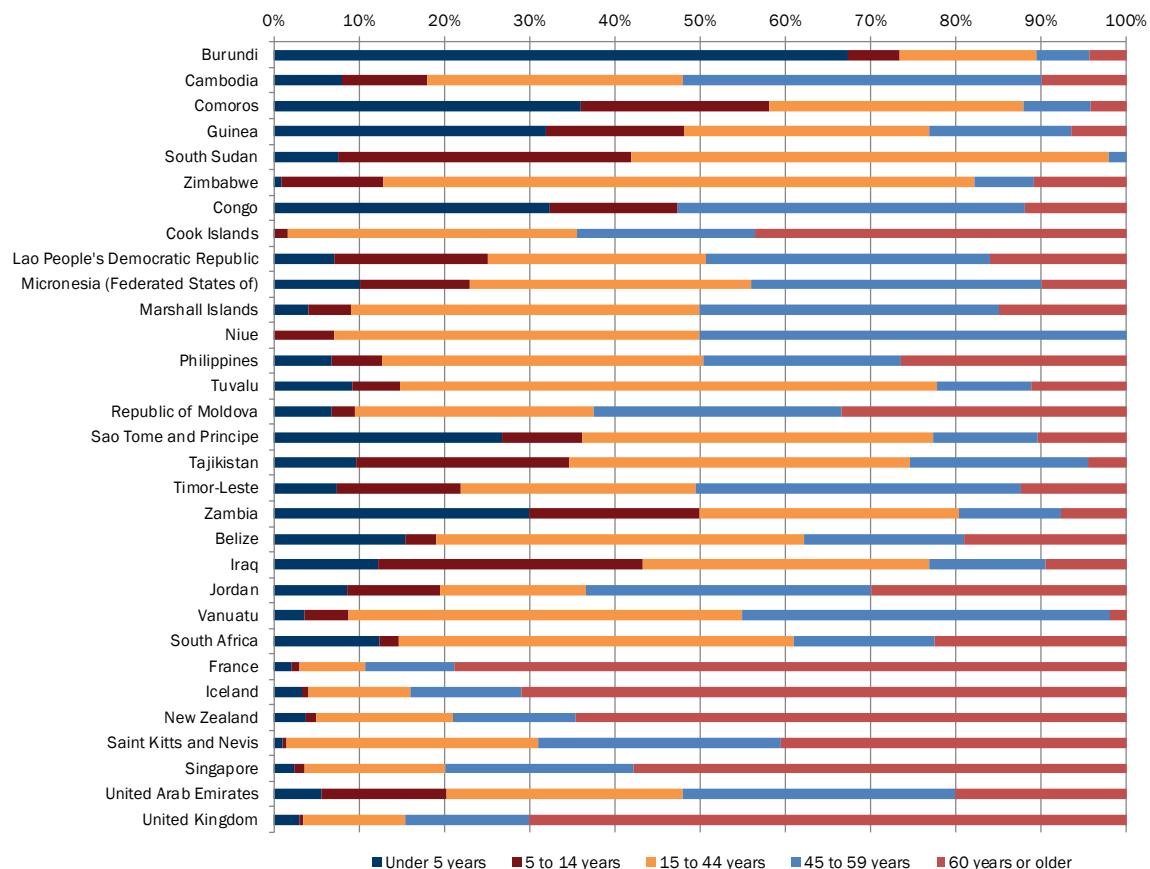
Data reported to WHO indicate significant differences in the age distribution of patients transfused. In high-income countries, the most frequently transfused patient group is aged over 60 years, which accounts for up to 79% of all transfusions. In low- and middle-income countries, up to 67% of all transfusions are for children under the age of 5 years, usually followed by females aged between 15 and 45 years. Figure 19 provides examples of the age distribution of patients transfused in countries of different income groups: Burkina Faso, Burundi, Cambodia, Comoros, Guinea, South Sudan, Zimbabwe (low-income group); Belize, Congo, Iraq, Jordan, Lao People's Democratic Republic, Micronesia (Federated States of), Philippines, Republic of Moldova, Sao Tome and Principe, South Africa, Tajikistan, Timor-Leste, Zambia (middle-income group); and Saint Kitts and Nevis, Singapore, United Arab Emirates, and United Kingdom<sup>8</sup> (high-income group).

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<sup>7</sup> Mafirakureva N, Khoza S, Hassall O, Faragher BE, Kajja I, Mvere DA et al. "Profiles of blood and blood component transfusion recipients in Zimbabwe." *Blood Transfusion*. 2015;13(4):600–9. doi:10.2450/2015.0019-15.

<sup>8</sup> Databased on subnational data provided by the Scottish National Blood Transfusion Service.

**Figure 19. Age distribution of patients who received transfusion in selected countries**



A measure of variation in clinical use is the proportion of blood that is transfused as whole blood rather than blood components, which can target specific deficiencies. GDBS data reveal great variations in the use of whole blood for transfusion among different country income groups. In high-income countries, whole blood is rarely used for transfusion, while in upper middle-, lower middle- and low-income countries, 1%, 24% and 85% of blood respectively was transfused as whole blood (Table 19). As health systems develop and become able to offer a wider range of diagnostic and treatment options, component therapy becomes increasingly important for the clinical management of patients.

**Table 19. Proportion (median and interquartile range) of whole blood transfusions among all red cell transfusions by World Bank income group**

Income group	Median (and range)
Low (n=26)	85.0 (36.9–98.7)
Lower middle (n=32)	24.0 (0.3–48.7)
Upper middle (n=39)	1.0 (0–10.7)
High (n=48)	0 (0–0.2)

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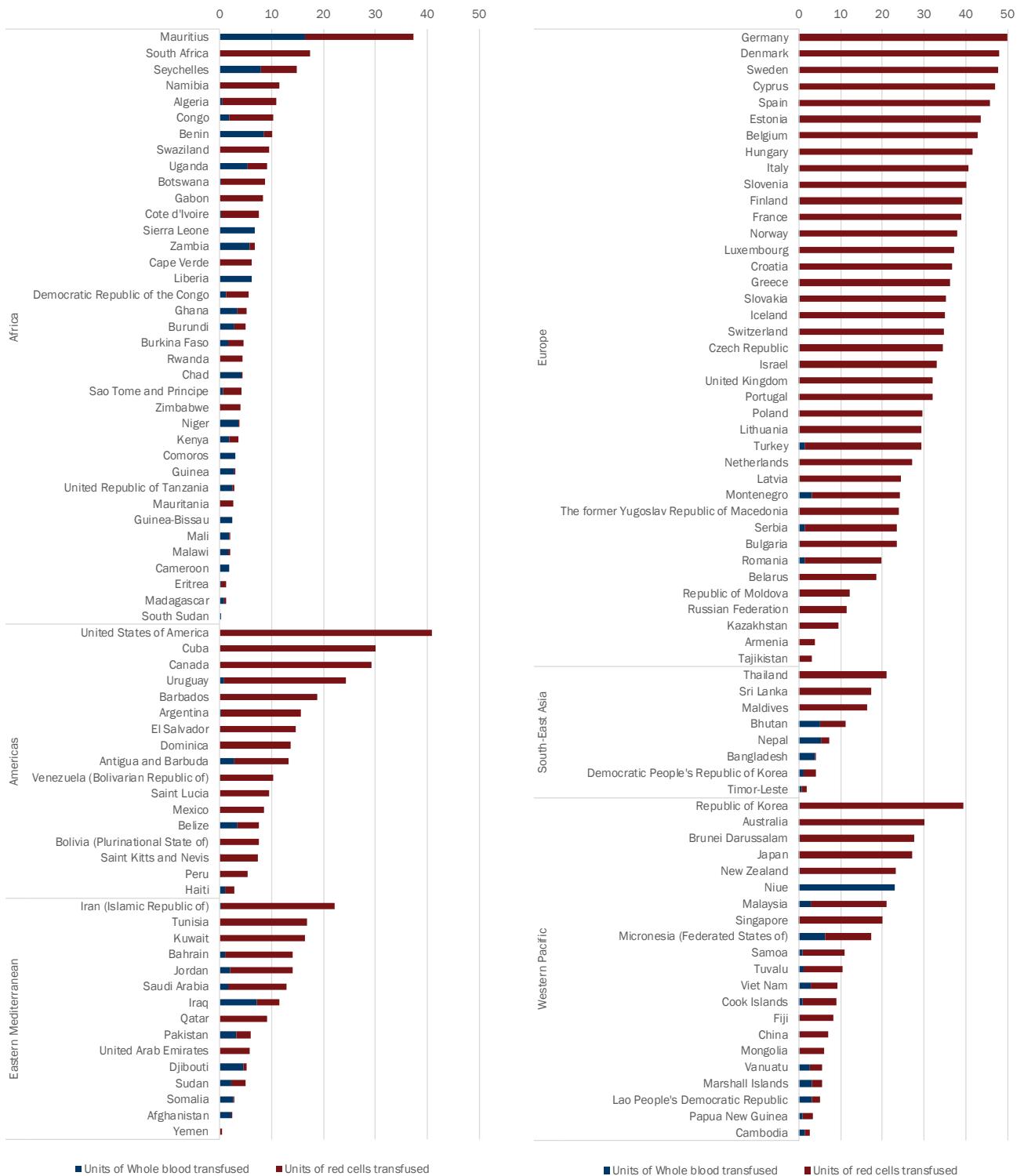
A rate of 32.0 units of red cell components (including whole blood and red cells transfused) per 1000 population (range 7–49) was reported by high-income countries, whereas the transfusion rate was 12.5 units (range 6.1–37.4) in upper middle-income countries, 5.38 units (range 0.42–17.4) in lower middle-income countries, and 3.41 units (range 0.32–10.0) in low-income countries. Figure 20 shows the units of red cells/whole blood transfused per 1000 population in countries.

Transfusion rates of other blood components can be calculated in a similar way. Varying rates of units of fresh frozen plasma transfused per 1000 population were reported by high-income countries, ranging from 2.2 units to 18.9 units per 1000 population (median 7.6). Upper middle-income countries reported rates ranging from below 0.1 units to 22 units transfused per 1000 population (median 3.3). The comparable rates reported by countries in the lower middle-income group and low-income group ranged from below 0.1 to 14.8 units (median 0.83) and from below 0.01 to 1.0 units (median 0.06) per 1000 population, respectively. Figure 21 shows the units of fresh frozen plasma transfused per 1000 population in countries, grouped by WHO region.

Regarding platelet transfusions, high-income countries reported a rate ranging from 0.81 to 11.8 units of platelet transfused (in units of the dosage equivalent to apheresis platelet/adult dosage) per 1000 population (median 3.54), and upper middle-income countries reported a rate ranging from 0.01 to 4.38 units (median 0.87) per 1000 population. The rate reported by lower middle-income and low-income groups ranged from below 0.01 to 1.95 units (median 0.02) per 1000 population.

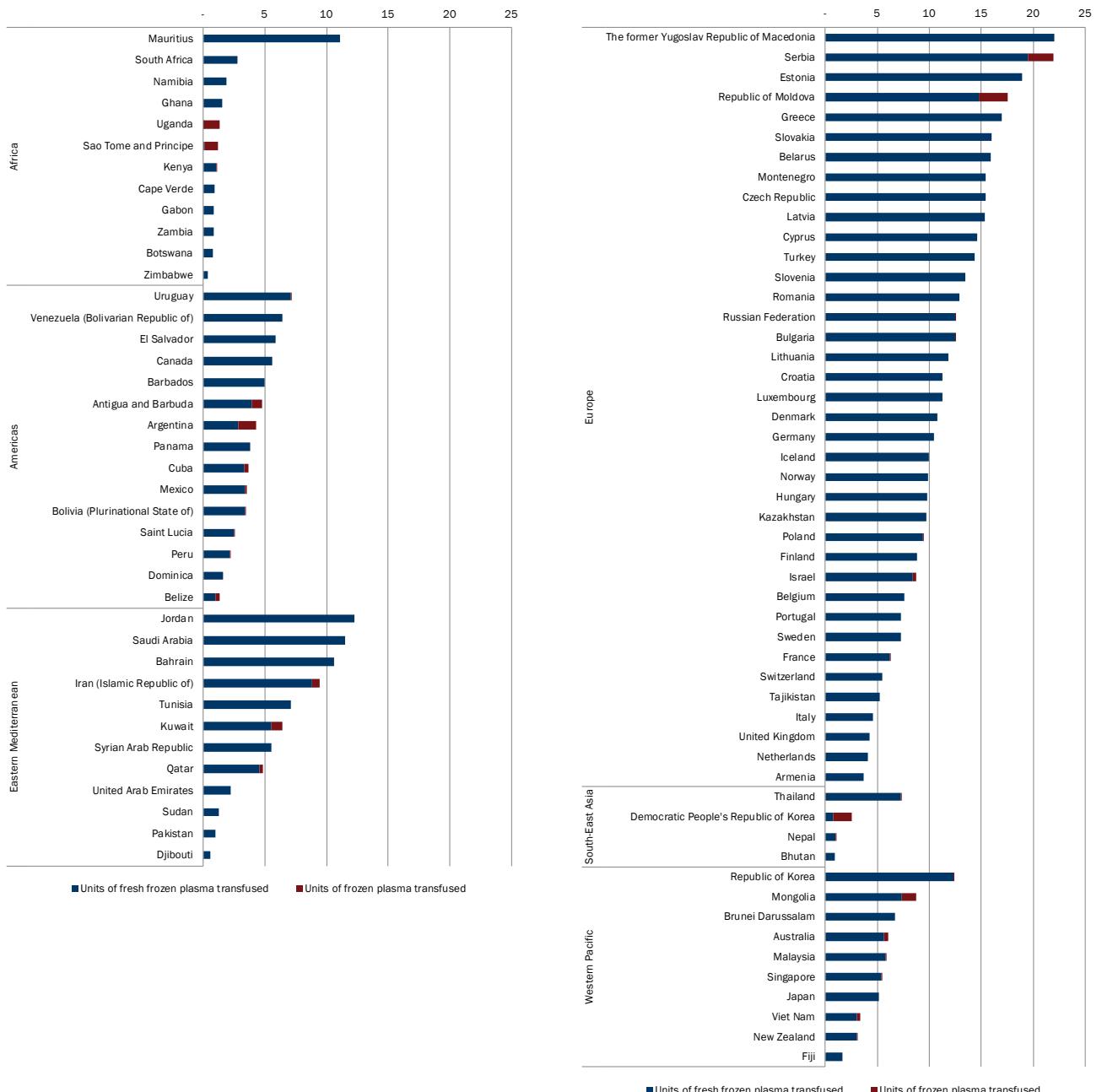
Platelets can be prepared from whole blood (whole blood-derived platelets) or can be prepared through the apheresis procedure (apheresis platelets). Figure 22 shows the units of platelets (adult dosage) transfused per 1000 population in countries reporting to WHO. It also shows that different strategies were adopted in countries for the supply of platelets for transfusion. Countries such as Belgium, China, Czech Republic, Germany, Hungary, Iceland, Japan, Kazakhstan, Kuwait, Lithuania, Namibia, Slovakia, Switzerland, the United Kingdom, the United States and Viet Nam mainly provided platelets through apheresis collection; Other countries provided platelets entirely or mainly through the preparation of whole blood collections.

**Figure 20. Units of whole blood and red cells transfused per 1000 population in countries by WHO region**

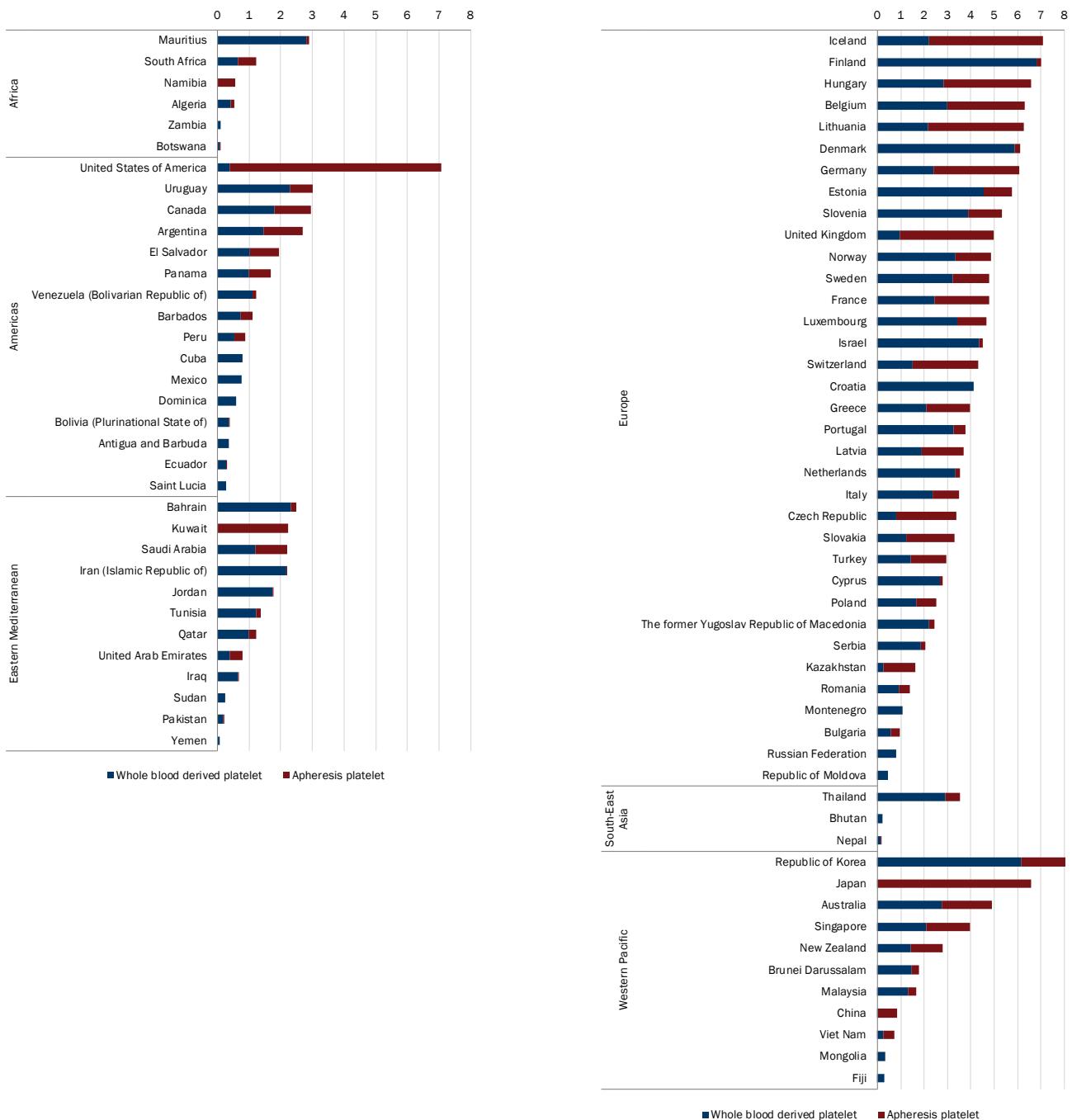


Note: Caution should be taken in interpreting data on the number of units transfused in low- and lower middle-income countries. It is possible that in some cases the paediatric units derived from an adult unit were counted as multiple units when reported to WHO. Paediatric units in some countries in these groups are very frequently supplied and transfused. Many countries reported number of components issued instead of transfused, if the transfused numbers are not available.

**Figure 21. Units of fresh frozen plasma transfused per 1000 population in countries by WHO region**



**Figure 22. Units of platelets transfused per 1000 population in countries by WHO region**



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## **6.2 MECHANISMS TO IMPROVE AND MONITOR SAFE AND APPROPRIATE BLOOD TRANSFUSION**

Although many factors operate to explain the considerable variation in transfusion practice between countries (and within countries), one key factor is variable uptake and implementation of best practice, informed by high-quality research. A 2016 update of earlier Cochrane systematic reviews<sup>9</sup> on the use of red cell transfusions highlighted an expanding number of randomized controlled trials which provided good evidence for avoiding unnecessary transfusions with allogeneic red cells in most patients at haemoglobin thresholds above 7.0 to 8.0 grams per decilitre. Strategies to implement this research would minimize risk of exposure to blood for transfusion, which is particularly important given variability in practices of laboratory screening for potential transfusion-transmitted infections.

Several measures may be used to assess how a country supports implementation of evidence-based practice. Attention is now increasingly being focused on improving clinicians' use of blood in accordance with evidence-based guidelines, which are important tools in the education of those ordering blood components and are prerequisite for establishing systems for the appropriate clinical use of blood, such as clinical audit. In 2013, 126 countries reported the existence of national guidelines on the clinical use of blood. Across WHO regions, 34 (74%) countries in Africa, 20 (57%) in the Americas, 14 (70%) in the Eastern Mediterranean, 33 (77%) in Europe, 8 (72%) in South-East Asia and 17 (68%) in the Western Pacific reported the existence of national guidelines on the clinical use of blood.

Data reported by 154 countries to the GDBS (41 in Africa, 26 in the Americas, 18 in the Eastern Mediterranean, 38 in Europe, 8 in South-East Asia and 23 in the Western Pacific) identified more than 67 000 hospitals performing blood transfusions serving a total population of around 3.3 billion. Data reported by 109 countries (33 in Africa, 13 in the Americas, 13 in the Eastern Mediterranean, 23 in Europe, seven in South-East Asia and 20 in the Western Pacific) showed that hospital transfusion committees were reported as present in 39% (14 190 out of 36 634) of hospitals performing transfusion. Across WHO regions, the percentage is 14% in African, 20% in the Americas, 57% in the Eastern Mediterranean, 92% in Europe, 57% in South-East Asia and 25% in the Western Pacific (Table 20).

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<sup>9</sup> Carson JL, Stanworth ST, Rouбинian N, et al. "Transfusion thresholds and other strategies for guiding allogeneic red blood cell transfusion (review)." *Cochrane Database Syst Rev*. 2016 Oct 12. DOI: 10.1002/14651858.CD002042.pub4

**Table 20. Number and percentage of transfusion-performing hospitals that had hospital transfusion committees by WHO region**

WHO region (countries)	Number of transfusion-performing hospitals	Number of hospitals with hospital transfusion committees	Percentage
Africa (n=33)	4 507	641	14%
Americas (n=13)	9 084	1 825	20%
Eastern Mediterranean (n=13)	2 233	1 278	57%
Europe (n=23)	5 529	5 472	92%
South-East Asia (n=7 <sup>a</sup> )	3 662	2 098	57%
Western Pacific (n=20)	11 619	2 876	25%

<sup>a</sup> The seven countries are Bangladesh, Bhutan, Democratic People's Republic of Korea, Nepal, Sri Lanka, Thailand and Timor-Leste.

Even fewer countries provided answers to the questions on whether transfusion-performing hospitals had or participated in systems of reporting adverse events or conducted clinical audits. Data reported by 97 countries (Africa 26, the Americas 12, Eastern Mediterranean nine, Europe 25, South-East Asia five and Western Pacific 20) indicate that systems for reporting adverse transfusion events were present in 17% of hospitals in countries in Africa, 91% in the Americas, 32% in the Eastern Mediterranean, 99% in Europe, 59% in South-East Asia and 37% in the Western Pacific (Table 21). Data reported by 67 countries (Africa 21, the Americas five, Eastern Mediterranean five, Europe 15, South-East Asia five, Western Pacific 16) show that an overall clinical audit was conducted in 7% of hospitals in the countries in Africa, 38% in the Americas, 24% in the Eastern Mediterranean, 83% in Europe, 58% in South-East Asia and 21% in the Western Pacific (Table 22).

**Table 21. Number and percentage of transfusion-performing hospitals that had or participated in a system of reporting adverse transfusion reactions by WHO region**

WHO region (countries)	Number of transfusion-performing hospitals	Number of hospitals that had or participated in system of reporting adverse events	Percentage
Africa (n=26)	3 588	596	17%
Americas (n=12)	26 764	24 455	91%
Eastern Mediterranean (n=9)	1 001	319	32%
Europe (n=25)	5 529	5 472	99%
South-East Asia (n=5 <sup>a</sup> )	3 271	1 913	59%
Western Pacific (n=20)	4 329	11 734	37%

<sup>a</sup> The five countries are Bhutan, Democratic People's Republic of Korea, Nepal, Thailand and Timor-Leste.

**Table 22. Number and percentage of transfusion-performing hospitals that conducted clinical audit, by WHO region**

WHO region (countries)	Number of transfusion-performing hospitals	Number of hospitals that conducted clinical audit	Percentage
Africa (n=21 <sup>a</sup> )	1 539	114	7%
Americas (n=5)	3 183	1 207	38%
Eastern Mediterranean (n=5)	925	220	24%
Europe (n=15)	4 040	3 339	83%
South-East Asia (n=5 <sup>b</sup> )	3 262	1 884	58%
Western Pacific (n=16 <sup>c</sup> )	537	115	21%

<sup>a</sup> The 21 countries do not include Democratic Republic of Congo which reported that of 1459 blood transfusion-performing hospitals 875 (60%) conducted clinical audit.

<sup>b</sup> The five countries are Bhutan, Democratic People's Republic of Korea, Nepal, Thailand and Timor-Leste.

<sup>c</sup> The 16 countries are Brunei Darussalam, Cambodia, Cook Islands, Kiribati, Lao People's Democratic Republic, Malaysia, Micronesia (Federated States of), Mongolia, New Zealand, Niue, Papua New Guinea, Philippines, Singapore, Tuvalu, Vanuatu, and Viet Nam. Australia, China, Japan and the Republic of Korea reported that large numbers of hospitals performed blood transfusions, but did not answer this question.

Many countries did not answer, or only partially answered, the questions in this section, thereby limiting the ability to report on this measure. Caution must therefore be used when extrapolating the data beyond those countries that reported data to WHO. Lack of national data on the situation in both developed and developing countries reflects that this is an area of blood transfusion safety where more attention and possibly more interventions are required. In addition, operational studies in clinical use of blood are required so that more information and evidence are available.

### 6.3 HAEMOVIGILANCE

An important component of a blood safety system is the establishment of haemovigilance, which includes efforts to monitor and evaluate adverse events associated with the blood supply and transfusion service and to use the findings to improve blood safety and transfusion outcomes. GDBS 2013 indicates that 39% (70 of 180) countries reported having a national haemovigilance system. Across WHO regions, Europe had the highest percentage, with 77% (33 of 43) countries that reported having such a system. The percentages of countries that reported having national haemovigilance systems in other WHO regions are 46% (five of 11) for South-East Asia, 35% (seven of 20) for the Eastern Mediterranean, 32% (eight of 25) for the Western Pacific, 26% (12 of 42) for Africa, and 14% (five of 35) for the Americas.

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## **7 Plasma used for fractionation and the provision of plasma-derived medicinal products**

Fifty-one countries reported various arrangements for utilizing plasma collected in the country for fractionation. Of those, 37 countries reported that the plasma was fractionated through domestic or contract fractionation, eight countries reported selling the plasma to the fractionator and purchasing plasma-derived medicinal products (PDMP) from the market (not necessarily the product produced through manufacturing of the plasma originated from the countries), and six countries reported having both above options. One country (Croatia) reported closing the fractionation plant and changing the strategy for the provision of PDMP during the year.

Data on the volume of plasma sent for fractionation by the blood services in 2013 were obtained from 44 countries, which reported the collection of a total of around 14.4 million litres of plasma for fractionation. A review of modern plasma fractionation in 2007 by Burnouf<sup>10</sup> indicated that between 23 million and 28 million litres of human plasma are fractionated annually in the world. The lower volume derived from the WHO GDBS could be due to the fact that not all collections of source plasma have been reported to the GDBS. A total of 96 countries reported that all PDMP are imported: 17 countries reported that no PDMP were used during the reporting period. 16 countries did not answer the question.

An analysis by collection method (recovered from whole blood or by apheresis) shows that 41% of the plasma sent for fractionation by the blood establishment is from recovered plasma. In Europe, 4.1 million litres of recovered plasma were fractionated, accounting for 58% of the fractionated plasma in the region. In the Western Pacific Region, more than 1 million litres of recovered plasma were fractionated, accounting for 17% of the total volume of fractionated plasma reported in the region. Of the plasma fractionated in the Western Pacific Region, 83% (5.3 million litres) was collected through the apheresis procedure (Table 23).

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<sup>10</sup> Burnouf T. Modern plasma fractionation. *Transfusion Medicine Review*. 2007;21(2):101–17.

**Table 23. Volume (litres) of plasma for fractionation by collection method and WHO region, 2013**

Region	Recovered plasma	Apheresis plasma	Total	% of recovered plasma
Africa (n=1)	203 529	5 147	208 676	98
Americas (n=7)	283 000	20 000	303 000	96
Eastern Mediterranean (n=2)	122 216	123 165	245 381	50
Europe (n=26)	4 102 012	2 913 119	7 015 131	58
South-East Asia (n=1)	57 000	3 000	60 000	95
Western Pacific (n=7)	1 056 606	5 293 169	6 349 775	17
Total (n=44)	5 824 363	8 357 600	14 365 181	41

The volume of plasma for fractionation (and processing for PDMP) per 1000 population varied considerably between countries, ranging from 0.4 to 53.7 litres, with a median of 5.7 litres.

Twenty-six countries provided information on supplies of albumin, intravenous immunoglobulin and factor VIII (excluding recombinant products) and the proportion of products supplied through fractionation (domestic or contract fractionation) of plasma collected in the country. Denmark, Finland, Luxembourg, the Netherlands, New Zealand, Slovakia and South Africa reported that 70% or more of the three PDMP (Albumin, IVIG factor VIII) were provided by fractionation of plasma collected in the country; Australia, Canada, Japan and Republic of Korea reported 70% or more for at least two of these three products were provided by fractionation of plasma collected in country. Annex 10 provides information on the proportion of supplies of different PDMP manufactured through fractionation (domestic or contract fractionation) of the plasma collected in the country.

World Health Assembly resolution WHA63.12 urges Member States to establish, implement and support nationally coordinated, efficiently managed and sustainable blood and plasma programmes according to the availability of resources, with the aim of achieving self-sufficiency. It is the responsibility of individual governments to ensure sufficient and equitable supply of plasma-derived medicinal products, including immunoglobulins and coagulation factors, which are needed to prevent and treat a variety of serious conditions that occur worldwide.

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# **8 Organization and management of national blood transfusion services**

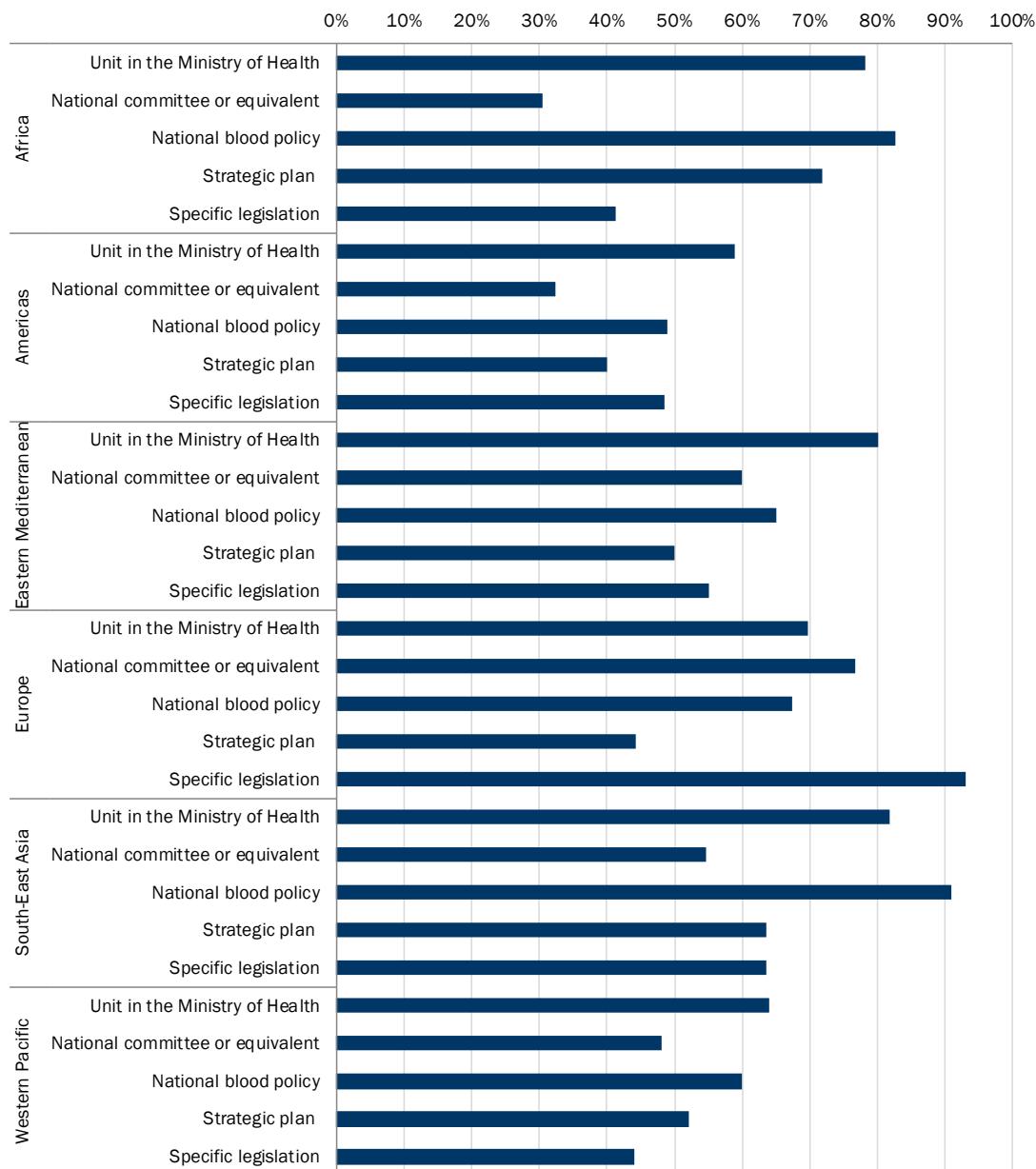
## **8.1 POLICY AND GOVERNANCE**

Overall, 122 countries (accounting for 68% of the total reporting countries) had a national blood policy. Ninety-six countries (53%) had a multiyear national strategic plan for blood safety in 2013. In 127 countries (71%), a unit within the ministry of health (or other government department) had responsibility for governing all activities related to provision and transfusion of blood and blood products. In 88 countries (49%), a national blood committee (or equivalent) assisted the ministry of health in formulating policy and plans, setting standards and advising on key issues.

Across the WHO regions (ranked by percentage), 17 (49%) countries in the Americas, 15 (60%) in the Western Pacific, 13 (65%) in the Eastern Mediterranean, 29 (67%) in Europe, 38 (83%) in Africa and 10 (91%) in South-East Asia reported having a national blood policy. Similarly, 14 (40%) countries in the Americas, 19 (44%) in Europe, 10 (50%) in the Eastern Mediterranean, 13 (52%) in the Western Pacific, 7 (64%) in South-East Asia and 33 (72%) in Africa reported having a multiyear strategic plan for blood safety in 2013. (Figure 23).

A total of 105 countries (58%) reported the existence of specific legislation covering the safety and quality of blood transfusion, compared with 92 countries (56%) in 2008. Across WHO regions (ranked by percentage), 19 (41%) countries in Africa, 11 (44%) in the Western Pacific, 17 (49%) in the Americas, 11 (55%) in the Eastern Mediterranean, 7 (64%) in South-East Asia and 40 (93%) in Europe reported having such legislation.

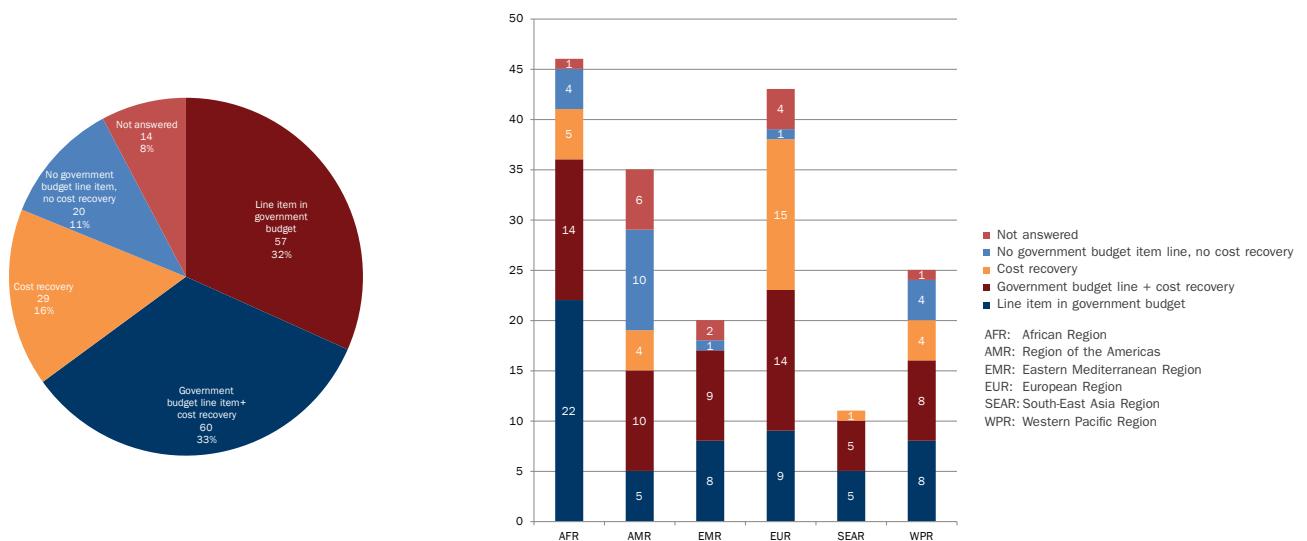
**Figure 23. Governance mechanisms for blood transfusion by WHO region, 2013**



Overall, 57 (32%) of countries reported that the government budget had a specific line item for the blood transfusion services. Twenty-nine countries (16%) reported that they had a cost recovery system for blood transfusion services; 60 (33%) reported having both a specific budget for blood services and a cost recovery system; 20 (11%) reported that there was neither a specific budget nor a cost recovery system for blood transfusion services (Figure 24). Across WHO regions, 67% of countries (29 of 43) in Europe reported financing the blood services through a cost recovery scheme, either partially or entirely, while in Africa, government budget allocations were the main mechanism for blood service financing: 48% of countries (22 of 46)

financed the blood services solely through government budget allocation (Figure 24).

**Figure 24. Systems of blood services financing**



Sixty-three countries reported receiving financial support from international agencies or other organizations for blood services. These included 36 (accounting for 78% of the reporting countries) in Africa, three (9%) in the Americas, five (25%) in the Eastern Mediterranean, four (10%) in Europe, eight (73%) in South-East Asia and seven (28%) in the Western Pacific. Eighty-seven countries reported receiving technical support from international agencies or organizations for their blood services, including 38 countries (83%) in Africa, 15 (44%) in the Americas, seven (35%) in the Eastern Mediterranean, eight (19%) in Europe, nine (82%) in South-East Asia and 10 (40%) in the Western Pacific.

Annex 12 lists the agencies that provide financial or technical support to the countries to support national blood services, as reported by the countries to WHO GDBS.

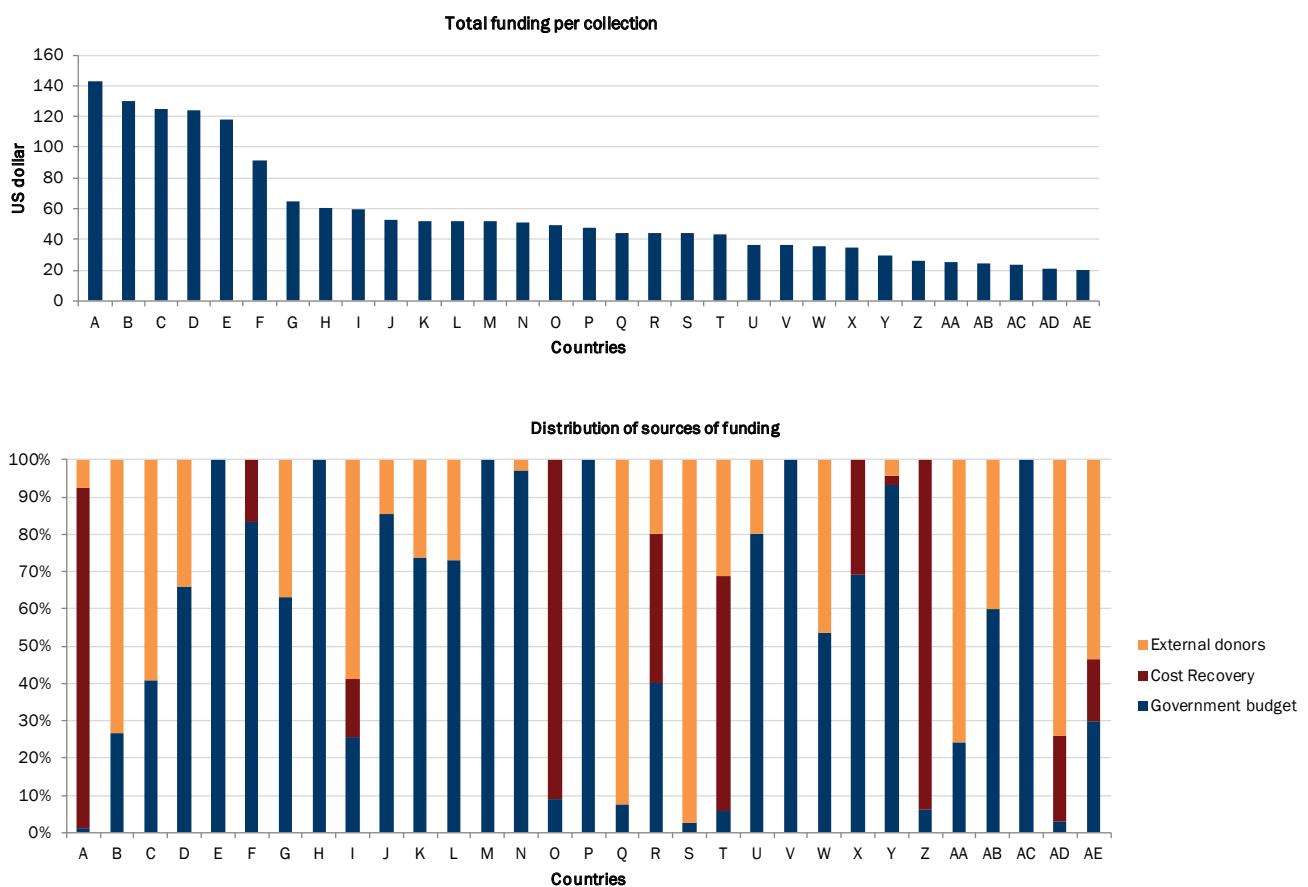
Sixty-two countries provided data on the total funding for the operation of the blood centres covered by the report. Sixty countries also provided the funding sources (government budgetary allocation, cost recovery, or financial support from external donors). Looking at the relationship between total funding and total blood donations reported, varying funding levels per collection were found across the country income groups (Table 24). In general, funding per collection was higher in more economically developed countries. There were also variations among countries in the same income group. It is of concern

that many low- and lower middle-income countries reported that funding per collection was very low, or that the funding source was heavily dependent on external financial support (Figure 25).

**Table 24. Total funding per collection in countries (US\$)**

Income group	Total funding per collection (US\$) (median, range)
High (n= 19)	308 (84–642)
Upper middle (n=11)	67 (22–219)
Lower middle (n=16)	50 (21–124)
Low (n=16)	36 (20–143)

**Figure 25. Total funding per collection and sources of funding in selected lower middle-income and low-income countries**

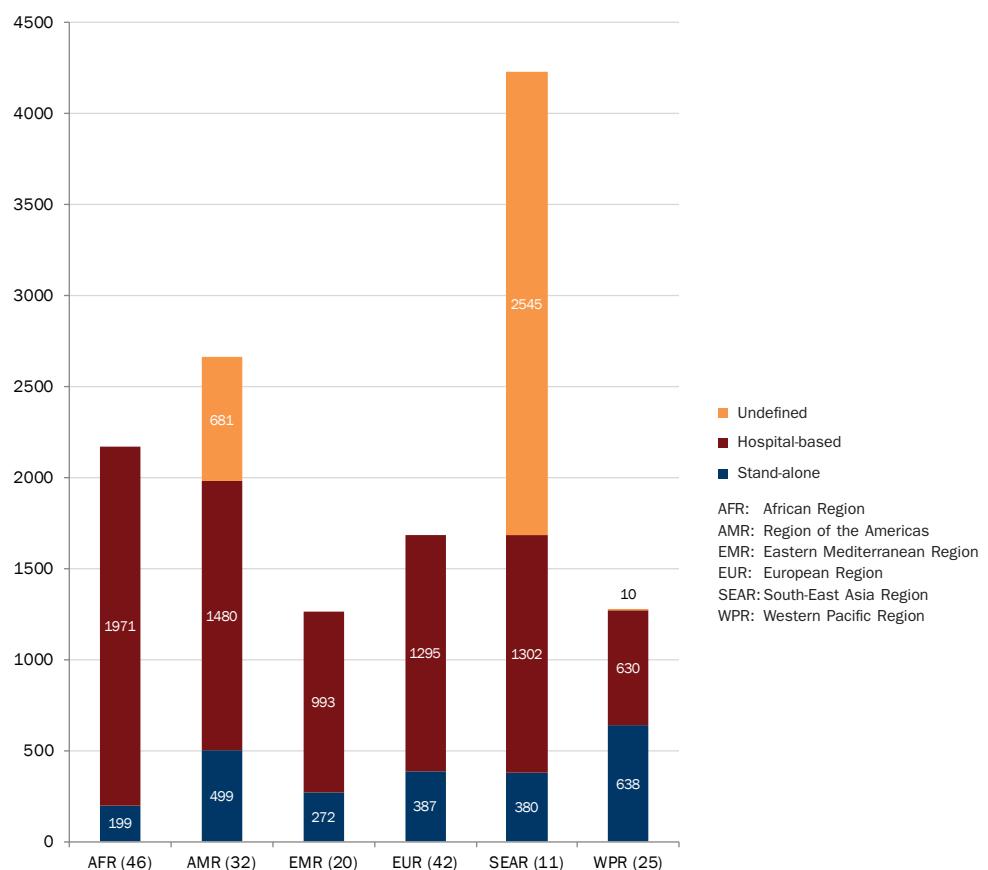


## 8.2 ORGANIZATION OF BLOOD COLLECTING AND PROCESSING FACILITIES

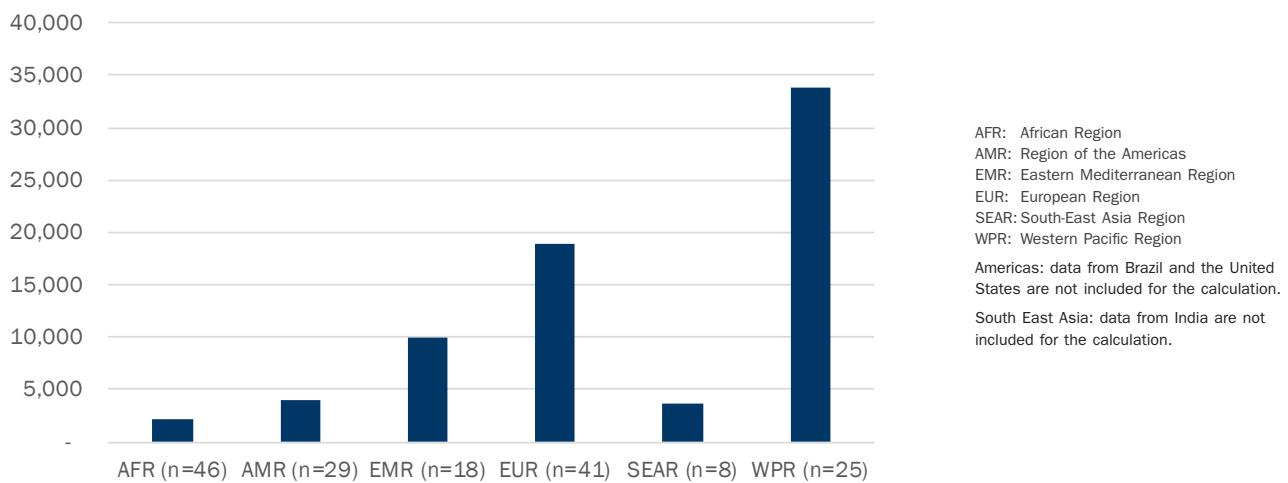
The national blood service should be organized and coordinated by the ministry of health in a manner that ensures the most efficient and cost-effective use of resources. Blood transfusion services may operate either under a single service provider, such as a national blood transfusion service, or through multiple organizations and institutions. Whichever service delivery model is in place, blood transfusion services should be coordinated at national, regional and provincial levels, with critical activities such as blood screening and processing preferably consolidated in strategic locations.

Globally, a total of 13 282 blood centres was reported in 2013. There were 2375 (18%) stand-alone blood centres, and 7 671 (58%) hospital-based blood centres. Five countries reported a total number of 3 236 (24%) blood centres without differentiating the types of the centres. More than half of the blood centres in the Western Pacific Region were stand-alone blood centres. The average test samples processed per blood-screening blood centre or laboratory were also highest in the Western Pacific Region, among all WHO regions (Figures 26 and 27).

**Figure 26. Blood centres reported by countries, by WHO region**



**Figure 27. Average number of samples processed per blood screening laboratory/centre per year**



### **8.3 QUALITY ASSURANCE AND MONITORING**

A total of 155 countries (accounting for 87% of the total reporting countries) reported the existence of national standards for the collection, testing, processing, storage and distribution of blood and blood products. Across the WHO regions, 44 countries (96%) in Africa, 41 (95%) in Europe, 25 (74%) in the Americas, 21 (84%) in the Western Pacific and nine (82%) in South-East Asia and 15 (75%) in the Eastern Mediterranean reported having national standards.

Ninety-eight countries (55%) reported that there was a system of regular inspection of the blood transfusion services by the national regulatory agency or another entity. Across the WHO regions (ranked by percentage), 15 (33%) of countries in Africa, 14 (40%) in the Americas, 11 (55%) in the Eastern Mediterranean, 14 (56%) in the Western Pacific, eight (73%) in South-East Asia and 36 (84%) in Europe reported the existence of a system of regular inspection.

A total of 100 countries (57%) reported there was a system of licensing of the blood transfusion services by the national regulatory agency or another entity. Across the WHO regions (ranked by percentage), 17 (37%) countries in Africa, 11 (44%) in the Western Pacific, 19 (53%) in the Americas, 11 (55%) in the Eastern Mediterranean, six (55%) in South-East Asia, and 36 (84%) in Europe reported having such a system.

A total of 120 countries (67%) reported that there was a national external quality assessment scheme for laboratory screening for transfusion-transmissible infections. Ninety-four countries (52%) reported that there was a national external quality assessment scheme for blood group serology and compatibility testing. Across the WHO regions (ranked by percentage), 14 (56%) countries in the Western Pacific, 28 (61%) in Africa, 21 (60%) in the Americas, 13 (63%) in the Eastern Mediterranean, 34 (79%) in Europe , and ten (91%) in South-

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East Asia reported having a national external quality assessment scheme for laboratory screening for transfusion-transmissible infections. Eleven (44%) in the Western Pacific, nine (45%) in the Eastern Mediterranean, 16 (47%) in the Americas, 22 (48%) in Africa, Six countries (55%) in South-East Asia, and 30 (70%) in Europe reported having a national external quality assessment scheme for blood group serology and compatibility testing.

Overall, 54 countries (30%) reported that their national blood transfusion services were accredited. Across WHO regions (ranked by percentage), three (7%) countries in Africa, three (27%) in South-East Asia, seven (28%) in the Western Pacific, 10 (29%) in the Americas, six (30%) in the Eastern Mediterranean and 25 (58%) in Europe reported that their (national) blood transfusion services were accredited. In total, 771 blood centres were accredited, according to the report. Of these 54 countries, 21 countries reported that all the blood centres in their countries were accredited, and the rest reported only a few of the total number of centres were accredited, with the percentage range from 1.1% to 84.5%.

A total of 115 countries (64%) reported the existence of a programme of continuing education for personnel involved in blood transfusion. Seventy-three countries (41%) reported the existence of educational programmes that offered a nationally recognized university degree or diploma in blood transfusion medicine or science. Across WHO regions (ranked by percentage), 16 (46%) countries in the Americas, 23 (50%) in Africa, 16 (64%) in the Western Pacific, 15 (75%) in the Eastern Mediterranean, nine (82%) in South-East Asia and 36 (84%) in Europe reported having such a programme of continuing education for personnel involved in blood transfusion. Ten (22%) countries in Africa, five (25%) in the Eastern Mediterranean, seven (28%) in the Western Pacific, 15 (43%) in the Americas, six (56%) in South-East Asia and 30 (70%) in Europe reported the existence of educational programmes that offered a nationally recognized university degree or diploma in blood transfusion medicine or science.

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## **9 Discussion and conclusions**

### **9.1 AVAILABILITY OF BLOOD AND BLOOD PRODUCTS FOR TRANSFUSION**

There are currently no global standards for the estimation of national requirements for blood and blood products. The need for blood and blood products is dynamic and is dependent on many factors related to health service coverage, the level of development and sophistication of the health care system and hospital blood usage. Nevertheless, the whole blood donation rate per 1000 population can be considered as a general indicator for the availability of blood for transfusion in a country and as an indicator of comparability in countries at similar levels of economic and social development. Although there has been a general increase in blood collections in all the WHO regions and World Bank income groups, the current levels of blood collection in low-income countries remain too low to cover the blood requirements of their health care systems. Strategies to improve blood collection in these countries need to be developed or strengthened and effectively implemented.

Regular voluntary non-remunerated blood donation is a key component for any successful blood programme. This ensures adequacy and sustainable availability of quality blood and blood products. There was an increase of 10.7 million voluntary blood donation units in the reporting period between 2008 and 2013. However, 70 countries remained considerably dependent on family/replacement and paid blood donors, with these donations accounting for more than 50% of their blood supplies in 2013. Greater efforts and investment are required to increase the collection of voluntary non-remunerated blood donations so as to reduce the reliance on family/replacement and paid blood donors for the national blood supply.

Donor retention is important in further improving the safety and quality of the blood supply. Countries in the European Region have higher retention rates than the other regions. These countries also have safer blood supplies. Countries such as South Africa, where the retention rate is over 80%, have managed to keep the prevalence of transfusion-transmissible infections among blood donors at much lower levels than in the general population. Donor retention strategies need to be emphasized in all the other countries and regions to achieve the same level of safety.

Treatment using labile blood components is gradually being expanded in medical practice in developing countries and increased quantities of recovered plasma will become available for fractionation into PDMP to meet their

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needs. It is important for such countries to develop appropriate standards for donor recruitment, selection and care and to put in place appropriate blood component separation technology and fractionation capacity, quality systems and good manufacturing practices to improve the quality of plasma for fractionation and also explore the development of alternative mechanisms for contract fractionation of recovered plasma in this developmental and transitional period.

## **9.2 LABORATORY SCREENING AND TESTING**

Obtaining data on testing of donor blood is critical in getting a global picture of the blood safety situation from the testing point of view. The report however indicates that there are some countries in the various regions that are as yet unable to test for one or more of the markers of transfusion-transmissible infections among their donor populations. This poses a serious compromise in the safety of the blood supply in these countries and requires urgent action by national authorities to avert the risk to the blood supply. Caution should be exercised in interpreting coverage of laboratory screening for transfusion-transmitted infections for individual countries when the coverage was calculated based on partial data, as the information is not necessarily representative of the whole country. In most situations, data are mostly reported by the major urban centres and the statistics calculated based on these data probably present a more favourable picture than the real situation in the entire country, as the unreported segment of the activity in these countries is likely to perform less well than the reported segment. Transfusion of unscreened or partially screened blood units could exist in larger scale than was reported to the WHO GDBS. Blood transfusion safety is still a concern, especially in low- and middle-income countries, where the prevalence of transfusion-transmissible infections among blood donors is high but quality and coverage of blood screening is inadequate.

## **9.3 CLINICAL USE OF BLOOD**

Appropriate clinical use of blood is an important aspect of blood safety. It reduces unnecessary exposure of patients to allogeneic blood with its attendant risks while ensuring judicious utilization of a scarce resource. Evidence-based transfusion guidelines and transfusion audits are useful tools in the education of those ordering blood components, potentially resulting in the reduction of inappropriate use of blood components. The randomized controlled trial literature suggest that in patients who do not have acute coronary artery disease, red cell transfusion should be withheld in the presence of haemoglobin concentrations as low as 7.0 to 8.0 grams per decilitre and in the absence of notable bleeding. In countries where there are concerns about the microbiological screening and safety of donated blood, the existing randomized trial data constitute a strong basis for avoiding liberal red cell transfusion in many clinical settings. The benefits of minimizing allogeneic

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red cell transfusion are likely to be greatest where there is doubt about the safety of the blood supply, and implementation of research findings into the practice of transfusion should be a greater priority.

The presence of structures such as hospital transfusion committees can provide leadership within a hospital for optimizing the use of blood. Fifty-four countries reported not having national guidelines, or the status was unknown. Although 126 countries reported the existence of national transfusion guidelines, that does not indicate whether they were effectively implemented. According to GDBS data provided to WHO, the percentage of transfusion-performing hospitals that had or participated in hospital transfusion committees and performed clinical audits was low in all WHO regions except Europe. More effort and investment is required for countries to develop and implement evidence-based policies and guidelines, educate and train health workers working for blood transfusion, and implement an effective system to monitor the clinical use of blood and products and transfusion practices.

Obtaining accurate data on the clinical use of blood and blood products is challenging due to the wide diversity of institutions and hospital settings that perform transfusion, and the highly variable policies and procedures for documentation and recording of transfusion. A measure of variation in clinical use is the proportion of blood that is transfused as whole blood rather than blood components. GDBS data reveal great variations in the use of whole blood for transfusion among different income groups of countries. As health systems develop and become able to offer a wider range of diagnostic and treatment options, component therapy becomes increasingly important for the clinical management of patients. In addition, macro-level transfusion indicators based on GDBS data that were reported to WHO show marked variations in blood components (red cells, plasma and platelets) across and within income groups. Reporting of higher transfusion rates per 1000 population for certain components in some countries – for example, the high amounts of fresh frozen plasma/plasma transfused per 1000 population in some countries in Eastern Europe – could suggest possible non-optimal use of blood components and products. More micro-level studies, such as reviewing the transfusion data or conducting clinical audits, should be conducted to assess the actual situation at national (and subnational) level, and, where needed, to inform the update of national guidelines and improve actual transfusion practices.

## **9.4 POLICY, LEGISLATION, REGULATORY OVERSIGHT AND GOVERNANCE MECHANISMS**

The provision of safe and adequate blood is a government responsibility and should be an integral part of each country's national overarching health care policy and health care infrastructure. WHO recommends that every country should put in place policies, systems and structures to ensure the safety, quality, accessibility and timely availability of blood and blood products to meet the needs of all patients who require transfusion. WHO also recommends that

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the policy be supported by appropriate legislation and regulatory framework to promote uniform implementation of standards and consistency in the quality and safety of blood and blood products.

A high percentage of developing countries, in particular in the WHO African and South-East Asia Regions, reported having national blood policies and strategic plans. This reflects the commitment of national governments in the two regions to improve blood safety and adequacy of supply. The European Region reported the highest number of countries with legislation to support their policies. Other regions reported having a lower percentage of countries with specific legislation, including South-East Asia and Africa, though several countries in those regions had reported the existence of policies and plans. Blood policies and plans need to be implemented for a blood service to realize tangible outcomes. Supportive systems, such as a functioning national committee or its equivalent, are needed to ensure the effective implementation of the national blood policy and strategic plan.

Similarly, a very high percentage of countries in the world have national standards for the collection, testing, processing, storage and distribution of blood and blood components – key elements for a quality system for blood transfusion services. However, except in Europe, a low percentage of countries reported having mechanisms for quality oversight and monitoring, or programmes to enforce the implementation of standards and sustain the functionality of the quality systems. There is an urgent need to establish sustainable quality systems and strengthen the capacity for regulation and quality oversight in many countries.

Governments should ensure that adequate, sustainable financing for the national blood programme is integrated within the financial structure of national health care systems, through mechanisms such as specific budget allocation, cost recovery and health insurance, or a combination of these. Inadequate financing of blood services impedes efforts to improve blood safety, particularly in developing countries. Investment in blood services in many low- and lower middle-income countries is often too low to achieve sufficient and safe blood supplies. In many countries belonging to these income groups, a substantial proportion of the funding for the operation of blood services comes from external donors. Such funding needs to be gradually replaced by domestic sources to ensure sustainability of the blood transfusion services in those countries.

## **9.5 DATA**

The existence of a data collection and reporting system is an important element of a well managed nationally coordinated blood transfusion programme. Adequate national data on blood availability and safety allow countries to set priorities and to further strengthen the national blood system. There is a need to establish systems of surveillance on the incidence and prevalence

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of HIV, HBV, HCV and other infections in blood donors and vigilance on the transfusion outcomes of recipients, including post-transfusion risk of infection. Information on clinical transfusion forms the basis for the monitoring of clinical transfusion practice and provides critical performance measures to influence desirable changes in prescribing and administration of blood and reduce variations in transfusion practice. Countries providing partial data should consider instituting standardized systems for data collection and management at national level. There is a need for national blood transfusion services to provide greater structure and support for the information management system and for hospitals to establish mechanisms for improving data collection, donor tracking, traceability and overall haemovigilance.

## **9.6 CONCLUSION**

In conclusion, the WHO survey continued to show significant variations in the availability, safety and use of blood and blood components between developed and developing countries. Blood transfusion safety is still a concern, especially in low- and middle-income countries, where the prevalence of transfusion-transmissible infections among blood donors is high but quality and coverage of blood screening is inadequate. Furthermore, low- and middle-income countries still lack enough voluntary unpaid blood donors, with low blood donation rates accompanied by high rates of discard. A blood system that gives patients access to safe blood and blood products in sufficient quantity is a key component of an effective health system. More effort is therefore still required to strengthen national blood systems so as to ensure sufficient and safe blood supplies worldwide, especially in low- and middle-income countries.

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## **10 Limitations**

While best attempts have been made to obtain accurate data from countries, the data submitted by national health authorities have not been independently verified. Data accuracy therefore depends on the data collection systems in countries and this report can only reflect the information provided by WHO Member States. While many countries report comprehensive national data on blood availability and safety, others provide limited information on the activities of a subset of blood centres in the country. Incomplete data and potentially different interpretations of some indicators affected our ability to analyse some of the information received from countries.

# **Annexes**

# **Annex 1      Explanatory note on country data and methodology**

## **Country data sources**

Data from the following countries were used as sources for this report.

### **WHO African Region (46/47)**

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, South Sudan, Swaziland, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe

Data for the Equatorial Guinea were not included.

### **WHO Region of the Americas (35/35)**

Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, United States of America, Uruguay, Venezuela (Bolivarian Republic of).

Data provided by the territories of Aruba, Bermuda, British Virgin Islands, Cayman Islands, Curaçao, French Territories, Montserrat, and Turks and Caicos Islands were not included in this report. The information can be found in the following WHO/PAHO reports: *Supply of blood for transfusion in Latin American and Caribbean Countries 2010 and 2011*; and *Supply of blood for transfusion in Latin American and Caribbean countries 2012 and 2013* (available at <http://iris.paho.org/xmlui/handle/123456789/28420>).

### **WHO Eastern Mediterranean Region (20/21)**

Afghanistan, Bahrain, Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Saudi Arabia, Somalia, Qatar, Sudan, Tunisia, United Arab Emirates, Yemen

Data for Syrian Arab Republic were not included.

### **WHO European Region (43/53)**

Albania, Armenia, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Luxembourg, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, United Kingdom of Great Britain and Northern Ireland

Data for Andorra, Austria, Azerbaijan, Bosnia and Herzegovina, Malta, Monaco, San Marino, Turkmenistan, Ukraine and Uzbekistan were not included.

### **WHO South-East Asia Region (11/11)**

Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Timor-Leste

### **WHO Western Pacific Region (25/27)**

Australia, Brunei Darussalam, Cambodia, China, Cook Islands, Fiji, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, Nauru, New Zealand, Niue, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Tuvalu, Vanuatu, Viet Nam

Data for Palau and Tonga were not included.

## **Population data and income group classifications**

Data reported for population were extracted from *World population prospects: the 2015 revision*. New York: Population Division, Department of Economic and Social Affairs, United Nations Secretariat; 2015.

Age-specific population data from the same source were used to calculate the age-specific donation rate per 1000 population for countries that provided donations by donors of different age groups.

Income group classification is based on *World Bank list of economies (July 2014)*. Washington (DC): World Bank; 2012.

The Cook Islands, Nauru and Niue have been classified into income groups using gross domestic product.

### **Partial data**

Sixty-two countries provided partial data with estimated percentages of the national number of donations covered by the report ranging from 10.3% to 99.6%. Of those 62 countries, 21 reported more than 90% of national collections. Eight countries reported data less than 50%. In generating the global overview, the percentages were used to calculate adjusted numbers. The percentages were also used to calculate the donations per 1000 population. Some countries reported coverage percentage but did not provide any sampling frame or basis. Decisions had to be made as to whether to apply the estimated percentage to obtain an adjusted total collections and donations rate.

In some cases, in order to provide aggregate data, it has been necessary to assume that this partial information is representative of the whole country. It is recognized that this may present a more favourable picture than in reality, particularly for low- and middle-income countries where, when partial data are provided, the data often relate to major cities; these tend to have better facilities, equipment and management, and have wider coverage, leaving other areas with a poorer situation unreported. Caution should be taken not to generalize these data.

### **Updated indicators**

Due to slight differences in the availability of country data and the adjustment of data submitted by a small number of countries as the result of validation, some indicators in this report may differ from WHO Fact Sheet 279: Blood safety and availability (updated July 2016) and the published regional reports.

### **Confirmatory testing**

It should be noted that a higher proportion of middle- and low-income countries only reported reactive results for testing of transfusion-transmissible infection. Countries that did not provide confirmatory test results may also have higher percentages of positive results among donations than those included. In addition, it should be noted that the strategies and protocols for conducting screening and confirmatory tests may differ between countries. In some countries, a sample was considered as positive when found twice repeatedly reactive. The samples were not confirmed with additional tests.

## Annex 2 Blood centres and data coverage 2011–2013

... Not reported/not available.

— No response.

\* Blank: 100%.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Afghanistan	2011	5	50	55	5	11	16	29 <sup>1</sup>
	2012	5	50	55	5	10	15	27.3
	2013	5	50	55	5	9	14	25
Albania	2011	1	32	33	1	32	33	
	2012	1	30	31	1	30	31	
	2013	1	31	32	1	31	31	
Algeria	2011	0	191	191	0	191	191	
	2012	0	195	195	0	195	195	
	2013	...	...	...	5	195	200	
Andorra	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Angola	2011	1	129	130	1	129	130	93.6
	2012	1	129	130	1	129	130	
	2013	1	138	139	1	138	139	
Antigua and Barbuda	2011	2	1	3	2	1	3	89.5
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Argentina	2011	31	304	335	31	252	283	90
	2012	...	...	282	...	...	282	
	2013	45	125	160	35	100	135	95
Armenia	2011	8	16	24	6	16	22	87
	2012	8	16	24	6	16	22	80
	2013	8	15	23	6	15	21	80
Australia	2011	71	19	90	71	19	90	
	2012	82	0	82	82	0	82	
	2013	82	0	82	82	0	82	
Austria	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Azerbaijan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Bahamas	2011	0	3	3	0	3	3	
	2012	0	3	3	0	3	3	
	2013	0	3	3	0	3	3	
Bahrain	2011	0	3	3	0	1	1	75
	2012	0	3	3	0	1	1	75
	2013	0	3	3	0	1	1	94
Bangladesh	2011	27	226	253	27	226	253	69
	2012	27	247	274	27	247	274	...
	2013	80	247	327	80	247	327	75
Barbados	2011	—	—	—	—	—	—	—
	2012	0	1	1	0	1	1	
	2013	—	—	—	—	—	—	—
Belarus	2011	20	36	56	20	36	56	
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Belgium	2011	4	2	6	4	2	6	
	2012	4	2	6	4	2	6	
	2013	4	2	6	4	2	6	

<sup>1</sup> In total there are 55 blood centres across the country, of which this report covers 16 blood centres, accounting for 29% of the blood collections in the country.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Belize	2011	1	7	8	1	7	8	
	2012	1	6	7	1	6	7	
	2013	1	6	7	1	6	7	
Benin	2011	6	34	40	6	34	40	
	2012	6	34	40	6	34	40	
	2013	6	34	40	6	34	40	
Bhutan	2011	0	27	27	0	24	24	90
	2012	0	27	27	0	12	12	74
	2013	0	27	27	0	27	27	
Bolivia	2011	13	5	18	13	5	18	
	2012	...	...	18	...	...	18	
	2013	...	...	17	...	...	17	93
Bosnia and Herzegovina	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Botswana	2011	2	0	2	2	0	2	
	2012	2	0	2	2	0	2	
	2013	2	4	6	2	4	6	
Brazil	2011	...	...	585	...	...	585	
	2012	...	...	544	...	...	544	
	2013	—	—	—	—	—	—	—
Brunei Darussalam	2011	0	5	5	0	4	4	80 <sup>2</sup>
	2012	0	5	5	0	4	4	80 <sup>3</sup>
	2013	0	5	5	0	4	4	80
Bulgaria	2011	6	23	29	6	23	29	
	2012	6	23	29	6	23	29	
	2013	—	—	—	—	—	—	—
Burkina Faso	2011	4	53	57	4	53	57	
	2012	4	48	52	4	15	19	67
	2013	4	39	43	4	38	42	99.6
Burundi	2011	5	3	8	5	3	8	
	2012	1	4	5	1	4	5	
	2013	1	6	7	1	6	7	
Cambodia	2011	1	25	26	1	22	23	81
	2012	1	21	22	1	21	22	83 <sup>4</sup>
	2013	1	21	22	1	21	22	80 <sup>5</sup>
Cameroon	2011	—	—	—	—	—	—	—
	2012	0	55	55	0	15	15	90
	2013	0	55	55	0	15	15	
Canada <sup>6</sup>	2011	2	0	2	2	0	2	
	2012	2	0	2	2	0	2	
	2013	2	0	2	2	0	2	
Cape Verde	2011	0	5	5	0	5	5	
	2012	0	6	6	0	6	6	
	2013	0	6	6	0	6	6	
Central African Republic	2011	—	—	—	—	—	—	—
	2012	...	...	...	...	...	...	...
	2013	1	1	2	1	0	1	45 <sup>7</sup>
Chad	2011	1	55	56	1	41	42	75
	2012	1	54	55	1	54	55	95
	2013	1	55	56	1	51	52	93
Chile	2011	3	16	19	3	16	19	80 <sup>8</sup>
	2012	3	16	19	3	16	19	...
	2013	3	16	19	3	16	19	80 <sup>9</sup>
China	2011	452	0	452	452	0	452	
	2012	411	0	411	411	0	411	
	2013	452	0	452	452	0	452	

<sup>2</sup> Reported data did not include the data of one hospital-based blood centre in JPML hospital (which is a private hospital).

<sup>3</sup> Reported data did not include the data of one hospital-based blood centre in JPML hospital (which is a private hospital).

<sup>4</sup> A non-profit hospital blood bank collected 10371 donations, and this number was not included in this report.

<sup>5</sup> A non-profit hospital blood bank collected 1070 donations, and this number was not included in this report.

<sup>6</sup> Based on the reports provided by Héma-Québec and Canadian Blood Services (CBS).

<sup>7</sup> Data cover Bangui (the capital).

<sup>8</sup> Data only cover the public sector.

<sup>9</sup> This report covers 80% of blood donations in Chile; the remaining 20% of collections were performed in private practices.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Colombia	2011	20	74	94	20	74	94	
	2012	...	...	85	...	...	85	
	2013	23	64	87	23	64	87	98.3
Comoros	2011	0	5	5	0	5	5	
	2012	0	5	5	0	5	5	
	2013	0	5	5		5	5	
Congo	2011	0	23	23	0	23	23	
	2012	4	24	28	4	24	28	
	2013	5	24	29	4	20	24	98
Cook Islands	2011	0	1	1	0	1	1	
	2012	0	1	1	0	1	1	
	2013	0	1	1	0	1	1	
Costa Rica	2011	...	...	34	...	...	34	
	2012	2	32	34	2	32	34	
	2013	2	31	33	2	31	33	
Côte D'Ivoire	2011	...	...	...	...	...	...	
	2012	21	0	21	21	0	21	
	2013	23	0	23	23	0	23	
Croatia	2011	13	20	33	13	20	33	
	2012	12	23	35	12	23	35	
	2013	1	8	9	1	8	9	
Cuba	2011	46	0	46	46	0	46	
	2012	46	0	46	46	0	46	
	2013	46	0	46	46	0	46	
Cyprus	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	1	4	5	1	4	5	
Czech Republic	2011	3	50	53	3	50	53	
	2012	14	67	81	14	67	81	
	2013	8	64	72	8	64	72	
Democratic People's Republic of Korea	2011	12	176	188	12	0	12	61.2
	2012	12	176	188	12	0	12	...
	2013	12	176	188	12	0	12	60
Democratic Republic of the Congo	2011	11	467	478	11	412	423	88.4
	2012	11	615	626	11	615	626	88.4
	2013	15	875	890	15	875	890	83.7
Denmark	2011	0	5	5	0	5	5	
	2012	0	5	5	0	5	5	
	2013	0	5	5	0	5	5	
Djibouti	2011	...	...	...	...	...	...	
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Dominica	2011	0	1	1	0	1	1	
	2012	0	1	1	0	1	1	
	2013	0	1	1	0	1	1	
Dominican Republic	2011	...	...	58	...	...	58	
	2012	...	...	65	...	...	65	
	2013	...	...	66	...	...	66	
Ecuador	2011	...	...	17	...	...	17	
	2012	...	...	...	...	...	...	...
	2013	7	14	21	7	14	21	
Egypt <sup>10</sup>	2011	24	70	93	24	0	24	33
	2012	24	70	94	23	0	23	33
	2013	24	70	94	24	0	24	33
El Salvador	2011	...	...	...	1	26	27	
	2012	1	41	42	1	41	42	
	2013	1	26	27	1	26	27	
Equatorial Guinea	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Eritrea	2011	1	0	1	1	0	1	84.1
	2012	1	0	1	1	0	1	94 <sup>11</sup>
	2013	1	0	1	1	0	1	89

<sup>10</sup> The Egyptian blood transfusion system is composed of many stakeholders who provide blood and blood components throughout Egypt. The data included in this report are those of the National Blood Transfusion Services only, with its 24 regional blood banks covering most of the Egyptian governorates.

<sup>11</sup> 625 blood units that were collected in hospital-based blood banks were not included, which accounted for 6%.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Estonia	2011	0	4	4	0	4	4	
	2012	0	4	4	0	4	4	
	2013	0	4	4	0	4	4	
Ethiopia	2011	25	1	26	12	0	12	...
	2012	...	...	...	...	...	...	...
	2013	25	0	25	25	0	25	
Fiji	2011	...	...	...	...	...	...	
	2012	...	...	...	0	3	3	95
	2013	—	—	—	—	—	—	—
Finland	2011	18	0	18	18	0	18	
	2012	17	0	17	17	0	17	
	2013	2	0	2	2	0	2	
France <sup>12</sup>	2011	18	0	18	18	0	18	
	2012	18	0	18	18	0	18	
	2013	18	0	18	18	0	18	
Gabon	2011	2	1	2	1	0	1	85
	2012	1	1	2	1	0	1	50
	2013	1	1	2	1	0	1	60
Gambia	2011	4	5	9	—	3	3	60
	2012	0	11	11	0	11	11	
	2013	0	12	12	0	12	12	65
Georgia	2011	6	10	16	5	3	8	82
	2012	6	8	14	3	3	6	75
	2013	10	7	17	3	3	6	69
Germany	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	19	51	70	19	51	70	
Ghana	2011	1	...	...	1	5	6	50
	2012	1	154	155	1	154	155	80 <sup>13</sup>
	2013	1	102	103	1	102	103	90 <sup>14</sup>
Greece	2011	1	87	88	1	87	88	88
	2012	1	87	88	1	87	88	88
	2013	1	87	88	1	87	88	85
Grenada	2011	—	—	—	—	—	—	—
	2012	...	...	...	...	...	...	
	2013	—	—	—	—	—	—	—
Guatemala	2011	8	50	58	8	46	54	95
	2012	...	...	...	...	...	...	95
	2013	13	48	61	13	48	61	95
Guinea	2011	1	36	37	1	34	35	94.6
	2012	1	36	37	1	25	26	99.8
	2013	1	37	38	1	32	33	98
Guinea-Bissau	2011	0	7	7	0	7	7	
	2012	—	—	—	—	—	—	—
	2013	0	7	7	0	7	7	
Guyana	2011	1	4	5	1	4	5	
	2012	...	...	...	...	...	...	
	2013	1	4	5	1	4	5	
Haiti	2011	...	...	30	...	...	30	...
	2012	...	...	...	...	...	...	...
	2013	...	...	...	16	0 <sup>15</sup>	16	97 <sup>16</sup>
Honduras	2011	4	17	21	2	17	19	...
	2012	5	15	20	5	14	19	...
	2013	9	16	25	3	16	19	...
Hungary	2011	—	—	—	—	—	—	—
	2012	1	0	1	1	0	1	
	2013	—	—	—	—	—	—	—
Iceland	2011	0	1	1	0	1	1	
	2012	0	1	1	0	1	1	
	2013	—	—	—	—	—	—	—

<sup>12</sup> The French Establishment for Blood is composed of 17 regional facilities. There is also an army blood centre (CTSA), the data of which are integrated to the extent possible into this report.

<sup>13</sup> Estimation was made based on responses provided by hospital-based blood centres.

<sup>14</sup> Estimation was made based on responses provided by the hospital-based blood centres. Some hospital-based blood centres are not covered in this report, contributing an estimated 10% of the data on blood services.

<sup>15</sup> 19 blood depots based in hospitals to deliver blood and blood components.

<sup>16</sup> Médecins Sans Frontières (MSF) Belgium collects about 1 000 blood units.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
India	2011	—	—	—	—	—	—	—
	2012	...	...	...	...	...	2 545	
	2013	...	...	...	...	...	2 545	
Indonesia	2011	424	367	791	213	86	299	
	2012	212	162	374	201	125	326	
	2013	207	168	375	190	131	321	
Iran (Islamic Republic of)	2011	91	0	91	91	0	91	
	2012	92	0	92	92	0	92	
	2013	91	0	91	91	0	91	
Iraq	2011	15	26	41	15	26	41	
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Ireland	2011	8	0	8	8	0	8	
	2012	2	0	2	2	0	2	
	2013	—	—	—	—	—	—	—
Israel	2011	—	—	—	—	—	—	—
	2012	1	7	8	1	0	1	97
	2013	1	7	8	1	0	1	97
Italy	2011	0	318	318	0	318	318	
	2012	—	—	—	—	—	—	—
	2013	0	312	312	0	312	312	
Jamaica	2011	1	9	10	1	9	10	
	2012	...	...	9	...	...	0	
	2013	1	9	10	1	9	10	
Japan	2011	64	0	64	64	0	64	
	2012	54	0	54	54	0	54	
	2013	54	0	54	54	0	54	
Jordan	2011	16	25	41	4	25	29	55 <sup>17</sup>
	2012	16	25	41	4	25	29	56 <sup>18</sup>
	2013	16	25	41	4	25	29	56 <sup>19</sup>
Kazakhstan	2011	20	4	24	17	0	17	
	2012	19	3	22	19	3	22	
	2013	18	0	18	18	0	18	
Kenya	2011	8	7	15	...	...	...	75
	2012	6	11	17	6	8	14	...
	2013	14	40	54	14	0	14	50 <sup>20</sup>
Kiribati	2011	0	3	3	0	3	0	80 <sup>21</sup>
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Kuwait	2011	1	0	1	0	0	0	
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Kyrgyzstan	2011	6	39	45	6	39	45	
	2012	6	39	45	6	39	45	
	2013	7	35	42	7	35	42	
Lao People's Democratic Republic	2011	6	11	17	6	11	17	
	2012	11	5	16	11	5	16	
	2013	12	4	16	12	4	16	
Latvia	2011	1	9	10	1	9	10	
	2012	1	9	10	1	9	10	
	2013	1	9	10	1	9	10	
Lebanon	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	12	40	52	12	40	52	
Lesotho	2011	3	0	3	3	0	3	
	2012	3	0	3	3	0	3	
	2013	4	0	4	4	0	4	
Liberia	2011	2	38	40	2	38	40	
	2012	—	—	—	—	—	—	—
	2013	2	38	40	2	28	30	75

<sup>17</sup> Total number of blood collections by the Ministry of Health (105 275) as a proportion of the total collections in the country (191 652).

<sup>18</sup> Total number of blood collections by the Ministry of Health (111 812) as a proportion of the total collections in the country (199 501).

<sup>19</sup> Total number of blood collections by the Ministry of Health (113 378) as a proportion of the total collections in the country (200 916).

<sup>20</sup> An estimated 300 000 units of blood were collected annually. KNBTS collected a total of 158000 units of blood, which is roughly 50% of the total requirement.

<sup>21</sup> The main hospital laboratory that provided data has more blood donations each year, since it caters for the majority of the population. The other two have fewer blood donations, accounting for approximately 5% and 15%.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Libya	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	5	85	90	—	—	—	—
Lithuania	2011	—	—	—	—	—	—	—
	2012	2	2	4	2	2	4	—
	2013	—	—	—	—	—	—	—
Luxembourg	2011	1	0	1	1	0	1	99 <sup>22</sup>
	2012	1	0	1	1	0	1	99 <sup>23</sup>
	2013	1	0	1	1	0	1	—
Madagascar	2011	2	45	47	0	43	43	96
	2012	2	45	47	0	43	43	96 <sup>24</sup>
	2013	2	45	47	0	43	43	96
Malawi	2011	3	...	...	3	0	4	55 <sup>25</sup>
	2012	4	75	79	4	39	40	75 <sup>26</sup>
	2013	4	0	4	4	0	4	71 <sup>27</sup>
Malaysia	2011	1	118	119	1	118	119	—
	2012	1	123	124	1	123	124	85
	2013	1	123	124	1	123	124	90 <sup>28</sup>
Maldives	2011	1	...	...	1	...	...	...
	2012	1	...	...	1	1	2	60
	2013	1	...	...	1	1	2	70 <sup>29</sup>
Mali	2011	1	8	9	1	6	7	96.5
	2012	—	—	—	—	—	—	—
	2013	1	8	9	1	5	6	—
Malta	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Marshall Islands	2011	0	2	2	0	1	1	40 <sup>30</sup>
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Mauritania	2011	1	13	14	1	0	1	90
	2012	1	13	14	1	0	1	85
	2013	1	12	13	1	0	1	80 <sup>31</sup>
Mauritius	2011	1	0	1	1	0	1	—
	2012	1	0	1	1	0	1	—
	2013	1	0	1	1	0	1	—
Mexico	2011	22	536	558	22	536	558	—
	2012	59	497	556	59	497	556	98
	2013	59	497	556	...	...	444	71
Micronesia (Federated States of)	2011	0	5	5	0	5	5	—
	2012	0	5	5	—	4	4	98 <sup>32</sup>
	2013	0	5	5	0	4	4	—
Monaco	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Mongolia	2011	1	25	26	1	25	26	—
	2012	1	25	26	1	25	26	—
	2013	1	26	27	1	26	27	—
Montenegro	2011	0	9	9	—	1	1	50 <sup>33</sup>
	2012	9	0	9	9	0	9	—
	2013	9	0	9	9	0	9	—

<sup>22</sup> About 200 apheresis donations in the Oncology-Haematology Department of the Centre Hospitalier du Luxembourg (directed donation).

<sup>23</sup> The Oncology-Haematology Department of the Centre Hospitalier du Luxembourg performs around 250 directed platelet apheresis donations per year.

<sup>24</sup> Two private and two non-functional public blood transfusion centre failed to submit their reports to the National Blood Transfusion Service (CNTS).

<sup>25</sup> There are no data readily available for blood taken by hospital blood banks. According to a 2007 Ministry of Health situation analysis, Malawi Blood Transfusion Service (MBTS) provided 55% of transfused units while hospital-based blood banks provided 45%.

<sup>26</sup> 50% from MBTS and 25% from hospital-based blood banks (only 36% of hospitals submitted complete data in 2012).

<sup>27</sup> The estimate was done by the Ministry of Health, Department of HIV.

<sup>28</sup> Excluding collection of blood donations in two public universities, private hospital blood banks and army blood banks. This report covers 100% of blood banks under the Ministry of Health.

<sup>29</sup> Approximately 9 500 blood collections from both centres and 3000 blood collections from other areas of the country.

<sup>30</sup> Percentage is estimated based on the population of the two Islands.

<sup>31</sup> Percentage is estimated based on supervision report.

<sup>32</sup> The private hospital blood bank, not covered by this report, typically collects 35 units per year, while the government hospital blood banks typically collect around 1 800 units per year (combined total).

<sup>33</sup> Estimate was based on the total number of units of blood donated in Montenegro and the number of units collected in the blood transfusion centre in the capital city.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Morocco	2011	6	10	16	6	10	16	
	2012	6	10	16	6	10	16	
	2013	2	26	28	2	26	28	
Mozambique	2011	0	153	153	0	153	153	
	2012	0	153	153	0	153	153	
	2013	0	153	153	0	153	153	
Myanmar	2011	1	316	317	1	151	152	79
	2012	1	333	334	1	144	145	82 <sup>34</sup>
	2013	1	333	334	1	144	145	82 <sup>35</sup>
Namibia	2011	1	0	1	1	0	1	
	2012	1	0	1	1	0	1	
	2013	1	0	1	1	0	1	
Nauru	2011	0	1	1	0	1	1	
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Nepal	2011	26	60	86	26	60	86	
	2012	57	29	86	57	29	86	
	2013	64	36	100	64	36	100	
Netherlands	2011	4	0	4	4	0	4	
	2012	4	0	4	4	0	4	
	2013	1	0	1	1	0	1	
New Zealand	2011	6	0	6	6	0	6	
	2012	6	0	6	6	0	6	
	2013	6	0	6	6	0	6	
Nicaragua	2011	...	...	3	...	...	3	
	2012	...	...	...	...	...	...	
	2013	...	...	3	...	...	3	
Niger	2011	4	1	5	4	1	5	
	2012	5	0	5	5	0	5	
	2013	5	0	5	5	0	5	
Nigeria	2011	0	23	23	0	23	23	...
	2012	...	...	...	17	0	17	3
	2013	...	...	...	18	25	43	5
Niue	2011	0	1	1	0	1	0	
	2012	0	1	1	0	1	1	
	2013	0	31	31	0	1	1	
Norway	2011	0	44	44	0	44	44	
	2012	0	33	33	0	33	33	
	2013	—	—	—	—	—	—	—
Oman	2011	—	—	—	—	—	—	
	2012	1	16	17	1	13	14	
	2013	1	17	18	1	13	14	87
Pakistan	2011	...	...	1 800	3	321	324	35 <sup>36</sup>
	2012	...	...	1 830	44	253	297	42.7 <sup>37</sup>
	2013	...	...	...	47	272	319	65.7 <sup>38</sup>
Palau	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Panama	2011	0	26	26	0	26	26	
	2012	...	27	27	...	27	29	
	2013	0	27	27	0	25	25	97 <sup>39</sup>
Papua New Guinea	2011	3	32	35	3	18	21	60 <sup>40</sup>
	2012	0	33	33	0	21	21	56 <sup>41</sup>
	2013	0	36	36	0	21	21	53 <sup>42</sup>
Paraguay	2011	0	57	57	0	57	57	
	2012	0	57	57	0	45	45	80
	2013 <sup>43</sup>	2	5	7	2	5	7	

<sup>34</sup> The services that are not covered by the report are small, using about 20 units per month.

<sup>35</sup> The services that are not covered by the report are small, using about 20 units per month.

<sup>36</sup> The annual collection is estimated at 3 million.

<sup>37</sup> The total donations reported in 2012 were 1282278. However, the annual collection is estimated to be 3 million.

<sup>38</sup> The estimated national collections are 3.5 million; the reported collections are 2.3 million.

<sup>39</sup> Hospital San Miguel Acángel and Centro Médico Paitilla not included.

<sup>40</sup> 21 out of 35 centres that submitted their statistics. Two centres gave data for 8 months and 9 months.

<sup>41</sup> 21 out of 33 blood centres sent in their data; 224 out of 396 months of data were received.

<sup>42</sup> The coverage percentage is calculated based on the actual months of the total 12 months that each centre reported data to the national centre.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Peru	2011	...	...	323	...	...	323	
	2012	1	271	272	1	271	272	
	2013	1	288	289	1	288	289	
Philippines	2011	...	...	...	...	...	...	70
	2012	43	233	276	40	127	167	62
	2013	10	...	> 200	10	91	101	45 <sup>44</sup>
Poland	2011	23	0	23	22	0	22	98 <sup>45</sup>
	2012	23	0	23	22	0	22	96 <sup>46</sup>
	2013	23	0	23	23	0	23	
Portugal	2011	4	26	30	4	26	30	
	2012	3	25	28	3	25	28	
	2013	3	30	33	3	30	33	
Qatar	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	1	0	1	1	0	1	
Republic of Korea	2011	15	103	118	15	103	118	
	2012	20	90	110	20	90	110	
	2013	18	98	116	18	98	116	
Republic of Moldova	2011	2	17	19	2	17	19	
	2012	3	16	19	3	16	19	
	2013	3	16	19	3	16	19	
Romania	2011	42	0	42	41	0	41	
	2012	42	0	42	41	0	41	99 <sup>47</sup>
	2013	42	0	42	41	0	41	99.1 <sup>48</sup>
Russian Federation	2011	136	416	552	136	416	552	99
	2012	130	386	516	130	386	516	99
	2013	121	337	458	121	337	458	99
Rwanda	2011	5	0	0	5	0	0	
	2012	5	0	5	5	0	5	
	2013	5	0	5	5	0	5	
Saint Kitts and Nevis	2011	0	1	1	0	1	1	97
	2012	—	—	—	—	—	—	—
	2013	0	1	1	0	1	1	
Saint Lucia	2011	0	1	1	0	1	1	
	2012	...	...	...	...	...	...	
	2013	...	...	...	...	...	...	
Saint Vincent and the Grenadines	2011	0	1	1	0	1	1	
	2012	0	1	1	0	1	1	
	2013	0	1	1	0	1	1	
Samoa	2011	0	2	2	0	1	1	95 <sup>49</sup>
	2012	0	2	2	0	1	1	95 <sup>50</sup>
	2013	0	2	2	0	1	1	95 <sup>51</sup>
San Marino	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Sao Tome and Principe	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	0	1	1	0	1	1	
Saudi Arabia	2011	7	246	253	7	246	253	
	2012	—	—	—	—	—	—	—
	2013	11	291	302	11	291	302	
Senegal	2011	2	15	17	2	15	17	
	2012	2	16	18	2	16	18	
	2013	2	19	21	2	19	21	

<sup>43</sup> The number of centres reported for 2013 is much smaller than that reported in other years.

<sup>44</sup> There are more than 200 blood services facilities, but only 101 facilities submitted reports.

<sup>45</sup> About 20000 donations were collected by the establishment under the Ministry of Interior.

<sup>46</sup> One of 23 blood centres did not report data on blood donations in 2012. The data covered 96% of blood donations in the country.

<sup>47</sup> The remaining centre has an annual collection representing less than 1% of the total.

<sup>48</sup> Data from the Army Blood Transfusion Centre are not available; estimated annual collection is around 4000 units, representing about 0.9% of the overall national collection.

<sup>49</sup> The hospital in Savaii also collects blood units but a very small number. Often patients are referred to the main hospital (covered by this report).

<sup>50</sup> The majority of the transfusions and patients are in the main hospital in Apia, on which this report is based.

<sup>51</sup> The second blood centre is at the Hospital in Savaii. Most transfusions are done at the main hospital in Apia, on which this report is based. The hospital in Savaii collects approximately 37 units per month.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Serbia	2011	3	44	47	3	44	47	
	2012	3	44	47	3	44	47	
	2013	3	43	46	3	43	46	96.2 <sup>52</sup>
Seychelles	2011	—	—	—	—	—	—	—
	2012	0	1	1	0	1	1	
	2013	0	1	1	0	1	1	
Sierra Leone	2011	0	29	29	0	29	29	
	2012	—	—	—	—	—	—	—
	2013	0	30	30	0	30	30	
Singapore	2011	1	1	2	1	0	1	97.3 <sup>53</sup>
	2012	1	1	2	1	0	1	97.2 <sup>54</sup>
	2013	1	1	2	1	0	1	97.7 <sup>55</sup>
Slovakia	2011	11	33	44	11	33	44	...
	2012	12	33	45	12	33	45	99.9
	2013	12	33	45	12	33	45	
Slovenia	2011	3	0	3	3	0	3	
	2012	3	0	3	3	0	3	
	2013	3	0	3	3	0	3	
Solomon Islands	2011	0	1	1	0	1	1	
	2012	0	1	1	0	1	1	
	2013	—	—	—	—	—	—	—
Somalia	2011	0	38	38	0	30	30	80 <sup>56</sup>
	2012	0	35	35	0	35	35	
	2013	0	31	31	0	31	31	90 <sup>57</sup>
South Africa <sup>58</sup>	2011	11	0	11	11	0	11	
	2012	11	0	11	11	0	11	
	2013	11	0	11	11	0	11	
South Sudan	2011	0	25	25	0	22	22	96
	2012	0	7	7	0	1	1	45 <sup>59</sup>
	2013	0	...	...	0	2	2	75 <sup>60</sup>
Spain	2011	20	0	20	20	0	20	
	2012	20	0	20	20	0	20	
	2013	20	0	20	20	0	20	
Sri Lanka	2011	2	62	64	2	62	64	
	2012	2	88	90	2	88	90	
	2013	2	88	90	2	88	90	
Sudan	2011	1	15	16	1	15	16	90 <sup>61</sup>
	2012	17	352	369 <sup>62</sup>	17	352	369	
	2013	20	....	20	20	0	20	...
Suriname	2011	1	0	1	1	0	1	
	2012	1	0	1	1	0	1	
	2013	1	0	1	1	0	1	
Swaziland	2011	1	0	1	1	0	1	
	2012	1	0	1	1	0	1	
	2013	—	—	—	—	—	—	—
Sweden	2011	0	30	30	0	30	30	
	2012	0	30	30	0	30	30	
	2013	0	29	29	0	29	29	

<sup>52</sup> According to data reported from all blood establishments, excluding military blood establishments. Reporting is mandatory.

<sup>53</sup> Estimation is based on the total blood donations collected in stand-alone blood centres against collections for both stand-alone and hospital-based blood centres.

<sup>54</sup> Estimation is based on the total blood donations collected in stand-alone blood centres against collections for both stand-alone and hospital-based blood centres. 97.2% of blood donations in Singapore are collected by the Blood Services Group.

<sup>55</sup> Estimation is based on the total blood donations collected in stand-alone blood centres against collections for both stand-alone and hospital-based blood centres. 97.7% of blood donations in Singapore are collected by the Blood Services Group.

<sup>56</sup> The eight hospitals out of a total of 38 that did not report are all from the private sector.

<sup>57</sup> This is a rough estimate based on the fact that there are a number of privately owned hospitals that conduct blood collections and donations. Also, parts of the country are inaccessible due to insecurity, and for this reason no data are received from transfusion centres in those locations.

<sup>58</sup> Blood services in South Africa are delivered by two independent blood services – SANBS (South African National Blood Service) and WPBTS (Western Province Blood Transfusion Service). This report is a national summary covering activities of both services.

<sup>59</sup> Estimated total national blood donations are about 5000 units, and 2331 collections constitute about 46% of that estimated total.

<sup>60</sup> The two hospitals with available data for 2013 are Juba Teaching Hospital and Al Sabah Children's Hospital. These could constitute about 75% of the estimated national total.

<sup>61</sup> The donations collected in the military and police force hospitals are not reported to the directorate, and their collection does not exceed 10% of the national collection.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
Switzerland	2011	13	0	13	13	0	13	
	2012	13	0	13	13	0	13	
	2013	13	0	13	13	0	13	
Syrian Arab Republic	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Tajikistan	2011	4	2	6	4	2	6	
	2012	4	0	4	4	0	4	98
	2013	5	0	5	5	0	5	
Thailand	2011	14	157	171	1	0	1	30 <sup>63</sup>
	2012	10	157	167	1	0	1	29 <sup>64</sup>
	2013	13	157	170	1	0	1	
The former Yugoslav Republic of Macedonia	2011	22	0	22	22	0	22	
	2012	1	20	21	1	20	21	
	2013	1	15	16	1	15	16	
Timor-Leste	2011	—	—	—	—	—	—	—
	2012	1	5	6	1	5	6	
	2013	0	6	6	0	6	6	
Togo	2011	2	1	3	2	1	3	
	2012	2	1	3	2	1	3	
	2013	2	0	2	2	0	2	
Tonga	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Trinidad and Tobago	2011	1	5	6	1	5	6	
	2012	1	5	6	1	5	6	
	2013	1	5	6	1	5	6	
Tunisia	2011	6	22	28	6	22	28	
	2012	7	25	32	7	25	32	
	2013	7	25	32	7	25	32	
Turkey	2011	15	66	81	15	0	15	60 <sup>65</sup>
	2012	15	56	71	15	56	71	
	2013	...	...	...	...	...	...	
Turkmenistan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Tuvalu	2011	0	1	1	0	1	1	
	2012	0	1	1	0	1	1	
	2013	0	1	1	0	1	1	
Uganda	2011	7	7	14	7	7	14	
	2012	7	0	7	7	0	7	...
	2013	7	7	14	7	7	14	
Ukraine	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
United Arab Emirates	2011	4	13	17	4	13	17	
	2012	4	10	14	4	10	14	
	2013	4	10	14	4	10	14	97 <sup>66</sup>
United Kingdom of Great Britain and Northern Ireland	2011	4	0	4	4	0	4	
	2012	4	0	4	4	0	4	
	2013	4	0	4	4	0	4	
United Republic of Tanzania	2011	7	0	7	7	0	7	...
	2012	7	0	7	7	0	7	...
	2013	7	0	7	7	0	7	59 <sup>67</sup>

<sup>62</sup> The number of centres reported for 2012 is much bigger than the number reported in other years.

<sup>63</sup> Total blood donation in the whole country is 1937564 units. Blood donation for the National Blood Centre, Bangkok, is 591192 units.

<sup>64</sup> The percentage is calculated based on blood collection information for the National Blood Centre as a proportion of the blood collection for the whole country.

<sup>65</sup> This estimation is made according to the annual report (2011) of Turkey. The total number of collected blood and blood components in 2011 from all blood centres (including hospital-based) in Turkey is 2182394. Annual data collected from hospital-based transfusion centres are not included in this report.

<sup>66</sup> Military hospitals: 3% of national collection.

<sup>67</sup> The estimation is based on a blood needs assessment study, 2014, conducted by NBTS in collaboration with CDC and other partners.

<sup>68</sup> All stand-alone blood centres were sampled and a response rate of 94.1% (128/136) was obtained. This sample was then weighted based on the size and output of the blood centres and used to estimate total blood donations for the country. Approximately 98% of hospital-based blood centres responded and these responses were not weighted. Hospital-based blood centres account for less than 4% overall of the collected blood supply.

<sup>69</sup> Market share of the blood services (American Red Cross, Blood System Inc. and New York Blood Center) the report covers.

<sup>70</sup> Market Share of the blood services (American Red Cross, Blood System Inc. and New York Blood Center) the report covers.

Country	Data year	Number of blood centres in the country			Number of blood centres covered by this report			Estimated % of blood donations covered by this report*
		Stand-alone	Hospital-based	Total	Stand-alone	Hospital-based	Total	
United States of America	2011	136	115	251	136	113	249	99 <sup>68</sup>
	2012	136	115	251	48	0	48	60 <sup>69</sup>
	2013	93	153	246	48	0	48	60 <sup>70</sup>
Uruguay	2011	...	...	75	...	...	75	
	2012	3	71	74	3	71	74	94 <sup>71</sup>
	2013	...	...	61	...	...	61	...
Uzbekistan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Vanuatu	2011	0	2	2	0	2	2	
	2012	—	—	—	—	—	—	—
	2013	...	...	...	...	...	...	
Venezuela (Bolivarian Republic of)	2011	185	139	324	185	139	324	
	2012	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—
Viet Nam	2011	3	64	67	3	64	67	99 <sup>72</sup>
	2012	3	64	67	3	64	67	95 <sup>73</sup>
	2013	0	72	72	0	72	72	
Yemen	2011	—	—	—	—	—	—	—
	2012	2	5	7	2	5	7	30 <sup>74</sup>
	2013	—	—	—	—	—	—	—
Zambia	2011	9	0	9	0	0	9	
	2012	9	0	9	9	0	9	
	2013	9	0	9	9	0	9	
Zimbabwe	2011	5	0	5	5	0	5	
	2012	5	0	5	5	0	5	
	2013	5	0	5	5	0	5	

<sup>71</sup> Each service sends a monthly report – of the 888 reports that should be received, only 52 were missed.

<sup>72</sup> In remote areas where there is no blood centre, some hospitals collect blood from relatives of donors, but only when there is not enough blood in an emergency case. Those blood donations are not included in the report.

<sup>73</sup> Based on reports from other blood centres in the whole country.

<sup>74</sup> The estimation is based on a previous study made during the period November 2010 to December 2010.

## Annex 3      Blood donations 2011–2013

... Not reported/not available.

Blank: Not required/not applicable.

— No response.

VNRD: Voluntary non-remunerated donations.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/replacement donations	Paid donations	Others
Afghanistan	2011	22 786	...	...	29 281	0	52 067
	2012	26 368	...	...	45 035	0	71 397
	2013	29 101	...	...	42 727	0	71 828
Albania	2011	6 028	5 496	532	15 816	4 018	25 862
	2012	6 830	6 548	282	17 372	3 297	27 499
	2013	7 655	7 272	383	18 774	2 787	29 216
Algeria	2011	127 029	...	...	325 479	0	452 508
	2012	134 138	...	...	332 053	0	466 191
	2013	153 489	...	...	337 144	0	490 633
Andorra	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Angola	2011	7 349	...	...	70 926	0	78 275
	2012	9 865	...	...	88 220	0	98 085
	2013	22 763	...	...	131 537	0	154 300
Antigua and Barbuda	2011	22	...	...	1 173	0	1 195
	2012	...	—	—	—	—	—
	2013	—	—	—	—	—	—
Argentina	2011	365 748	146 299	219 449	708 886	0	1 074 634
	2012	384 650	...	...	672 060	0	1 056 710
	2013	362 750	108 825	253 925	591 854	0	954 604
Armenia	2011	417	325	92	5 074	7 366	12 857
	2012	312	210	102	4 876	7 666	12 854
	2013	417	390	27	4 175	8 149	12 741
Australia	2011	983 780	201 356	782 424	0	0	983 780
	2012	858 539	167 017	691 522	0	0	858 546
	2013	782 923	85 688	697 235	3 <sup>1</sup>	0	782 926
Austria	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Azerbaijan	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Bahamas	2011	3 201	...	...	3 672	0	7 287
	2012	2 892	...	...	4 744	0	7 638
	2013	3 018	...	...	4 180		7 198
Bahrain	2011	15 135	...	...	1 673	0	16 808
	2012	17 050	3 500	13 550	2 434	0	19 484
	2013	18 628	2 800	15 828	94	0	18 722
Bangladesh	2011	95 412	...	...	319 960	0	415 372
	2012	168 115	...	...	373 567	0	541 682
	2013	175 984	...	...	417 790	0	593 774
Barbados	2011	—	—	—	—	—	—
	2012	641	...	...	4 268	0	4 925
	2013	—	—	—	—	—	—
Belarus	2011	164 582	23 299	141 283	21 409		185 991
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Belgium	2011	542 155	45 226	496 929	0	0	542 155
	2012	538 336	44 692	493 644	0	0	538 336
	2013	496 288	50 090	446 198	0	0	496 288

<sup>1</sup> There were three donations where family members donated exclusively for related patients (directed donations).

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
Belize	2011	636	...	...	3 981	0	4 617
	2012	634	...	...	4 161	0	4795
	2013	709	...	...	4 411	0	5 120
Benin	2011	58 787	...	...	6 193	0	64 980
	2012	69 914	...	...	5 399	0	75 313
	2013	74 016	...	...	3 494	0	77 510
Bhutan	2011	4 628	3 846	782	3 547	0	8 175
	2012	4 834	3 764	1 070	1 781	0	6 615
	2013	5 589	3 354	2 235	3 260	0	5 <sup>2</sup> 854
Bolivia	2011	28 042	...	...	51 895	0	79 886
	2012	30 576	...	...	52 756	0	83 332
	2013	46 171	...	...	57 699	0	102 070
Bosnia and Herzegovina	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Botswana	2011	16 562	...	...	0	0	16 562
	2012	19 279	...	...	0	0	19 279
	2013	20 207	...	...	0	0	20 207
Brazil	2011	2 000 892	...	...	1 352 714	0	3 353 606
	2012	1 983 857	...	...	1 349 122	0	3 332 979
	2013	—	—	—	—	—	—
Brunei Darussalam	2011	12 696	2 947	7 207	465		12 696
	2012	13 269	3 124	10 145	0	0	13 269
	2013	13 906	3 134	10 772	0	0	13 906
Bulgaria	2011	30 422	10 113	20 309	130 200	3 336	163 958
	2012	39 938	9 105	30 833	123 523	2 863	166 324
	2013	—	—	—	—	—	—
Burkina Faso	2011	63 126	36 120	27 006	19 630	0	82 756
	2012	54 998	38 241	16 757	18 739	0	73 737
	2013	68 032	60 324	7 708	32 684	0	100 716
Burundi	2011	40 700	13 127	27 573	9	0	40 709
	2012	43 089	14 790	28 303	4	0	43 093
	2013	55 650	18 985	36 665	16	0	55 666
Cambodia	2011	16 009	15 529	480	30 681	0	46 690
	2012	13 790	13 274	516	34 508	0	48 298
	2013	17 595	15 526	2 069	32 758	0	50 353
Cameroon	2011	—	—	—	—	—	—
	2012	1 478	0	0	41 701	0	43 179
	2013	3 785	0	0	10 596	0	14 772
Canada	2011	1 161 402	121 511	1 039 891	0	0	1 161 402
	2012	1 161 875	120 115	1 041 760	0	0	1 161 875
	2013	1 124 422	107 177	1 007 245	0	0	1 124 422
Cape Verde	2011	2 408	1 375	1 033	573		2 981
	2012	2 843	...	...	470	0	3 313
	2013	2 762	...	...	481	0	3 243
Central African Republic	2011	—	—	—	—	—	—
	2012	15 000	...	...	...	0	15 000
	2013	11 300	6 780	4 250	123	0	11 423
Chad	2011	1 421	...	...	28 702	0	30 123
	2012	3 511	3 511		40 809	0	44 320
	2013	4 310			64 955	0	69 265
Chile	2011	48 763	34 945	13 818	181 545	0	230 308
	2012	55 082			178 083	0	233 165
	2013	54 068	35 472	18 596	175 843	0	229 911
China	2011	11 721 683	...	...	0	0	11 721 683
	2012	11 394 398	...	...	495 320	0	11 889 718
	2013	11 575 406	...	...	442 112	0	12 017 518
Colombia	2011	586 361	453 408	132 953	124 038	0	710 399
	2012	629 286			116 501	0	745 787
	2013	641 920	500 971	140 949	98 036	0	739 956
Comoros	2011	100	10	90	2 500	0	2 600
	2012	60	5	55	2 350	0	2 410
	2013	290	40	250	2 240	0	2 530

<sup>2</sup> Directed donations.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
Congo	2011	15 941	...	...	37 670	0	53 611
	2012	18 777	...	...	28 719	0	47 496
	2013	19 452	10 088	9 364	31 020	0	50 472
Cook Islands	2011	245	82	101	0	0	245
	2012	224	103	121	0	0	224
	2013	209	30	179	0	0	209
Costa Rica	2011	43 690	...	...	27 353	0	71 043
	2012	46 136	...	...	24 043	0	70 182
	2013	46 465	...	...	21 744	0	68 209
Côte d'Ivoire	2011	97 664	60 384	37 280	0	0	97 664
	2012	78 170	47 168	31 002	0	0	78 170
	2013	133 023	49 245	83 778	0	0	133 023
Croatia	2011	180 226	8 725	171 541	0	0	180 226
	2012	182 068	12 216	169 852	0	0	182 068
	2013	180 411	12 106	168 305	0	0	180 411
Cuba	2011	393 325	...	...	0	0	393 325
	2012	401 575	...	...	0	0	401 575
	2013	411 545	232 808	190 479	0	0	411 545
Cyprus	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	57 323	10 959	46 364	0	0	57 320
Czech Republic	2011	400 400 <sup>3</sup>	31 900	190 300	0	0	432 300
	2012	418 900	28 100	—	0	0	418 900
	2013	402 100	27 300	374 800	0	0	402 100
Democratic People's Republic of Korea	2011	97 228	...	...	0	0	97 228
	2012	94 156	8 662	85 494	3 294	0	98 080
	2013	99 200	...	...	0	0	9 920
Democratic Republic of the Congo	2011	124 537	...	...	260 886	14 858	400 282
	2012	119 250	83 475	35 775	239 039	16 592	374 881
	2013	155 401	119 659	35 742	252 620	27 254	435 275
Denmark	2011	308 000	0	308 000	0	0	308 000
	2012	298 083	0	298 083	0	0	298 083
	2013 <sup>4</sup>	283 000	...	...	0	0	283 000
Djibouti	2011	...	...	...	...	...	...
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Dominica	2011	93	...	...	948	0	1 041
	2012	100	...	...	846	0	946
	2013	93	...	...	978	0	1 071
Dominican Republic	2011	18 072	...	...	79 518	—	99 081
	2012	19 874	...	...	83 529	2 854	106 257
	2013	17 687	...	...	89 893	3 154	110 734
Ecuador	2011	98 866	...	...	99 070	0	211 782 <sup>5</sup>
	2012	4 396	...	...	79 199	0	83 595
	2013	130 603	...	...	98 327	0	228 930
Egypt	2011	247 086	222 377	24 709	108 025	0	355 111
	2012	274 195	270 949	3 246	148 863	0	423 058
	2013	272 829	270 261	2 568	150 194	0	423 023
El Salvador	2011	10 677	...	...	80 076	0	90 753
	2012	10 875	...	...	83 617	0	94 492
	2013	14 022	9 867	4 155	84 057	0	98 079
Equatorial Guinea	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Eritrea	2011	4 235	235	4 000	1 423	0	10 697
	2012	8 779	4 810	3 969	1 027	0	9 806
	2013	8 038	4 239	3 799	654	0	8 692
Estonia	2011	57 027	8 058	48 969	0	0	57 027
	2012	58 120	7 510	50 610	0	0	58 120
	2013	60 929	7 467	53 462	0	0	60 929

<sup>3</sup> The total number of donations is not equal to the sum of the number of donations from first-time donors + donations of repeat donors as 40% of first-time donors became regular donors within the same year.

<sup>4</sup> No collection from first-time donors (only test) in four of five regions. In the fifth region, blood collection two months after first contact from donor (to exclude window period).

<sup>5</sup> 13 846 of the units collected were not classified by blood donor type.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
Ethiopia	2011	10 333	...	...	39 199	0	49 532
	2012	15 314	...	...	39 379	0	54 693
	2013	53 686	38 686	15 000	25 588	0	79 274
Fiji	2011	7 808	...	...	3 224	0	11 032
	2012	8 176	...	...	4 117	0	12 293
	2013	—	—	—	—	—	—
Finland	2011	263 408	19 775	243 633	0	0	263 408
	2012	247 075	15 161	231 914	0	0	247 075
	2013	208 619	14 212	222 831	0	0	222 831
France	2011	2 586 382	462 515	2 123 867	0	0	2 586 382
	2012	2 613 089	440 869	2 172 220	0	0	2 613 089
	2013	2 608 622	...	...	0	0	2 608 622
Gabon	2011	...	...	...	0	...	...
	2012	7 921	...	...	9 974	0	17 895
	2013	18 598	10 404	8 194	12 703	0	5 895
Gambia	2011	2 424	...	...	5 695	0	8 119
	2012	2 162	...	...	7 895	0	10 057
	2013	...	...	...	...	...	...
Georgia	2011	1 969	1 772	197	8 527	22 758	33 254
	2012	5 341	3 743	1 598	4 313	22 070	31 724
	2013	9 930	3 752	6 178	4 727	21 368	36 025
Germany	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	4 621 862	...	...	0	0	4 621 862
Ghana	2011	27 031	...	...	36 538	0	63 569
	2012	41 021	24 945	16 076	110 122	0	151 143
	2013	52 897	32 267	20 530	107 398	0	160 295
Greece	2011	286 406	34 427	251 979	298 097	0	298 601
	2012	265 038	25 546	124 726	270 489	0	542 240
	2013	273 484	35 103	274 381	273 484	0	546 968
Grenada	2011	—	—	—	—	—	—
	2012	530	...	...	835	0	1 365
	2013	—	—	—	—	—	—
Guatemala	2011	4 771	...	...	101 668	0	105 767
	2012	4 902	...	...	108 116	0	113 018
	2013	5 862	...	...	116 045	0	121 907
Guinea	2011	2 690	1 594	1 094	24 315	15	27 020
	2012	3 069	2 010	1 059	33 543	0	36 612
	2013	4 634	3 892	1 227	37 084	0	41 718
Guinea-Bissau	2011	271	156	115	2 966	0	2 970
	2012	—	—	—	—	—	—
	2013	1 354	...	...	3 303	46	4 703
Guyana	2011	5 847	1 653	4 194	514	0	6 361
	2012	7 712	...	...	0	0	7 712
	2013	10 679	3 675	7 004	469	0	11 148
Haiti	2011	13 914	...	...	5 837	0	19 751
	2012	18 374	...	...	7 234	0	25 608
	2013	16 255	...	...	11 223	0	27 478
Honduras	2011	11 548	5 049	4 542 <sup>6</sup>	54 529	370	66 447
	2012	10 418	6 090	4 327	55 938	153	66 509
	2013	10 363	5 906	4 457	58 113	600	69 076
Hungary	2011	—	—	—	—	—	—
	2012	428 540	44 785	383 755	0	0	428 540
	2013	—	—	—	—	—	—
Iceland	2011	12 828	—	12 828	0	0	12 828
	2012	12 363	0	12 363	0	0	12 363
	2013	—	—	—	—	—	—
India	2011	...	...	...	...	...	...
	2012	7 379 897	...	...	2 423 056	0	9 807 953
	2013	8 456 660	...	...	1 492 352	0	9 949 012
Indonesia	2011	1 954 600	...	...	345 574	10 547	2 310 721
	2012	2 121 744	...	...	416 447	25 089	2 538 314
	2013	2 306 707	...	...	403 470	12 581	2 722 758

<sup>6</sup> Data on first-time and repeated voluntary non-remunerated donations come from the Red Cross.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
Iran (Islamic Republic of)	2011	1 986 992	536 205	1 450 787	0	0	1 986 992
	2012	2 042 315	500 222	1 542 093	0	0	2 042 315
	2013	2 001 791	450 100	1 551 691	0	0	2 001 791
Iraq	2011	186 978	16 138	25 640	313 843	0	501 348
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Ireland	2011	142 633	11 339	131 294	0	0	142 633
	2012	153 304	10 758	142 546	0	0	153 304
	2013	—	—	—	—	—	—
Israel	2011	—	—	—	—	—	—
	2012	298 470	56 239	242 231	0	0	298 470
	2013	277 645	52 487	225 158	0	0	277 645
Italy	2011	2 744 603	...	...	0	0	2 744 603
	2012	—	—	—	—	—	—
	2013	2 633 175	374 576	2 258 599	0	0	2 633 175
Jamaica	2011	4 380	...	...	22 882	0	2187 <sup>7</sup> 29 449
	2012	7 347	...	...	23 525	0	30 872
	2013	5 043	...	...	25 558	0	30 601
Japan	2011	3 731 003	508 395	3 222 608	0	0	3 731 003
	2012	3 738 222	470 511	3 267 711	0	0	3 738 222
	2013	3 684 024	458 149	3 225 829	0	0	3 684 024
Jordan	2011	53 479	38 504	14 975	54 522	0	105 275
	2012	54 229	15 570	38 659	57 583	0	111 812
	2013	56 616	38 100	20 516	54 762	0	113 378
Kazakhstan	2011	212 476	...	...	...	...	276 475
	2012	220 937	111 943	108 994	—	7 932	228 869
	2013	138 325	69 162	63 163	—	—	231 509
Kenya	2011	108 665	81 825	26 840	0	0	108 665
	2012	155 606	121 915	33 691	0	0	155 606
	2013	158 742	139 322	19 420	0	0	158 742
Kiribati	2011	17	...	...	1 058	0	1 075
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Kuwait	2011	40 480	1 611	38 869	17 353	0	57 835
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Kyrgyzstan	2011	...	...	...	...	...	34 878
	2012	...	...	...	...	...	36 604
	2013	...	...	...	...	...	37 463
Lao People's Democratic Republic	2011	25 087	13 797	11 290	1 996	0	27 083
	2012	27 458	13 638	13 820	1 667	0	29 037
	2013	30 303	...	...	4 074	0	34 377
Latvia	2011	55 933	12 005	43 928	6 547	0	55 933
	2012	53 180	9 315	43 865	0	0	53 180
	2013	52 015	9 148	50 354	0	0	52 015
Lebanon	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	5 400	...	...	125 000	0	130 400
Lesotho	2011	5 559	4 181	1 378	137	0	5 696
	2012	7 499	5 985	1 514	94	0	7 593
	2013	7 718	5 666	2 052	270	0	7 988
Liberia	2011	8 902	...	...	4 570	0	13 472
	2012	—	—	—	—	—	—
	2013	7 000	...	...	19 602	0	26 602
Libya	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	...	...	...	...	...	...
Lithuania	2011	—	—	—	—	—	—
	2012	27 024	...	...	0	61 725	88 749
	2013	—	—	—	—	—	—
Luxembourg	2011	20 321	967	19 354	0	0	20 321
	2012	19 525	1 106	—	0	0	20 631
	2013	24 191	927	23 264	0	0	24 191

<sup>7</sup> Recruits for the army and police force are required to donate.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
Madagascar	2011	3 784	1 261	2 523	17 864	0	21 648
	2012	3 537	1 255	2 282	21 266	0	24 803
	2013	4 294	1 615	2 679	18 781	0	23 075
Malawi	2011	49 698	...	...	0	0	49 698
	2012	48 858	23 819	25 039	19 907	0	68 765
	2013	48 579	14 619	33 960	10 345	0	58 924
Malaysia	2011	623 404	...	...	48	0	623 452
	2012	647 153	229 869	417 284	45	0	647 198
	2013	636 477	221 081	415 396	4	0	636 481
Maldives	2011	...	...	...	...	...	...
	2012	1 489	...	...	6 258	0	7 747
	2013	1 721	...	...	7 370	0	9 091
Mali	2011	13 679	4 994	8 685	34 086	0	47 765
	2012	—	—	—	—	—	—
	2013	14 056	...	...	31 876	0	45 932
Malta	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Marshall Islands	2011	0			0	288	288
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Mauritania	2011	2 453	1 836	617	6 711	0	9 164
	2012	3 043	2 355	688	7 788	0	10 831
	2013	2 744	2 024	720	8 142	0	10 886
Mauritius	2011	40 000	18 817	21 183	5 547	0	45 547
	2012	40 738			4 526	0	45 264
	2013	41 629	10 343	31 286	7 720	0	49 349
Mexico	2011	43 297	...	...	1 722 384	0	1 765 681
	2012	48 892	46 448	2 444	1 718 254	0	1 767 146
	2013	41 708	41 666	42	1 321 622	0	1 363 330
Micronesia (Federated States of)	2011	153	61	92	1 646	0	1 799
	2012	180	35	145	1 655 <sup>a</sup>	0	1 835
	2013	169	27	142	1 561	20	1 919
Monaco	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Mongolia	2011	20 700	10 278	10 422	660	0	20 700
	2012	20 127	11 775	8 352	727	0	20 854
	2013	20 378	13 828	6 550	402	0	20 780
Montenegro	2011	2 200	616	1 584	4 300	0	6 500
	2012	5 065	1 192	1 256	10 641	0	15 706
	2013	5 473	1 481	3 992	11 130	0	16 603
Morocco	2011	157 937	...	...	73 398	0	232 197
	2012	156 085	...	...	91 669	0	247 754
	2013	236 060	200 651	35 409	78 686	0	314 746
Mozambique	2011	63 056	...	...	51 977	0	115 033
	2012	59 682	...	...	61 879	0	121 561
	2013	52 209			66 794	0	
Myanmar	2011	145 310	52 573	92 737	52 172	0	197 482
	2012	164 266	63 617	100 638	43 742	0	208 008
	2013	204 860	81 921	127 521	61 680	0	266 540
Namibia	2011	23 338	3 557	17 020	0	0	23 338
	2012	24 141	3 956	20 185	0	0	24 141
	2013	28 143	4 930	23 213	0	0	28 143
Nauru	2011	400	150	250	102	0	400
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Nepal	2011	177 195	53 158	124 037	20 000	0	177 195
	2012	...	...	...	...	...	189 321
	2013	188 048	47 012	141 036	26 144	0	201 122
Netherlands	2011	538 338	...	...	0	0	538 338
	2012	506 556	...	...	0	0	506 556
	2013	459 844	0	459 844	0	0	459 844

<sup>a</sup> Some "family" donors may actually be paid by the family of the patients.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
New Zealand	2011	147 093	17 508	129 585	0	0	147 093
	2012	139 845	16 192	123 653	0	0	139 845
	2013	125 684	13 583	112 101	0	0	125 684
Nicaragua	2011	73 912	...	...	0	0	73 912
	2012	72 988	...	...	0	0	72 988
	2013	72 658	...	...	0	0	72 658
Niger	2011	14 460	10 122	4 338	35 452	0	49 912
	2012	14 872	...	...	52 121	0	72 520
	2013	25 765	...	...	50 212	0	75 977
Nigeria	2011	...	...	...	...	...	57 652
	2012	40 442	31 285	9 157	2 624	0	43 066
	2013 <sup>9</sup>	53 764	40 540	13 224	71 337	0	125 101
Niue	2011	12	2	10	17	0	29
	2012	2	...	...	8	0	10
	2013	...	...	...	31	0	31
Norway	2011	203 352	13 000	200 926	0	0	218 100
	2012	213 031	16 589	196 442	0	0	213 031
	2013	—	—	—	—	—	—
Oman	2011	—	—	—	—	—	—
	2012	44 229	23 038	21 191	7 091	0	51 320
	2013	52 976	...	...	...	0	52 976
Pakistan	2011	165 822	...	...	910 167	0	1 075 989
	2012	158 478	...	...	1 123 800	0	1 282 278
	2013	247 262		2 113 185	0		2 360 447
Palau	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Panama	2011	3 232	...	...	19 195	5 188	54 427 <sup>10</sup>
	2012	2 440	...	...	47 350	5 155	54 945
	2013	3 100	...	...	45 982	4 332	53 414
Papua New Guinea	2011	15 304	7 624	7 680	11 659	0	26 963
	2012	14 403	7 567	6 836	12 115	0	26 518
	2013	15 847	7 811	8 036	13 543	0	29 390
Paraguay	2011	4 225	...	...	69 818	0	74 043
	2012	7 133	...	...	55 012	0	62 145
	2013	7 904		78 036	...		85 940
Peru	2011	90	...	...	5 751	105 430	141 112 <sup>11</sup>
	2012	9 377	0	0	156 377	0	165 754
	2013	9 340	...	...	195 403	0	204 753
Philippines	2011	418 937	...	...	162 689	9480	591 106
	2012	373 284	143 786	229 498	173 395	5764	552 443
	2013	357 524	...	...	148 024	1214	506 752
Poland	2011	1 124 550	193 388	931 162	77 753	605	1 202 908
	2012	1 159 581	166 658	992 978	81 926	529	1 171 480
	2013	1 158 628	225 712	932 863	81 762	423	1 175 274
Portugal	2011	405 029	41 923	363 106	0	0	405 029
	2012	386 562	44 837	341 725	0	0	386 562
	2013	356 281	38 554	317 727	0	0	356 281
Qatar	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	24 233	...	...	0	0	24 233
Republic of Korea	2011	2 100 798	...	...	0	0	2 100 798
	2012	2 202 958	518 480	1 684 470	0	0	2 202 958
	2013	2 206 245	619 683	1 586 562	0	0	2 206 245
Republic of Moldova	2011	24 206	7 763	16 443	47 184	23	71 413
	2012	31 887	12 755	19 132	45 630	6	77 523
	2013	34 867	9 415	25 452	36 795	1	71 663
Romania	2011	405 225	88 066	317 159	0	0	405 225
	2012	399 848	91 902	297 946	0	0	399 848
	2013	428 140	105 423	322 717	0	0	428 140

<sup>9</sup> The data given in this section are from NBTS and Lagos State Blood Transfusion Service.

<sup>10</sup> 27 512 of the units collected were not classified by donor type.

<sup>11</sup> 29 841 of the units collected were not classified by donor type.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
Russian Federation	2011	2 029 689	569 228	1 460 461	0	182 709	2 212 398
	2012	2 003 137	...	...	0	205 047	2 208 184
	2013	2 113 839	...	...	0	99 062	2 212 901
Rwanda	2011	37811	14 557	23 254	0	0	37811
	2012	40 520	12 359	28 161	0	0	40520
	2013	43 074	26 095	16 979	0	0	43 074
Saint Kitts and Nevis	2011	43	...	...	325	0	368
	2012	—	—	—	—	—	—
	2013	71	69	2	260	0	331
Saint Lucia	2011	1 539	878	661	760	0	2 299
	2012	1 536	...	...	731	0	2 267
	2013	1 344	...	...	823	0	2 167
Saint Vincent and the Grenadines	2011	68	...	...	1 072	0	1 140
	2012	72	...	...	1 100	0	1 172
	2013	158	...	...	987	0	1 145
Samoa	2011	296	...	...	2 230	0	2 526
	2012	402	112	290	1 825	0	2 227
	2013	244	...	...	1 771	0	2 015
San Marino	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Sao Tome and Principe	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	600	...	...	319	0	919
Saudi Arabia	2011	178 000	...	...	267 000	0	445 000
	2012	—	—	—	—	—	—
	2013	165 000	15 000	150 000	250 000	0	415 000
Senegal	2011	42 653	14 172	28 481	9 860	0	52 513
	2012	51 857	30 442	21 415	5 520	0	57 377
	2013	63 900	41 535	22 365	3 915	0	67 815
Serbia	2011	209 407	38 269	171 138	24 638	0	234 045
	2012	208 975	40 266	168 709	21 249	0	230 224
	2013	212 374	40 284	172 090	20 172	0	232 546
Seychelles	2011	—	—	—	—	—	—
	2012	1 006	...	...	335	0	1 341
	2013	820	...	...	790	0	1 610
Sierra Leone	2011	...	...	...	...	...	50 797
	2012	—	—	—	—	—	—
	2013	4 327	324	4 003	38 946	0	43 273
Singapore	2011	104 894	27 713	77 181	0	0	104 894
	2012	108 593	25 881	82 712	0	0	108 593
	2013	111 626	24 621	87 005	0	0	111 626
Slovakia	2011	200 540	32 083	168 457	0	0	200 540
	2012	203 825	—	—	0	0	203 852
	2013	210 845	26 604	184 241	0	0	210 845
Slovenia	2011	98 307	10 864	87 443	0	0	98 307
	2012	93 099	9 100	83 999	0	0	93 099
	2013	92 479	10 369	82 110	0	0	92 479
Solomon Islands	2011	719	...	...	1 787	0	2 506
	2012	1 178	706	472	1 395	0	2 573
	2013	—	—	—	—	—	—
Somalia	2011	2 859	279	2 580	15 297	0	18 156
	2012	5 216	1 361	3 855	20 299	0	25 155
	2013	9 915	...	...	14 165	4 250	28 330
South Africa	2011	942 406	119 763	822 603	0	0	742 <sup>12</sup> 943 109*
	2012	926 940	127 089	801 851	0	0	313 <sup>13</sup> 926 940
	2013	947 485	134 280	813 205	0	0	405 <sup>14</sup> 947 890
South Sudan	2011	0	...	...	4 205	0	4 205
	2012	21	...	...	2 331	0	2 352
	2013	65	...	...	2 747	0	2 812

<sup>12</sup> Pre-deposit autologous blood donations and directed donations.

<sup>13</sup> Directed donations.

<sup>14</sup> Directed donations.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
Spain <sup>15</sup>	2011	1 735 316	35 283	235 135	0	0	1 735 316
	2012	1 702 768	23 759	248 071	0	0	1 702 768
	2013	1 647 420	35 293	218 490	0	0	1 647 420
Sri Lanka	2011	318 885	219 704	99 181	11 315	0	330 200
	2012	349 423	...	...	2 182	0	351 605
	2013	380 808	...	...	0	0	380 808
Sudan	2011	30 031	0	0	222 447	0	252 478
	2012	32 406	...	...	157 026	0	189 412
	2013	32 406	...	...	157 026	0	189 432
Suriname	2011	10 913	...	...	0	0	10 913
	2012	9 846	...	...	0	0	9 846
	2013	10 100	...	...	0	0	10 100
Swaziland	2011	11 300	5 869	5 431	0	0	11 300
	2012	13 498	6 310	7 188	0	0	13 498
	2013	—	—	—	—	—	—
Sweden	2011	504 914	...	...	0	0	504 914
	2012	460 779	...	...	0	0	460 779
	2013	472 553	...	...	0	0	472 553
Switzerland	2011	348 784	...	...	0	0	348 784
	2012	339 520	...	...	0	0	339 520
	2013	344 000	...	...	0	0	344 000
Syrian Arab Republic	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Tajikistan	2011	15 924	3 520	12 404	2 587	13 631	32 142
	2012	14 653	2 907	11 746	3 757	4 924	5 508 <sup>16</sup> 27 783
	2013	14 701	5 288	9 413	4 714	12 544	31 959
Thailand <sup>17</sup>	2011	591 192	106 936	484 256	0	0	591 192
	2012	616 673	91 918	524 755	0	0	616 673
	2013	618 675	92 028	526 647	0	0	618 675
The former Yugoslav Republic of Macedonia	2011	54 009	8 274	48 266	2 531	0	56 540
	2012	46 024	7 286	38 738	2 522	0	48 546
	2013	54 018	8 659	45 359	1 026	0	54 018
Timor-Leste	2011	—	—	—	—	—	—
	2012	1 000	1 000	1 000	937	0	1 937
	2013	739	500	239	1 268	0	2 007
Togo	2011	36 152	12 519	23 633	3 153	0	39 305
	2012	40 029	...	...	2 681	0	42 710
	2013	39 558	10 639	28 919	1 930	0	41 488
Tonga	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Trinidad and Tobago	2011	...	...	...	...	...	17 613
	2012	0	...	...	20 290	...	20 290
	2013	...	...	...	...	...	21 300
Tunisia	2011	79 446	...	...	109 122	0	188 568
	2012	61 024	...	...	129 677	0	190 701
	2013	73 640	63 253	10 387	142 988	0	216 588
Turkey	2011	1 264 974	814 333	448 050	0	0	1 264 974
	2012	1 469 809	599 723	870 086	764 638	0	2 234 447
	2013	...	...	...	...	...	...
Turkmenistan	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Tuvalu	2011	56	44	12	41	0	41
	2012	113	103	10	81	0	194
	2013	65	64	1	37	0	102
Uganda	2011	202 939	81 176	60 881	0	0	202 939
	2012	...	...	...	...	...	...
	2013	202 935	...	...	0	0	202 935

<sup>15</sup> Number of VNRD from first-time and repeat donors are subnational data.

<sup>16</sup> Plasmapheresis donations.

<sup>17</sup> Donation numbers reported in this section only cover the national blood centre in Bangkok, accounting for approximately 30 of the national collections.

Country	Data year	No. whole blood donations collected (excluding autologous donations)					
		VNRD	VNRD from first time donors	VNRD from repeat donor	Family/ replacement donations	Paid donations	Others
Ukraine	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
United Arab Emirates	2011	102 046	50 023	52 023	296	0	102 046
	2012	95 911	38 364	57 547	1 341	0	97 303
	2013	106 384	32 039	68 552	94	4297	113 765
United Kingdom of Great Britain and Northern Ireland	2011	2 352 835	...	...	0	0	2 352 835
	2012	2 263 885	...	...	0	0	2 263 885
	2013	2 110 117	18 451 <sup>18</sup>	176 549	0	0	2 110 117
United Republic of Tanzania	2011	88 064	70 452	17 612	6 246	0	94 310
	2012	96 625	18 525	74 100	16 213	0	108 838
	2013	138 425	113 509	24 916	25 220	0	163 645
United States of America	2011	13 631 000	...	...	0	0	13 631 000
	2012 <sup>19</sup>	6 124 762	1 187 306	4 937 456	0	0	6 124 762
	2013 <sup>20</sup>	5 610 978	162 677	669 992	310	0	5 611 301
Uruguay	2011	...	...	...	...	...	95 812
	2012	64 681	...	...	63 441	0	1 732 <sup>21</sup> 104 342 <sup>22</sup>
	2013	45 802	...	...	52 745	0	98 547
Uzbekistan	2011	—	—	—	—	—	—
	2012	—	—	—	—	—	—
	2013	—	—	—	—	—	—
Vanuatu	2011	1 173	...	...	217		1 390
	2012	—	—	—	—	—	—
	2013	1 474	...	...	55	0	1 529
Venezuela (Bolivarian Republic of)	2011	26 559	...	...	389 787	0	416 346
	2012	29 531			416 426	0	445 957
	2013	—	—	—	—	—	—
Viet Nam	2011	682 958	...	...	37 636	48 308	768 902
	2012	795 972	557 181	238 791	39 000	40 664	875 636 <sup>23</sup>
	2013	877 127	551 897	325 230	35 119	18 222	930 468
Yemen	2011	—	—	—	—	—	—
	2012	7 000	...	...	10 000	0	17 000
	2013	—	—	—	—	—	—
Zambia	2011	78 966	38 210	40 756	0	0	78 966
	2012	107 571	52 341	55 464	725	0	108 296
	2013	113 386	57 708	27 844 <sup>24</sup>	0	0	113 386
Zimbabwe	2011	75 949	32 444	43 505	0	0	75 949
	2012	81 779	30 270	51 509	0	0	81 779
	2013	56 958	19 993	36 965	0	0	56 958 <sup>25</sup>

<sup>18</sup> Data on the number of first-time and repeat donors are provided by Scottish National Blood Transfusion Service, which reported a total whole blood collection of 195000.

<sup>19</sup> It was estimated that the number of blood donations reported (from American Red Cross, Blood Systems Inc. and New York Blood Center) covered 60% of the national data.

<sup>20</sup> It was estimated that the number of blood donations reported covered 60% of the national data (from American Red Cross, Blood Systems Inc. and New York Blood Center).

<sup>21</sup> Directed donations: 358.

<sup>22</sup> Sum of the donations by different types of donors was not equal to the total number.

<sup>23</sup> 59.1% donations with blood volume of 250 ml or less/donation unit, 40.9% with blood volume of 350 ml or more/unit.

<sup>24</sup> Number of repeat donors.

<sup>25</sup> All donations: 67420; usable donations: 56958.

### Annex 3 Blood donations 2011–2013 (continued)

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected					Total no. of donations	No. of pre-deposit autologous blood donations
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations		
Afghanistan	2011	No							0
	2012	No							0
	2013	No							0
Albania	2011	No							25
	2012	No							...
	2013	No							...
Algeria	2011	Yes	3 380	...	...	0	0	3 380	...
	2012	Yes	4 580	...	...	0	0	4 580	...
	2013	Yes	5 659	...	...	0	0	5 659	0
Andorra	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Angola	2011	No							...
	2012	No							...
	2013	No							...
Antigua and Barbuda	2011	No							0
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Argentina	2011	...							26 804
	2012	Yes	...	...	...	...	...	...	...
	2013	Yes	28 981	7 245	21 736	9 661		38 642	11 455
Armenia	2011	Yes	...	...	...	...	...	...	0
	2012	Yes	0	0	0	0	313	313	0
	2013	Yes	0	0	0	0	125	0	125
Australia	2011	Yes	370 396	0	370 396	0	0	370 396	1 036
	2012	Yes	463 773	0	463 773	0	0	463 773	496
	2013	Yes	518 579	0	518 579	0	0	518 579	422
Austria	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Azerbaijan	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Bahamas	2011	...							4
	2012	...							2
	2013	...							16
Bahrain	2011	No							0
	2012	Yes	...	...	...	...	...	...	0
	2013	Yes	...	...	...	...	...	...	0
Bangladesh	2011	Yes	0		141	0	0	141	0
	2012	Yes	...	...	...	...	...	...	...
	2013	Yes	75	75	0	225	0	0	300
Barbados	2011	—	—	—	—	—	—	—	—
	2012	Yes	...	...	...	...	...	...	90
	2013	—	—	—	—	—	—	—	—
Belarus	2011	Yes	0			176 278		176 278	
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Belgium	2011	Yes	133 072	7 702	125 370	0	0	0	133 072
	2012	Yes	136 164	7 047	129 090	0	0	0	136 164
	2013	Yes	125 541	7 117	118 424	0	0	0	125 541
Belize	2011	No							0
	2012	No							...
	2013	No							...
Benin	2011	No							...
	2012	No							25
	2013	No							...
Bhutan	2011	No							0
	2012	No							0
	2013	No							0

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations	
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others		
Bolivia	2011	Yes	200	120	80	0	0	0	200	74
	2012	Yes	...	...	...	...	...	...	...	59
	2013	Yes	122	100	22	0	0	0	122	76
Bosnia and Herzegovina	2011	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—
Botswana	2011	Yes	14	...	...	0	0	0	14	0
	2012	Yes	40	...	...	0	0	0	40	...
	2013	Yes	57	...	...	0	0	0	57	...
Brazil	2011	Yes	45 190	...	...	0	0	0	45 190	2 776
	2012	Yes	...	...	...	...	...	...	...	2 056
	2013	—	—	—	—	—	—	—	—	—
Brunei Darussalam	2011	Yes	239	83	103	0	0	0	239	0
	2012	Yes	237	...	...	0	0	0	237	0
	2013	Yes	252	...	...	0	0	0	252	0
Bulgaria	2011	Yes	0			0	1 297	0	1 297	17
	2012	Yes	0			0	1 527	0	1 527	74
	2013	...	...	...	...	...	...	...	...	...
Burkina Faso	2011	No								0
	2012	No								0
	2013	No								0
Burundi	2011	No								0
	2012	No								0
	2013	No								0
Cambodia	2011	No								0
	2012	No								0
	2013	No								0
Cameroon	2011	—	—	—	—	—	—	—	—	—
	2012	No								...
	2013	No								...
Canada	2011	Yes	125 095	317	124 778	0	0	0	125 095	418 <sup>26</sup>
	2012	Yes	116 085	177	115 908				116 085	295
	2013	Yes	107 839	66	107 773	0	0	0	107 839	149
Cape Verde	2011	No								0
	2012	No								0
	2013	No								0
Central African Republic	2011	—	—	—	—	—	—	—	—	—
	2012	No								0
	2013	No								0
Chad	2011	No								0
	2012	No								0
	2013	No								0
Chile	2011	...	...	...	...	...	...	...	...	...
	2012	Yes	2 911	...	...	0	0	0	2 911	...
	2013	Yes	3 545	...	...	0	0	0	3 545	...
China	2011	Yes	599 545	...	...	0	0	0	599 545	...
	2012	Yes	628 038	...	...	46 958	0	0	674 996	...
	2013	Yes	709 087	...	...	49 139	0	0	758 226	...
Colombia	2011	Yes	21 544	9 533	12 021	2 249	0	1 505 <sup>27</sup>	25 308	426
	2012	Yes	32 658	18 616	14 042	4 423	0	0	37 081	272
	2013	Yes	32 046	17 585	14 461	6 270	0	0	38 316	217
Comoros	2011	No								0
	2012	No								0
	2013	No								0
Congo	2011	No								0
	2012	No								0
	2013	No								0
Cook Islands	2011	No								0
	2012	No								0
	2013	No								0

<sup>26</sup> Most autologous donations are collected in hospitals, not by blood centres.

<sup>27</sup> Directed and pre-deposit autologous blood donations.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	
Costa Rica	2011	...							47
	2012	Yes	99	...	...	0	0	99	3
	2013	...							...
Côte d'Ivoire	2011	No							...
	2012	No							457
	2013	No							406
Croatia	2011	Yes	2 586		2 586				438
	2012	Yes	2 764		2 764			2 764	583
	2013	Yes	3 277		3 277			3 277	155
Cuba	2011	...							...
	2012	...							...
	2013	...							...
Cyprus	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	Yes	152	...	...	0	0	152	3
Czech Republic	2011	Yes	130 300	...	...			142 600	15 400
	2012	Yes	...	...	...	...	...	...	12 800
	2013	Yes	686 300	21 500	664 800	0	0	686 300 <sup>28</sup>	11 200
Democratic People's Republic of Korea	2011	No							...
	2012	No							...
	2013	No							...
Democratic Republic of the Congo	2011	No							...
	2012	No							...
	2013	No							...
Denmark	2011	Yes	4 500	0	4 500	0	0	4 500	0
	2012	Yes	4 318	0	4 318	0	0	4 318	0
	2013	Yes	6 000	0	6 000	0	0	6 000	0
Djibouti	2011	...							...
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Dominica	2011	...							...
	2012	No							0
	2013	No							...
Dominican Republic	2011	...							67
	2012	...							34
	2013	...							46
Ecuador	2011	...							36
	2012	...							16
	2013	Yes	...	...	...	...	...	1	1 713
Egypt	2011	Yes	1 166	...	...	0	0	1 166	...
	2012	Yes	1 278	301	977	0	0	1 278	...
	2013	Yes	1 278	0	1 278	0	0	1 278	...
El Salvador	2011	Yes	...	...	...	...	...	783	7
	2012	Yes	...	...	...	...	...	...	2
	2013	Yes	490	...	633	0	0	1 123	9
Equatorial Guinea	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Eritrea	2011	No							...
	2012	No							...
	2013	No							...
Estonia	2011	Yes	1 955	0	1 955	0	0	1 955	0
	2012	Yes	1 937	0	1 937	0	0	1 937	0
	2013	Yes	2 045	0	2 045	0	0	2 045	0
Ethiopia	2011	No							0
	2012	No							0
	2013	No							...
Fiji	2011	No							0
	2012	No							...
	2013	—	—	—	—	—	—	—	—
Finland	2011	Yes	5 326	0	5 326	0	0	5 326	0
	2012	Yes	4 565	0	4 565	0	0	4 565	0
	2013	Yes	4 773	0	4 773	0	0	4 773	0

<sup>28</sup> Some apheresis donors are compensated for their expenses, effort and time lost (maximum limit around US\$ 20).

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	
France	2011	Yes	603 804	...	...	0	0	603 804	1 830
	2012	Yes	490 963	...	...	0	0	490 963	1 283
	2013	Yes	246 252	...	...	0	0	246 252	601
Gabon	2011	No							0
	2012	No							...
	2013	No							0
Gambia	2011	No							...
	2012	No							...
	2013	No							...
Georgia	2011	Yes	0			0	381	381	...
	2012	Yes	0			0	100	100	...
	2013	Yes	0			0	21	21	...
Germany	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	Yes	2 734 272	...	...	0	0	2 734 272	...
Ghana	2011	No							...
	2012	No							29
	2013	No							...
Greece	2011	Yes	...	...	...	...	...	...	...
	2012	Yes	8 402	3 180	5 222	9 213	0	17 615	2 153
	2013	Yes	...	...	...	...	0	31 862	2 050
Grenada	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	...	...	...	...	...	...	...	...
Guatemala	2011	Yes	...	...	...	1 490 <sup>29</sup>	0	1 490	36
	2012	Yes	...	...	...	...	...	...	23
	2013	Yes	294	...	...	2 163	0	2 457	14
Guinea	2011	No							2
	2012	No							6
	2013	No							89
Guinea-Bissau	2011	No							...
	2012	No							...
	2013	No							...
Guyana	2011	No							0
	2012	...							...
	2013	...							...
Haiti	2011	No							...
	2012	...							...
	2013	...							...
Honduras	2011	Yes	0			687	0	687	10
	2012	Yes	0			1 245	0	1 245	10
	2013	Yes	...	...	...	...	...	...	6
Hungary	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	...							...
Iceland	2011	Yes	838	0	838			838	0
	2012	Yes	1 030	0	1 030	0	0	1 030	0
	2013	—	—	—	—	—	—	—	—
India	2011	—	—	—	—	—	—	—	—
	2012	Yes	...	...	...	...	...	...	...
	2013	Yes	...	...	...	...	...	...	...
Indonesia	2011	Yes	...	...	...	...	...	...	...
	2012	Yes	...	...	...	...	...	...	...
	2013	Yes	301	...	...	...	...	301	...
Iran (Islamic Republic of)	2011	Yes	2 875	744	2 131	0	0	2 875	...
	2012	Yes	11 772	312	11 460	0	0	11 772	0
	2013	Yes	5 751	240	5 511	0	0	5 751	0
Iraq	2011	...							0
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—

<sup>29</sup> Data are not divided by donor type, although the majority are still family/replacement donations.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	
Ireland	2011	Yes	...	...	...	...	...	...	9
	2012	Yes	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—	—
Israel	2011	...	...	...	...	...	...	...	...
	2012	Yes	1 781	1	1 780	0	0	1 781	36
	2013	Yes	2 284	0	2 284	0	0	2 284	45
Italy	2011	Yes	505 660	...	...	0	0	505 660	74 554
	2012	—	—	—	—	—	—	—	—
	2013	Yes	511 549	...	...	0	0	511 549	51 185
Jamaica	2011	No							45
	2012	No							75
	2013	...							78
Japan	2011	Yes	1 521 179	...	...	0	0	1 521 179	145 529
	2012	Yes	1 532 881	12 120	1 520 761	0	0	1 532 881	0
	2013	Yes	1 521 795	10 665	1 511 130	0	0	1 521 795	...
Jordan	2011	Yes	30	0	30	20	0	50	0
	2012	Yes	30	0	30	20	0	50	...
	2013	Yes	35	0	35	20	0	55	...
Kazakhstan	2011	Yes	15 782	...	...	0	38 900	54 682	...
	2012	Yes	18 145	0	18 145	0	37 079	55 224	...
	2013	Yes	...	...	...	...	...	...	...
Kenya	2011	No							0
	2012	No							0
	2013	No							0
Kiribati	2011	No							...
	2012	No							...
	2013	—	—	—	—	—	—	—	—
Kuwait	2011	Yes	401	0	401	299	7 629	8 329	0
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Kyrgyzstan	2011	Yes	...	...	...	...	...	1 807	0
	2012	Yes	716	...	..	1 000	0	1 716	5
	2013	No							...
Lao People's Democratic Republic	2011	No							0
	2012	No							0
	2013	No							0
Latvia	2011	Yes	...	...	...	...	...	...	...
	2012	Yes					2 073	2 073	0
	2013	Yes	...	...	...	...	...	...	0
Lebanon	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	Yes	...	...	...	...	...	...	...
Lesotho	2011	No							0
	2012	No							...
	2013	Yes	12	0	12	0	0	12	...
Liberia	2011	No							...
	2012	—	—	—	—	—	—	—	—
	2013	No							...
Libya	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	Yes	...	...	...	...	...	...	...
Lithuania	2011	—	—	—	—	—	—	—	—
	2012	Yes	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—	—
Luxembourg	2011	Yes	3 416	0	3 416	0	0	3 416	66
	2012	Yes	3 811	0	3 811	0	0	3 811	34
	2013	Yes	3 859	0	3 859	0	0	3 859	67
Madagascar	2011	No							...
	2012	No							...
	2013	No							...
Malawi	2011	No							0
	2012	No							0
	2013	No							0

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	
Malaysia	2011	Yes	17 068						17 068 7
	2012	Yes	18 781						13
	2013	Yes	16 643	16 643	0	0	0		16 643 0
Maldives	2011	No							...
	2012	No							...
	2013	No							...
Mali	2011	No							...
	2012	—	—	—	—	—	—	—	—
	2013	...							...
Malta	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Marshall Islands	2011	No							...
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Mauritania	2011	No							0
	2012	No							0
	2013	No							...
Mauritius	2011	Yes	131	...	...	0	0		0
	2012	Yes	117	...	...				117 0
	2013	Yes	69	...	...	38	0		107 ...
Mexico	2011	No							2 384
	2012	No							1 716
	2013	Yes	0		74 961		0	74 961	1 605
Micronesia (Federated States of)	2011	No							0
	2012	No							0
	2013	No							0
Monaco	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Mongolia	2011	Yes	3 206	0	3 206	0	0		3 206 0
	2012	Yes	1 809	3	1 806	0	0		1 806 ...
	2013	Yes	1 859	23	1 836	0	0		1 859 ...
Montenegro	2011	No							0
	2012	No							0
	2013	No							0
Morocco	2011	Yes	9	...	...	124	0	0	133 0
	2012	Yes	...	...	...	...	...	...	182 0
	2013	Yes	0	0	0	122	0	0	122 0
Mozambique	2011	No							...
	2012	No							...
	2013	No							...
Myanmar	2011	Yes	51	0	51	2	0		53 0
	2012	Yes	11	0	11	0	0		11 <sup>30</sup> 0
	2013	Yes	33	0	33	0	0		33 <sup>31</sup> 0
Namibia	2011	Yes	511	...	...	0	0		511 0
	2012	Yes	978	0	978	0	0		978 0
	2013	Yes	851	61	790	0	0		851 0
Nauru	2011	No							...
	2012	No							...
	2013	No							...
Nepal	2011	No							0
	2012	Yes	6	6	0	6	0		12 ...
	2013	Yes	5	5	0	15	0		20 ...
Netherlands	2011	Yes	347 554	0	347 554	0	0		347 554 ...
	2012	Yes	321 184	0	321 184	0	0		321 184 ... <sup>32</sup>
	2013	Yes	283 868	...	...	0	0		283 868 ...
New Zealand	2011	Yes	35 377	3	35 374	0	0		35 377 146
	2012	Yes	36 706	3	36 703	0	0		36 706 135
	2013	Yes	34 527	1	34 526	0	0		34 527 157

<sup>30</sup> Only covers National Blood Centre.

<sup>31</sup> Only covers National Blood Centre.

<sup>32</sup> Pre-deposit autologous donation only with medical indication, approximately less than 10 per year.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	
Nicaragua	2011	...							...
	2012	...							...
	2013	...							...
Niger	2011	No							...
	2012	No							0
	2013	No							0
Nigeria	2011	No							...
	2012	No							...
	2013	No							...
Niue	2011	No							0
	2012	No							0
	2013	No							0
Norway	2011	Yes	14 744	...	...	0	0	14 744	14
	2012	Yes	14 447	0	14 447	0	0	14 447	7
	2013	—	—	—	—	—	—	—	—
Oman	2011	—	—	—	—	—	—	—	—
	2012	Yes	219	...	...	0	0	219	0
	2013	Yes	92	...	...	0	0	92	0
Pakistan	2011	Yes	...	...	...	...	...	7 272	...
	2012	Yes	...	...	...	...	...	3 512	...
	2013	Yes	0			3 512	0	3 512	...
Palau	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Panama	2011	Yes	...	...	...	...	...	...	63
	2012	Yes	...	...	...	...	...	...	138
	2013	Yes	...	...	...	...	...	...	115
Papua New Guinea	2011	No							
	2012	No							0
	2013	No							0
Paraguay	2011	Yes	...	...	...	...	...	...	36
	2012	Yes	...	...	...	...	...	...	9
	2013	Yes	...	...	...	...	...	...	116
Peru	2011	...							90
	2012	No							295
	2013	Yes	...	...	...	...	...	...	118
Philippines	2011	Yes	1 186	...	...	1 044	25	2 255	...
	2012	Yes	22 291	...	...	5 456	40	239	28 026
	2013	Yes	2 988	...	...	3 301	0	4	6 293
Poland	2011	Yes	42 301	0	0	1 721	6 412	50 434	1 657
	2012	Yes	50 167			2 392	5 508	55 765	1 570
	2013	Yes	51 628			2 290	2 242	55 846	1 325
Portugal	2011	Yes	5 860	84	5 776	0	0	0	5 860
	2012	Yes	5 884				0		5 884
	2013	Yes	5 538				0		5 538
Qatar	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	No							0
Republic of Korea	2011	Yes	511 582	...	...	...	...	511 582	...
	2012	Yes	542 507	22 696	519 804	0	0	542 507	...
	2013	Yes	744 552	52 584	69 183	0	0	744 552	0
Republic of Moldova	2011	Yes	838	269	569	4 431	470	5 739	51
	2012	Yes	2 160	864	1 296	5 757	432	8 349	148
	2013	Yes	2 283	618	1 665	4 736	353	7 372	69
Romania	2011	Yes	6 232	...	...	0	0	6 232	...
	2012	Yes	6 830	...	...	0	0	6 830	57
	2013	Yes	8 612	...	...	0	0	8 612	0
Russian Federation	2011	Yes	752 423	...	...	0	203 081	955 504	...
	2012	Yes	675 592	...	...	0	180 714	856 306	...
	2013	Yes	676 299	...	...	0	134 551	810 850	...
Rwanda	2011	No							0
	2012	No							0
	2013	No							0

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations
			VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations	
Saint Kitts and Nevis	2011	No	—	—	—	—	—	—	0
	2012	—	—	—	—	—	—	—	—
	2013	No	—	—	—	—	—	—	—
Saint Lucia	2011	No	—	—	—	—	—	—	5
	2012	...	—	—	—	—	—	—	9
	2013	...	—	—	—	—	—	—	7
Saint Vincent and the Grenadines	2011	...	—	—	—	—	—	—	17
	2012	No	—	—	—	—	—	—	23
	2013	No	—	—	—	—	—	—	19
Samoa	2011	No	—	—	—	—	—	—	0
	2012	No	—	—	—	—	—	—	0
	2013	No	—	—	—	—	—	—	0
San Marino	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Sao Tome and Principe	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	No	—	—	—	—	—	—	—
Saudi Arabia	2011	Yes	3 500	...	...	8 927	0	12 427	320
	2012	—	—	—	—	—	—	—	—
	2013	Yes	4 600	1 700	2 900	7 950	0	12 550	419
Senegal	2011	No	—	—	—	—	—	—	—
	2012	No	—	—	—	—	—	—	0
	2013	No	—	—	—	—	—	—	—
Serbia	2011	Yes	1 645	...	...	1 468	0	3 113	50
	2012	Yes	1 282	...	...	1 834	0	3 116	33
	2013	Yes	1 214	—	—	1 579	0	2 793	31
Seychelles	2011	—	—	—	—	—	—	—	—
	2012	No	—	—	—	—	—	—	0
	2013	No	—	—	—	—	—	—	0
Sierra Leone	2011	...	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	No	—	—	—	—	—	—	—
Singapore	2011	Yes	10 229	45	10 184	0	0	10 229	107
	2012	Yes	9 980	23	9 957	0	0	9 980	88
	2013	Yes	9 734	10	9 724	0	0	9 734	65
Slovakia	2011	Yes	5 580	...	...	0	690	6 270	864
	2012	Yes	6 517	...	...	0	0	6 517	881
	2013	Yes	5 609	...	...	0	0	5 609	838
Slovenia	2011	Yes	2 637	79	2 558	0	0	2 637	1 842
	2012	Yes	2 966	89	2 877	0	0	2 966	1 226
	2013	...	—	—	—	—	—	—	855
Solomon Islands	2011	...	—	—	—	—	—	—	0
	2012	No	—	—	—	—	—	—	0
	2013	—	—	—	—	—	—	—	—
Somalia	2011	...	—	—	—	—	—	—	0
	2012	...	—	—	—	—	—	—	0
	2013	...	—	—	—	—	—	—	—
South Africa	2011	Yes	20 998	137	20 861	0	0	20 998	372
	2012	Yes	23 142	105	23 037	0	0	23 142	209
	2013	Yes	23 950	102	23 848	0	0	23 950	155
South Sudan	2011	...	—	—	—	—	—	—	—
	2012	No	—	—	—	—	—	—	0
	2013	No	—	—	—	—	—	—	0
Spain <sup>33</sup>	2011	Yes	61 379	...	...	0	0	61 379	8 491
	2012	Yes	53 039	0	3 168	0	0	53 039	7 195
	2013	Yes	50 677	0	2 856	0	0	50 677	6 636
Sri Lanka	2011	Yes	810	...	...	0	0	810	0
	2012	Yes	1 107	...	...	0	0	1 107	0
	2013	Yes	1 636	...	...	0	0	1 636	0
Sudan	2011	...	—	—	—	—	—	—	0
	2012	No	—	—	—	—	—	—	0
	2013	No	—	—	—	—	—	—	—

<sup>33</sup> Number of VNRD from first-time and repeat donors are subnational data.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	
Suriname	2011	...							4
	2012	No							2
	2013	...							2
Swaziland	2011	No							...
	2012	No							...
	2013	...	...	...	...	...	...	...	...
Sweden	2011	Yes	66 368	...	...	0	0	66 368	63
	2012	Yes	55 715	...	...	0	0	55 715	58
	2013	Yes	1 264	...	...	0	0	1 264	56
Switzerland	2011	Yes	20 322	...	...	0	0	20 322	1 910
	2012	Yes	20 491	...	...	0	0	20 491	...
	2013	Yes	20 150	...	...	0	0	20 150	1 000
Syrian Arab Republic	2011	...	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...	...
Tajikistan	2011	Yes	53	20	33	0	5 121	5 174	...
	2012	Yes	5 508	...	...	0	0	5 508	...
	2013	Yes	0	0	0	0	6 610	6 610	0
Thailand	2011	Yes	15 612	0	15 612	0	0	15 612	2
	2012	Yes	15 628	0	15 628	0	0	15 628	0
	2013	Yes	15 871	160	15 711	0	0	15 871	...
The former Yugoslav Republic of Macedonia	2011	No							3
	2012	Yes	52	10	42	0	0	52	...
	2013	...							...
Timor-Leste	2011	—	—	—	—	—	—	—	—
	2012	No							0
	2013	No							0
Togo	2011	No							...
	2012	No							...
	2013	No							0
Tonga	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Trinidad and Tobago	2011	No							...
	2012	...							55
	2013	...							...
Tunisia	2011	No							...
	2012	No							...
	2013	No							25
Turkey	2011	Yes	11 241	7 469	3 772	0	0	11 241	0
	2012	Yes	8 863	8 863	0	121 528	0	130 391	...
	2013	Yes	...	...	...	...	...	...	...
Turkmenistan	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Tuvalu	2011	No							0
	2012	No							0
	2013	No							0
Uganda	2011	No							...
	2012	No							...
	2013	No							...
Ukraine	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
United Arab Emirates	2011	Yes	2 976	980	1 996	0	0	2 976	6
	2012	Yes	5 259	1 009	4 250	150	0	5 309	0
	2013	Yes	4 137	1 220	2 917	0	0	7 090	5
United Kingdom of Great Britain and Northern Ireland	2011	Yes	173 793	...	...	0	0	173 793	3
	2012	Yes	138 421	...	...	0	0	138 421	2
	2013	Yes	132 289 <sup>34</sup>	...	...	0	0	132 289	8

<sup>34</sup> Number of platelet apheresis donations: 132275; number of granulocyte apheresis donations: 14. Plasma apheresis donations of 139 litres were not included in the above number reported.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						No. of pre-deposit autologous blood donations
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	
United Republic of Tanzania	2011	No							0
	2012	No							0
	2013	No							0
United States of America	2011	Yes	1 978 000	...	...	0	0	1 978 000	113 000
	2012	Yes	1 100 424	71 408	1 029 016	0	0	1 100 424	25 036
	2013	Yes	1 027 325	55 880	971 445	172	0	1 027 497	12 947
Uruguay	2011	...							...
	2012	Yes						1 408	358
	2013	Yes	112			1 224		1 336	604
Uzbekistan	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Vanuatu	2011	No							...
	2012	—	—	—	—	—	—	—	—
	2013	No							...
Venezuela (Bolivarian Republic of)	2011	...							...
	2012	...							...
	2013	—	—	—	—	—	—	—	—
Viet Nam	2011	Yes	492	0	492	2 305	32 642	35 439	165
	2012	Yes	535	0	535	1 340	32 270	34 145	233
	2013	Yes	470	0	470	4 551	36 354	41 375	401
Yemen	2011	—	—	—	—	—	—	—	—
	2012	No							...
	2013	—	—	—	—	—	—	—	—
Zambia	2011	No							192
	2012	No							8
	2013	No							20
Zimbabwe	2011	Yes	160	0	160	0	0	0	160
	2012	Yes	107	0	107	0	0	0	107
	2013	Yes	15	0	15	0	0	0	15

## Annex 4

# Laboratory test requirements for screening donated blood for transfusion-transmissible infections (TTIs), 2013

Y: Required for all donations. S: Required for selected donations.  
 ... Not reported/not available. — No response.  
 \* Year 2011 data. \*\* Year 2012 data.

Country	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria		HTLV I/II		
	Ab	A <sub>g</sub>	NAT	HBsA <sub>g</sub>	Anti-HBc Ab	NAT	Anti-HCV Ab	A <sub>g</sub>	NAT	Serological testing	Others	Ab	Others	Smear microscopy	A <sub>g</sub>	Others	Ab	Others
Afghanistan	Y			Y			Y			Y								
Albania	Y	Y		Y			Y			Y								
Algeria	Y	Y		Y			Y			Y								
Andorra	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Angola	Y	Y		Y			Y			Y				Y				
Antigua and Barbuda*	Y	Y		Y			Y			Y				S				
Argentina	Y	Y	Y	Y	Y		Y	Y		Y		Y	Y	S			Y	
Armenia	Y	Y		Y	Y		Y			Y								
Australia	Y		Y	Y	S	Y	Y		Y	Y <sup>1</sup>					S <sup>2</sup>	Y		
Austria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Azerbaijan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bahamas	Y	Y		Y	Y		Y			Y						Y		
Bahrain	Y	Y		Y	Y		Y			Y								
Bangladesh	Y			Y			Y			Y						Y		
Barbados	Y	Y		Y			Y			Y							Y	
Belarus*		Y	S	Y		S	Y		S	Y								
Belgium	Y		Y	Y	S	Y	Y		Y	Y		S			S			
Belize	Y	Y		Y			Y			Y		Y		Y				
Benin	Y	Y		Y			Y			Y								
Bhutan	Y			Y			Y			Y		S <sup>3</sup>				S		
Bolivia	Y	Y		Y			Y			Y <sup>4</sup>		Y		Y	Y	Y <sup>5</sup>		
Bosnia and Herzegovina	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Botswana	Y	Y		Y			Y	Y		Y								
Brazil**	Y	Y		Y	Y		Y	Y		Y		Y		Y	S	S		Y
Brunei Darussalam	Y	Y		Y			Y			Y								
Bulgaria**	Y	Y		Y			Y	Y		Y								
Burkina Faso	Y			Y			Y			Y								
Burundi	Y	Y		Y			Y			Y								
Cambodia	Y			Y			Y			Y								
Cameroon	Y	Y		Y			Y			Y								
Canada	Y	.	Y	Y	Y	Y	Y		Y	Y		S				Y		
Cape Verde	Y	Y		Y			Y	Y		Y								
Central African Republic	Y	Y		Y	Y		Y	Y		Y								
Chad	Y			Y			Y			Y								
Chile	Y	Y		Y	Y		Y	Y		Y		Y					Y	
China	Y	Y	Y	Y		Y	Y		Y	Y								
Colombia	Y			Y			Y			Y		Y		Y	S <sup>6</sup>			
Comoros	Y			Y			Y			Y								
Congo	Y	S		Y			Y	S		Y								
Cook Islands	Y			Y			Y			Y								
Costa Rica	Y	Y		Y	Y		Y			Y		Y		Y			Y	
Côte d'Ivoire	Y	Y		Y			Y			Y								
Croatia	Y	Y		Y			Y	Y		Y								
Cuba	Y		Y	Y		Y	Y		Y	Y								

<sup>1</sup> *Treponema pallidum* haemagglutination assay (TPHA).

<sup>2</sup> Antibody screening.

<sup>3</sup> Rapid plasma reagins (RPR) on positive TPHA units.

<sup>4</sup> TPHA.

<sup>5</sup> Immunofluorescence in special cases.

<sup>6</sup> In endemic zones or for donors coming from endemic zones.

	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria			HTLV I/II	
	Ab	Ag	NAT	HBSAg	Anti-HBc Ab	NAT	Anti-HCV Ab	Ag	NAT	Serological testing	Others	Ab	Others	Smear microscopy	Ag	Others	Ab	Others
Country																		
Cyprus	Y			Y	Y		Y			Y								
Czech Republic	Y	Y		Y			Y			Y								
Democratic People's Republic of Korea	Y			Y				Y		Y				S				
Democratic Republic of the Congo	Y	S		Y			Y			Y				S				
Denmark	Y		Y	Y	S	Y	Y		Y							S <sup>7</sup>		
Djibouti	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dominica	Y	Y		Y						Y							Y	
Dominican Republic	...	...																
Ecuador	Y	Y	Y	Y	Y	Y	Y	Y	Y							S		
Egypt	Y	Y	Y	Y	S	Y	Y			Y	Y							
El Salvador	Y	Y		Y			Y			Y <sup>8</sup>		Y						
Equatorial Guinea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Eritrea	Y	Y		Y						Y								
Estonia	Y	Y	Y	Y		Y	Y			Y	Y							
Ethiopia	Y	Y		Y			Y			Y								
Fiji**	Y			Y			Y			Y							Y	
Finland	Y	Y	Y	Y		Y	Y			Y				S	S	S	Y	
France	Y		Y	Y	Y	Y	Y			Y	Y		S	S	S		Y	
Gabon	Y	Y		Y	Y		Y	Y		Y			Y			Y		Y
Gambia	Y	Y		Y			Y											
Georgia	Y	Y		Y			Y			Y								
Germany	Y		Y	Y	Y	S	Y			Y	Y		S					
Ghana	Y	Y		Y			Y			Y								
Greece	Y	Y	Y	Y	S	Y	Y	S	Y	Y				S	Y	Y <sup>9</sup>		
Grenada	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Guatemala	Y	Y		Y	Y		Y	Y		Y			Y					
Guinea	Y	S		Y			Y	Y	S	Y								
Guinea-Bissau	Y	Y		Y	Y		Y	Y		Y						Y	Y	
Guyana	Y			Y			Y			Y			Y		Y	Y		Y
Haiti		Y		Y			Y			Y			Y					Y
Honduras	Y	Y	S	Y	Y	S	Y			S	Y		Y	S		Y		
Hungary**	Y	Y		Y	S		Y			Y								
Iceland**	Y	Y		Y			Y									S		
India	Y			Y			Y			Y			Y		Y	Y	Y <sup>10</sup>	
Indonesia	Y	Y	S	Y		S	Y			S	Y				S			
Iran (Islamic Republic of)	Y	Y		Y			Y			Y						S		
Iraq*	Y	Y		Y	Y		Y			Y								
Ireland**	Y		Y	Y	Y	Y	Y			Y	Y					Y		
Israel	Y		Y	Y			Y	Y		Y	Y					Y		
Italy	Y		Y	Y			Y	Y		Y	Y							
Jamaica	Y	Y		Y			Y			Y <sup>11</sup>				S			Y	
Japan	Y		Y	Y	Y	Y	Y			Y	Y		S				Y	
Jordan	Y	Y		Y	Y		Y	S		Y		S <sup>12</sup>						
Kazakhstan	Y	Y	Y	Y			Y	Y		Y	Y							
Kenya	Y	Y		Y			Y			Y								
Kiribati	Y			Y			Y			Y								
Kuwait*	Y		Y	Y	Y	Y	Y			Y	Y				S <sup>13</sup>	Y		
Kyrgyzstan	Y			Y				Y		Y						Y		
Lao People's Democratic Republic	Y	Y		Y			Y			Y								
Latvia	Y		Y	Y			Y	Y		Y	Y							
Lebanon	Y	Y		Y	Y		Y			Y								
Lesotho	Y	Y		Y			Y			Y								
Liberia	Y	Y		Y	Y		Y	Y		Y						Y	Y	
Libya	Y			Y			Y			Y								
Lithuania**	Y		Y	Y			Y	Y		Y	Y							
Luxembourg	Y		Y	Y	S	Y	Y			Y	Y		S		S	S	S	

<sup>7</sup> Indirect Fluorescent Antibody Test (IFAT).

<sup>8</sup> Rapid plasma reagin (RPR).

<sup>9</sup> Western blot, PCR.

<sup>10</sup> Any one of the methods (smear microscopy or malaria Ag test) is acceptable.

<sup>11</sup> Venereal Disease Research Laboratory (VDRL) test.

<sup>12</sup> TPHA if ELISA and/or RPR reactive.

<sup>13</sup> Immunofluorescent.

Country	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria			HTLV I/II	
	Ab	Ag	NAT	HBSAg	Anti-HBc Ab	NAT	Anti-HCV Ab	Ag	NAT	Serological testing	Others	Ab	Others	Smear microscopy	Ag	Others	Ab	Others
Madagascar	Y			Y			Y			Y								
Malawi	Y	Y		Y			Y			Y			Y					
Malaysia	Y	S	S	Y		S	Y	S	S	Y			S					
Maldives	Y			Y			Y			Y			Y					
Mali	Y	S		Y			Y	S		Y								
Malta	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Marshall Islands*	Y			Y			Y			Y								
Mauritania	Y	Y		Y			Y	Y		Y			Y					
Mauritius	Y	Y		Y	S		Y			Y			Y					
Mexico	Y			Y			Y			Y			Y	Y	S			
Micronesia (Federated States of)	Y			Y			Y			Y			Y					
Monaco	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mongolia	Y		Y	Y		Y	Y		Y	Y								
Montenegro	Y	Y		Y			Y			Y			Y					
Morocco	Y	Y		Y			Y	Y		Y			Y					
Mozambique	Y	Y		Y			Y			Y			Y					
Myanmar	Y	S		Y			Y			Y			Y					
Namibia	Y		Y	Y		Y	Y		Y	Y								
Nauru <sup>§</sup>	Y			Y			Y			Y			Y					
Nepal	Y						Y			Y			Y					
Netherlands	Y		Y	Y	Y	Y	Y		Y	Y					S <sup>14</sup>	Y	S <sup>15</sup>	
New Zealand	Y		Y	Y		Y	Y		Y	Y			S			S <sup>16</sup>	S	
Nicaragua	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Niger	Y	Y		Y			Y			Y			Y					
Nigeria	Y	Y		Y	Y		Y	Y		Y			Y					
Niue	Y			Y			Y			Y			Y					
Norway**	Y			Y	S		Y						S					
Oman	Y	Y		Y	Y		Y			Y			Y					
Pakistan	Y	Y		Y			Y			Y			Y			Y		
Palau	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Panama	Y	Y		Y	Y		Y	Y		Y			Y			Y		
Papua New Guinea	Y			Y						Y								
Paraguay	Y	Y		Y	Y		Y			Y			Y	Y			Y	
Peru	Y	S		Y	Y		Y			Y					S		Y	
Philippines	Y	Y		Y	Y		Y			Y					Y	S		
Poland	Y		Y	Y		Y	Y		Y	Y								
Portugal	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				S <sup>17</sup>	S		
Qatar	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				Y	Y		
Republic of Korea	Y		Y	Y			Y	Y		Y	Y					S <sup>18</sup>	S	S <sup>19</sup>
Republic of Moldova	Y	Y	Y	Y	Y		Y		Y	Y								
Romania	Y	Y	Y	Y			Y	Y		Y							Y	
Russian Federation	Y	Y	S	Y		S	Y		S	Y								
Rwanda	Y	Y		Y			Y			Y			Y					
Saint Kitts and Nevis	Y			Y			Y			Y			Y				Y	
Saint Lucia	Y	Y		Y			Y			Y			Y					
Saint Vincent and the Grenadines	Y	Y		Y			Y			Y			Y				Y	
Samoa	Y			Y	No	No	Y			Y								
San Marino	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	Y			Y			Y			Y			Y			Y		
Saudi Arabia	Y	Y	Y	Y	Y	Y	Y		Y	Y					Y	Y <sup>20</sup>	Y	Y <sup>21</sup>
Senegal	Y	Y		Y			Y			Y			Y					
Serbia	Y	Y		Y			Y			Y			Y					
Seychelles	Y	Y		Y			Y	Y		Y			Y					
Sierra Leone	Y	Y		Y	S		Y	Y		Y			Y					

<sup>14</sup> Antimalaria Ab: "Malaria antibody screening was performed for re-entry purposes of selected donors only."

<sup>15</sup> Ab testing until 30/6/2013, from 1/7/2013 new donors only.

<sup>16</sup> Malaria antibody.

<sup>17</sup> Immunological test or PCR test.

<sup>18</sup> Ab.

<sup>19</sup> HTLV RNA test.

<sup>20</sup> ELISA.

<sup>21</sup> Western Blot (confirmatory test for donations with reactive result).

	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria			HTLV I/II	
	Ab	Ag	NAT	HBsAg	Anti-HBc Ab	NAT	Anti-HCV Ab	Ag	NAT	Serological testing	Others	Ab	Others	Smear microscopy	Ag	Others	Ab	Others
<b>Country</b>																		
Singapore	Y		Y	Y		Y	Y		Y								S <sup>22</sup>	
Slovakia	Y	Y		Y	Y		Y					Y <sup>23</sup>						
Slovenia	Y	Y	Y	Y		Y	Y		Y	Y								
Solomon Islands**	Y			Y			Y					Y						
Somalia	Y	Y		Y	Y		Y	Y				Y						
South Africa	Y		Y	Y	S	Y	Y		Y	Y		Y <sup>24</sup>						
South Sudan	Y			Y			Y					Y						
Spain	Y		Y	Y		Y	Y		Y	Y		S			S	S		
Sri Lanka	Y	Y		Y			Y					Y			Y			
Sudan	Y			Y			Y					Y						
Suriname	Y	Y		Y			Y					Y		Y	Y		Y	
Swaziland**	Y	Y		Y			Y					Y						
Sweden	Y	Y		Y	S		Y					Y		S			S <sup>25</sup>	
Switzerland	Y		Y	Y		Y	Y		Y	Y		S		S		S		
Syrian Arab Republic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tajikistan	Y	Y	Y	Y		Y	Y	Y	Y	Y				Y				
Thailand	Y	Y	Y	Y	S	Y	Y		Y	Y								
The former Yugoslav Republic of Macedonia	Y	Y		Y				Y		Y								
Timor-Leste	Y	Y		Y	Y		Y	Y		Y		Y		Y	Y	Y	Y	
Togo	Y	Y		Y			Y			Y								
Tonga	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trinidad and Tobago	Y	Y		Y			Y			Y		Y		Y			Y	
Tunisia	Y	Y		Y			Y	Y		Y								
Turkey	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y					
Turkmenistan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuvalu	Y			Y			Y			Y <sup>26</sup>				S				
Uganda	Y	Y		Y	Y		Y	Y		Y								
Ukraine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
United Arab Emirates	Y	Y	Y	Y	Y	Y	Y		Y	Y							Y	
United Kingdom of Great Britain and Northern Ireland	Y	Y	Y	Y	S	Y	Y		Y	Y		S			S <sup>27</sup>	Y		
United Republic of Tanzania	Y	Y		Y			Y	Y										
United States of America	Y		Y	Y	Y	Y	Y	Y	Y	Y		S				Y		
Uruguay	Y	Y		Y	Y		Y			Y		Y				Y		
Uzbekistan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vanuatu	Y			Y			Y			Y				Y				
Venezuela (Bolivarian Republic of)*		Y		Y	Y		Y	Y		Y		Y		Y			Y	
Viet Nam	Y	Y		Y			Y			Y				Y				
Yemen**	Y	Y		Y	Y		Y			Y						Y <sup>28</sup>		
Zambia	Y	Y		Y			Y			Y								
Zimbabwe	Y	Y		Y			Y			Y								

<sup>22</sup>Malaria antibody and PCR test for at-risk donors, i.e. donors who had visited malaria endemic areas.

<sup>23</sup>RPR, TPHA.

<sup>24</sup>VDRL for confirmation.

<sup>25</sup>New donors are tested for HTLV I/II but they do not donate blood (only blood sample) during the first visit.

<sup>26</sup>RPR.

<sup>27</sup>Malaria antibody.

<sup>28</sup>Ab.

## Annex 5

# Blood centres that perform laboratory screening of blood donations 2011–2013

... Not reported/not available.

— No response.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Afghanistan	2011	16	0
	2012	15	0
	2013	14	0
Albania	2011	1	0
	2012	1	0
	2013	1	0
Algeria	2011	191	0
	2012	195	...
	2013	200	0
Andorra	2011	—	—
	2012	—	—
	2013	—	—
Angola	2011	117	—
	2012	130	1
	2013	139	1
Antigua and Barbuda	2011	3	1
	2012	—	—
	2013	—	—
Argentina	2011	283	174 <sup>1</sup>
	2012	160	130
	2013	160	145
Armenia	2011	13	0
	2012	14	1
	2013	13	—
Australia	2011	4 <sup>2</sup>	4
	2012	4	4
	2013	4	4
Austria	2011	—	—
	2012	—	—
	2013	—	—
Azerbaijan	2011	—	—
	2012	—	—
	2013	—	—
Bahamas	2011	—	—
	2012	—	—
	2013	3	3
Bahrain	2011	3	2
	2012	3	3
	2013	3	3
Bangladesh	2011	253	27
	2012	274	11
	2013	290	67
Barbados	2011	—	—
	2012	1	1
	2013	—	—
Belarus	2011	20	20
	2012	—	—
	2013	—	—
Belgium	2011	6	6
	2012	6	6
	2013	6	6
Belize	2011	1	1
	2012	1	1
	2013	1	1

<sup>1</sup> All institutions in the public sector participate in the external quality assessment scheme (EQAS).

<sup>2</sup> Prior to October 2011, there were five blood centres performing laboratory screening.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Benin	2011	40	
	2012	40	40
	2013	40	40
Bhutan	2011	27	27
	2012	12	12
	2013	27	27
Bolivia	2011	18	18
	2012	...	...
	2013	18	18
Bosnia and Herzegovina	2011	—	—
	2012	—	—
	2013	—	—
Botswana	2011	2	2
	2012	2	2
	2013	2	2
Brazil	2011	...	...
	2012	...	... <sup>3</sup>
	2013	—	—
Brunei Darussalam	2011	1	1
	2012	1	1
	2013	1	1
Bulgaria	2011	6	6
	2012	6	6
	2013	—	—
Burkina Faso	2011	57	4
	2012	19	0
	2013	42	4 <sup>4</sup>
Burundi	2011	8	0
	2012	5	0
	2013	5	0
Cambodia	2011	26	22
	2012	22	22
	2013	22	0
Cameroon	2011	—	—
	2012	15	...
	2013	55	...
Canada	2011	2	2
	2012	2	2
	2013	2	2
Canada (CBS)	2013	2	2
Cape Verde	2011	2	2
	2012	2	2
	2013	2	1
Central African Republic	2011	—	—
	2012	1	0
	2013	1	1
Chad	2011	42	0
	2012	55	0
	2013	52	0
Chile	2011	19	19
	2012	19	19
	2013	20	20
China	2011	452	452
	2012	411	396
	2013	422	422
Colombia	2011	94	94
	2012	87	87
	2013	87	87
Comoros	2011	5	1
	2012	5	1
	2013	5	1

<sup>3</sup> It is mandatory that the blood service that performs qualification tests on donors' blood regularly participates in at least one external quality control programme for serology – Decree 1353/2011.

<sup>4</sup> EQA only for HIV testing.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Congo	2011	19	8
	2012	28	0
	2013	29	0
Cook Islands	2011	1	1
	2012	1	1
	2013	1	1
Costa Rica	2011	—	—
	2012	34	34
	2013	33	33
Côte d'Ivoire	2011	2	2
	2012	3	3
	2013	3	3
Croatia	2011	13	13
	2012	12	12
	2013	...	...
Cuba	2011	—	—
	2012	...	...
	2013	46	46
Cyprus	2011	—	—
	2012	—	—
	2013	5	...
Czech Republic	2011	53	53
	2012	56	56
	2013	51	51
Democratic People's Republic of Korea	2011	12	...
	2012	12	...
	2013	...	...
Democratic Republic of the Congo	2011	1 380	478
	2012	1 459	626
	2013	1 459	889 <sup>5</sup>
Denmark	2011	5	5
	2012	5	5
	2013	5	5
Djibouti	2011	...	...
	2012	—	—
	2013	—	—
Dominica	2011	...	...
	2012	1	1
	2013	1	1
Dominican Republic	2011	—	—
	2012	...	...
	2013	...	...
Ecuador	2011	—	—
	2012	...	...
	2013	21	21
Egypt	2011	28	9
	2012	28	17
	2013	28	17
El Salvador	2011	20	20
	2012	16	16
	2013	16	16
Equatorial Guinea	2011	—	—
	2012	—	—
	2013	—	—
Eritrea	2011	1	1
	2012	13	1
	2013	1	1
Estonia	2011	3	3
	2012	4	4
	2013	2	2

<sup>5</sup> There are three levels of blood services in the Democratic Republic of the Congo: National Blood Transfusion Centre (CNTS) at national level; provincial (regional) blood transfusion centres (CPTS) at middle level; and hospital blood banks (CHRTS) at peripheral level. For the EQA, hospital blood banks send samples to the regional blood transfusion centre, and the regional blood transfusion centre sends samples to the National Blood Transfusion Centre for retesting. Testing includes HIV, hepatitis (B, C) and syphilis, and blood grouping with the frequency of twice a year. The National Blood Transfusion Centre sends samples to the national laboratory of the HIV control programme for retesting for HIV.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Ethiopia	2011	13	0
	2012	12	1
	2013	25	1
Fiji	2011	7	7
	2012	13	3
	2013	—	—
Finland	2011	1	1
	2012	1	1
	2013	1	1
France	2011	18	18
	2012	18	18
	2013	18	18
Gabon	2011	2	0
	2012	2	0
	2013	1	0
Gambia	2011	9	...
	2012	11	0
	2013	...	...
Georgia	2011	8	7
	2012	14	9
	2013	6	6
Germany	2011	—	—
	2012	—	—
	2013	...	...
Ghana	2011	6	6
	2012	155	0
	2013	103	0
Greece	2011	89 <sup>6</sup>	4
	2012	88	17
	2013	88	21
Grenada	2011	—	—
	2012	1	...
	2013	—	—
Guatemala	2011	22	1
	2012	31	1
	2013	31	1
Guinea	2011	37	1 <sup>7</sup>
	2012	26	26
	2013	38	38 <sup>8</sup>
Guinea-Bissau	2011	7	7 <sup>9</sup>
	2012	—	—
	2013	7	7
Guyana	2011	1	1
	2012	1	1
	2013	1	1
Haiti	2011	1	0
	2012	—	—
	2013	1	...
Honduras	2011	20	2
	2012	18	2
	2013	22	2 <sup>10</sup>
Hungary	2011	...	...
	2012	2	2
	2013	—	—
Iceland	2011	1	1
	2012	1	1
	2013	—	—
India	2011	...	...
	2012	2 545	290
	2013	2 545	300

<sup>6</sup> Routine serological testing is performed by 89 blood establishments; NAT testing for HIV, HCV, and HBV is performed in nine blood centres.

<sup>7</sup> Only the national centre (CNTS) participated in EQA for TTIs testing.

<sup>8</sup> All blood services participated in EQA for HIV testing, but not for the testing of other TTIs.

<sup>9</sup> All samples were screened for TTI and some samples were selected for external quality control in the National Laboratory of Public Health.

<sup>10</sup> Blood centres of the Honduran Red Cross: one in Tegucigalpa, one in San Pedro Sula.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Indonesia	2011	589	...
	2012	374	...
	2013	375	50
Iran (Islamic Republic of)	2011	34	34
	2012	34	34
	2013	34	34
Iraq	2011	41	41
	2012	—	—
	2013	—	—
Ireland	2011	2	2
	2012	1	1
	2013	—	—
Israel	2011	—	—
	2012	8	8
	2013	8	8
Italy	2011	169	169
	2012	...	...
	2013	169	169
Jamaica	2011	1	1
	2012	1	1
	2013	1	1
Japan	2011	12 <sup>11</sup>	...
	2012	7	...
	2013	9	... <sup>12</sup>
Jordan	2011	4	4
	2012	4	4
	2013	4	4
Kazakhstan	2011	18	2
	2012	19	19
	2013	18	18
Kenya	2011	6	6
	2012	6	6
	2013	6	6
Kiribati	2011	3	1
	2012	—	—
	2013	—	—
Kuwait	2011	1	1
	2012	—	—
	2013	—	—
Kyrgyzstan	2011	1	1
	2012	6	1
	2013	1	1
Lao People's Democratic Republic	2011	15	1
	2012	16	16
	2013	16	1
Latvia	2011	1	1
	2012	1	1
	2013	1	...
Lebanon	2011	—	—
	2012	—	—
	2013	52	...
Lesotho	2011	1	1
	2012	1	1
	2013	1	1
Liberia	2011	2	0
	2012	...	... <sup>13</sup>
	2013	30	...
Libya	2011	—	—
	2012	—	—
	2013	...	...
Lithuania	2011	—	—
	2012	4	4
	2013	—	—

<sup>11</sup> Ten blood centres and two NAT centres.

<sup>12</sup> All the nine screening laboratories of the Japanese Red Cross Society Blood Programme participated in the national EQA for (HBV, HCV, HIV) NAT screening. However, there is no EQA scheme for serological tests.

<sup>13</sup> At the two regional blood banks and donation centres both rapid testing and ELISA are done; at the 38 facility blood banks only rapid testing is done.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Luxembourg	2011	1	1
	2012	1	1
	2013	1	1
Madagascar	2011	43	43
	2012	43	43
	2013	43	43
Malawi	2011	61	1
	2012	62	1
	2013	69	1
Malaysia	2011	17	17
	2012	17	17
	2013	17	17
Maldives	2011	65	1
	2012	...	...
	2013	2	2
Mali	2011	9	3
	2012	—	—
	2013	7	7
Malta	2011	—	—
	2012	—	—
	2013	—	—
Marshall Islands	2011	2	2
	2012	—	—
	2013	—	—
Mauritania	2011	13	1
	2012	13	1
	2013	13	...
Mauritius	2011	1	1
	2012	1	1
	2013	1	1
Mexico	2011	558	375
	2012	556	375
	2013	556	375
Micronesia (Federated States of)	2011	5	4
	2012	5	4
	2013	4	4
Monaco	2011	—	—
	2012	—	—
	2013	—	—
Mongolia	2011	26	26
	2012	26	26
	2013	27	27
Montenegro	2011	7	0
	2012	7	1
	2013	7	1
Morocco	2011	16	16
	2012	16	16
	2013	16	16
Mozambique	2011	153	60
	2012	153	25
	2013	153	25
Myanmar	2011	308	2 <sup>14</sup>
	2012	334	2
	2013	334	2
Namibia	2011	1	1
	2012	1	1
	2013	1	1
Nauru	2011	1	1
	2012	—	—
	2013	—	—
Nepal	2011	86	14
	2012	86	45 <sup>15</sup>
	2013	100	42

<sup>14</sup> All testing laboratories participate in national EQAS for HIV; two services participate in international EQAS for all TTI; and 33 services participate in national EQAS for syphilis.

<sup>15</sup> The Central Blood Transfusion Service participates regularly in the EQAS system with NRL Australia. The hospital blood transfusion units of Kathmandu valley participated in the EQAS system run by the National Public Health Laboratory of the Nepal Government.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Netherlands	2011	1	1
	2012	1	1
	2013	1	1
New Zealand	2011	2	2
	2012	2	2
	2013	2	2
Nicaragua	2011	—	—
	2012	...	...
	2013	...	...
Niger	2011	5	3
	2012	5	0
	2013	5	0
Nigeria	2011	8	8
	2012	10	0
	2013	18	0
Niue	2011	1	1
	2012	1	1
	2013	0	0
Norway	2011	4 444	44
	2012	33	33
	2013	—	—
Oman	2011	...	...
	2012	14	1
	2013	18	15
Pakistan	2011	...	6
	2012	203	6
	2013	319	6
Palau	2011	—	—
	2012	—	—
	2013	—	—
Panama	2011	22	10
	2012	27	
	2013	27	
Papua New Guinea	2011	35	1
	2012	33	0
	2013	36	1
Paraguay	2011	6	5
	2012	4	4
	2013	7	4
Peru	2011	—	—
	2012	88	88
	2013	289	280
Philippines	2011	217	146
	2012	1	124
	2013	74	74
Poland	2011	23	23
	2012	23	23
	2013	21	21
Portugal	2011	...	...
	2012	21	21
	2013	32	...
Qatar	2011	—	—
	2012	—	—
	2013	1	1
Republic of Korea	2011	3 <sup>16</sup>	3
	2012	3	3
	2013	5	5
Republic of Moldova	2011	2	2
	2012	2	2
	2013	2	2
Romania	2011	42	41
	2012	42	42
	2013	42	42

<sup>16</sup> Screening testing for blood collected in 15 Korean Red Cross blood centres is performed in three blood laboratory centres.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Russian Federation	2011	552	552
	2012	516	516
	2013	458	458
Rwanda	2011	1	1
	2012	1	1
	2013	1 <sup>17</sup>	1
Saint Kitts and Nevis	2011	1	1
	2012	—	—
	2013	1	1
Saint Lucia	2011	1	1
	2012	—	—
	2013	1	1
Saint Vincent and the Grenadines	2011	...	...
	2012	1	1
	2013	...	...
Samoa	2011	2	1
	2012	2	1
	2013	2	2
San Marino	2011	—	—
	2012	—	—
	2013	—	—
Sao Tome and Principe	2011	—	—
	2012	—	—
	2013	1	1
Saudi Arabia	2011	160	24
	2012	...	...
	2013	163	64
Senegal	2011	17	17
	2012	18	18
	2013	21	18
Serbia	2011	47	1 <sup>18</sup>
	2012	47 <sup>19</sup>	3 <sup>20</sup>
	2013	46	3
Seychelles	2011	—	—
	2012	1	1
	2013	1	0
Sierra Leone	2011	29	1
	2012	—	—
	2013	30	1
Singapore	2011	1	1
	2012	1	1
	2013	1	1
Slovakia	2011	41	41
	2012	36	36
	2013	36	36
Slovenia	2011	2	2
	2012	2	2
	2013	2	2
Solomon Islands	2011	1	1
	2012	1	1
	2013	—	—
Somalia	2011	38	30
	2012	35	35
	2013	31	31
South Africa	2011	3	3
	2012	3	3
	2013	3	3
South Sudan	2011	25	0
	2012	7	0
	2013	7	0

<sup>17</sup> In Rwanda, the TTI testing is centralized in the national centre.

<sup>18</sup> The Blood Transfusion Institute of Serbia (which collects, tests and processes approximately 40% of blood in Serbia) was the only laboratory performing screening that participated in the EQAS for TTIs in 2011.

<sup>19</sup> Three major regional centres and 44 hospital blood banks perform laboratory screening for TTIs, i.e. all blood transfusion establishments in Serbia.

<sup>20</sup> Three regional blood centres participated in the EQAS for TTIs.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
Spain	2011	20	20
	2012	20	20
	2013	20	20
Sri Lanka	2011	14	11
	2012	16	12
	2013	16	12
Sudan	2011	16	0
	2012	352	0
	2013	20	0
Suriname	2011	—	—
	2012	1	1
	2013	1	1
Swaziland	2011	1	1
	2012	1	1
	2013	—	—
Sweden <sup>21</sup>	2011	...	...
	2012	...	...
	2013	29	29
Switzerland	2011	9	9
	2012	9	4
	2013	13	13
Syrian Arab Republic	2011	—	—
	2012	—	—
	2013	—	—
Tajikistan	2011	4	4
	2012	4	4
	2013	5	1
Thailand	2011	14 <sup>22</sup>	14
	2012	...	...
	2013	...	...
The former Yugoslav Republic of Macedonia	2011	4	0
	2012	3	0
	2013	3	0
Timor-Leste	2011	—	—
	2012	1	1
	2013	6	6
Togo	2011	3	2
	2012	3	2
	2013	2	0
Tonga	2011	—	—
	2012	—	—
	2013	—	—
Trinidad and Tobago	2011	1	1
	2012	...	...
	2013	1	1
Tunisia	2011	26	0
	2012	32	0
	2013	32	3
Turkey	2011	4	4
	2012	60	60
	2013	...	...
Turkmenistan	2011	—	—
	2012	—	—
	2013	—	—
Tuvalu	2011	1	1
	2012	1	1
	2013	1	1
Uganda	2011	7	7
	2012	7	7
	2013	7	7
Ukraine	2011	—	—
	2012	—	—
	2013	—	—

<sup>21</sup> Blood centres do not perform any laboratory screening of TTIs; the screenings are performed by the microbiological departments of the university hospitals.

<sup>22</sup> 14 blood centres perform laboratory screening – NBC, Bangkok, and 13 RBCs in other provinces.

Country	Data year	No. blood centres that perform laboratory screening of blood donations for TTI	No. blood centres performing laboratory screening that participate in EQAS for TTI
United Arab Emirates	2011	5	5
	2012	4	4
	2013	4	4
United Kingdom of Great Britain and Northern Ireland	2011	4	4
	2012	4	4
	2013	4	4
United Republic of Tanzania	2011	7	4
	2012	7	7
	2013	7	7
United States of America	2011	128	128
	2012 <sup>23</sup>	48	48
	2013	...	...
Uruguay	2011	—	—
	2012	34	29
	2013	29	29
Uzbekistan	2011	—	—
	2012	—	—
	2013	—	—
Vanuatu	2011	4	4
	2012	—	—
	2013	5	2
Venezuela (Bolivarian Republic of)	2011	279	153
	2012	...	...
	2013	—	—
Viet Nam	2011	67	42
	2012	67	61
	2013	72	72
Yemen	2011	—	—
	2012	2	0
	2013	—	—
Zambia	2011	9	9
	2012	9	9
	2013	9	9
Zimbabwe	2011	1	1
	2012	1	1
	2013	1	1

<sup>23</sup> Partial data.

## Annex 6

# Proportions (%) of donations (whole blood and apheresis) that were screened for transfusion-transmissible infections (TTIs)

... Not reported/not available.

— No response.

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
Afghanistan	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Albania	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Algeria	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Andorra	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Angola	2011	100	100	100	100	100		
	2012	100	100	100	100	100		
	2013	100	100	100	100	100		
Antigua and Barbuda	2011	100	100	100	100			
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Argentina	2011	100	100	100	100	100	100	
	2012	100	100	100	100	100	100	
	2013	100	100	100	100	100	100	
Armenia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Australia	2011	100	100	100	100	0	8.56	100
	2012	100	100	100	100		9.04	100
	2013	100	100	100	100		8.17	100
Austria	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Azerbaijan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Bahamas	2011	100	100	100	100			100
	2012	100	100	100	100			100
	2013	100	100	100	100			100
Bahrain	2011	100	100	100	100	100	1	
	2012	100	100	100	100	100	0.5	
	2013	100	100	100	100	100		
Bangladesh	2011	100	100	100	100			
	2012	100	100	100	100	100		
	2013	100	100	100	100	100		
Barbados	2011	—	—	—	—	—	—	—
	2012	100	100	100	100	100	100	
	2013	—	—	—	—	—	—	—
Belarus	2011	100	100	100	100			
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Belgium	2011	100	100	100	100			
	2012	100	100	100	100	100	100	
	2013	100	100	100	100	100	100	

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
Belize	2011	100	100	100	100	100	100	
	2012	100	100	100	100	100	100	
	2013							
Benin	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Bhutan	2011	100	100	100	100	6		
	2012	100	100	100	100	15		
	2013	100	100	100	100	23		
Bolivia	2011	100	100	100	100	100		
	2012	100	100	100	100	100		
	2013	91.66	91.66	91.66	91.66	91.667		
Bosnia and Herzegovina	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Botswana	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Brazil	2011	100	100	100	100	100	100	100
	2012	100	100	100	100	100	100	100
	2013	—	—	—	—	—	—	—
Brunei Darussalam	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Bulgaria	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	—	—	—	—	—	—	—
Burkina Faso	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Burundi	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Cambodia	2011							
	2012	100	100	100	100	1		
	2013	100	100	100	100			
Cameroon	2011	—	—	—	—	—	—	—
	2012	...	...	...	...	...		
	2013	96.35	96.35	96.35	96.35			
Canada	2011	100	100	100	100	1.41	100	
	2012	100	100	100	100	1.52	100	
	2013	100	100	100	100	1.58	100	
Cape Verde	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Central African Republic	2011	—	—	—	—	—	—	—
	2012							
	2013	100	100	100	100			
Chad	2011	100	99.86	94	98			
	2012	100	98	96.71	96.72			
	2013	100	98.22	96.51	96.09			
Chile	2011	100	100	100	100	100	100	
	2012	100	100	100	100	100	100	
	2013	97.14	97.57	96.4	96.8	97.67	97.59	
China	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Colombia	2011	100	100	100	100	100	26.2	68.2
	2012	100	100	100	100	100	18.1	70.53
	2013	100	100	100	100	100	...	75.44
Comoros	2011	100	100	95.65	83.73			
	2012	100	100	97.5	100			
	2013	100	100	92	95.65			
Congo	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
Cook Islands	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Costa Rica	2011	100	100	100	100	100		100
	2012	100	100	100	100	100		100
	2013	100	100	100	100	100		100
Côte d'Ivoire	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Croatia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Cuba	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Cyprus	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100			
Czech Republic	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Democratic People's Republic of Korea	2011	100	100	100	100	24		
	2012	100	100	100	100	16.5		
	2013	100	100	100	100			
Democratic Republic of the Congo	2011	100	84.9	66.4	81.7			
	2012	99.54	86.82	71.81	77.63			
	2013	99.76	94.08	88.50	87.17			
Denmark	2011	100	100	100	0	0		0
	2012	100	100	100				
	2013	100	100	100				
Djibouti	2011	...	...	...	...			
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Dominica	2011	100	100	...	100			100
	2012	100	100	...	100			100
	2013	100	100	...	100			100
Dominican Republic	2011	100	100	100	100			100
	2012	100	100	100	100			100
	2013	100	100	100	100			100
Ecuador	2011	100	100	100	100	100	...	...
	2012	100	100	100	100	100		11.94
	2013	100	100	100	100	96.23		11.94
Egypt	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
El Salvador	2011	100	100	100	100	100		
	2012	100	100	100	100	100		
	2013	100	100	100	100	100		
Equatorial Guinea	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Eritrea	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Estonia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Ethiopia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Fiji	2011	100	100	100	100	0	0	100
	2012	100	100	100	100			
	2013	—	—	—	—			
Finland	2011	100	100	100	100			
	2012	100	100	100	100		0.2	
	2013	100	100	100	100	0.16		

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
France	2011	100	100	100	100			100
	2012	100	100	100	100			100
	2013	100	100	100	100			100
Gabon	2011	100	100	100	100	0	0	100
	2012	100	100	100	100			100
	2013	100	100	100	100	0		100
Gambia	2011	....	...	...	...			
	2012	100	26.85	17.46	...			
	2013	...	...	...	...			
Georgia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Germany	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100	100	100	100
Ghana	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Greece	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Grenada	2011	—	—	—	—	—	—	—
	2012	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—
Guatemala	2011	100	100	100	100	100		
	2012	100	100	100	100	100		
	2013	100	100	100	100	100		
Guinea	2011	100	95.5	63.32	36.02			
	2012	100	99.8	100	100			
	2013	100	100	100	100			
Guinea-Bissau	2011	100	100	100	100			
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100	...	...	...
Guyana	2011	100	100	100	100	100	100	100
	2012	100	100	100	100	...	...	100
	2013	100	100	100	100	...	...	100
Haiti	2011	100	100	100	100			...
	2012	100	100	100	100			100
	2013	100	100	100	100			100
Honduras	2011	100	100	100	100	100		92
	2012	100	100	100	100	100		94.02
	2013	100	100	100	100	100		96.23
Hungary	2011	—	—	—	—	—	—	—
	2012	100	100	100	100			
	2013	—	—	—	—	—	—	—
Iceland	2011	100	100	100	0	0	0.3	0
	2012	100	100	100			0.2	
	2013	—	—	—	—	—	—	—
India	2011	...	...	...	...	...	...	...
	2012							
	2013	100	100	100	100		100	
Indonesia	2011	99.99	99.98	99.92	99.95			
	2012	100	100	100	100		3.79	
	2013	100	100	100	100		3.658	
Iran (Islamic Republic of)	2011	100	100	100	100			18.5
	2012	100	100	100	100			19.16
	2013	100	100	100	100			19.65
Iraq	2011	91.58	95.51	99.05	94.88			
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Ireland	2011	100	100	100	100			100
	2012	100	100	100	100			100
	2013	—	—	—	—	—	—	—
Israel	2011	—	—	—	—	—	—	—
	2012	100	100	100	100			100
	2013	100	100	100	100			100

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
Italy	2011	100	100	100	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100	—	—	—
Jamaica	2011	100	100	100	100	—	100	—
	2012	100	100	100	100	—	100	—
	2013	98.27	98.27	98.27	98.27	—	98.27	—
Japan	2011	100	100	100	100	—	—	100
	2012	100	100	100	100	—	—	100
	2013	100	100	100	100	0.09	0.09	100
Jordan	2011	100	100	100	100	—	—	—
	2012	100	100	100	100	—	—	—
	2013	100	100	100	100	—	—	—
Kazakhstan	2011	100	100	100	100	—	—	—
	2012	99.97	100	99.97	99.97	—	—	—
	2013	100	100	100	100	—	—	—
Kenya	2011	100	100	100	100	—	—	—
	2012	100	100	100	100	—	—	—
	2013	100	100	100	100	—	—	—
Kiribati	2011	100	100	100	100	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Kuwait	2011	100	100	100	100	—	13.6	100
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Kyrgyzstan	2011	...	...	...	...	—	...	...
	2012	100	100	100	100	—	100	100
	2013	100	100	100	100	—	58.5	—
Lao People's Democratic Republic	2011	100	100	100	100	—	—	—
	2012	100	100	100	100	—	—	—
	2013	—	—	—	—	—	—	—
Latvia	2011	100	100	100	100	—	—	—
	2012	100	100	100	100	—	—	—
	2013	100	100	100	100	—	—	—
Lebanon	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	...	...	...	...	—	—	—
Lesotho	2011	100	100	100	100	—	—	—
	2012	100	100	100	100	—	—	—
	2013	100	100	100	100	—	—	—
Liberia	2011	...	...	...	...	—	—	—
	2012	—	—	—	—	—	—	—
	2013	100	100	100	82.1	—	100	—
Libya	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	...	...	...	...	—	—	—
Lithuania	2011	—	—	—	—	—	—	—
	2012	100	100	100	100	—	—	—
	2013	—	—	—	—	—	—	—
Luxembourg	2011	100	100	100	100	0	6.1	4.7
	2012	100	100	100	100	0	3	5
	2013	100	100	100	100	—	7	3
Madagascar	2011	100	100	100	100	—	—	—
	2012	100	100	100	100	—	—	—
	2013	100	100	100	100	—	—	—
Malawi	2011	100	100	100	100	—	100	—
	2012	100	100	75	100	—	100	—
	2013	100	100	100	100	—	100	—
Malaysia	2011	100	100	100	100	100	100	100
	2012	100	100	100	100	—	—	—
	2013	100	100	100	100	—	—	—
Maldives	2011	100	100	99.98	99.96	—	—	—
	2012	100	100	100	100	—	—	—
	2013	100	100	100	100	—	—	—
Mali	2011	100	100	100	100	—	—	—
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100	—	—	—

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
Malta	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Marshall Islands	2011	100	100	...	...			
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Mauritania	2011	100	100	100	100			
	2012	...	...	...	...			
	2013	100	100	100	100			
Mauritius	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Mexico	2011	99	99	99	99	89		
	2012	98.43	98.36	98.47	98.20	90.69		
	2013	98.45	98.45	98.44	98.27	91.85		
Micronesia (Federated States of)	2011	100	100	94	100			
	2012	100	100	100	100			
	2013	100	100	93.96	100			
Monaco	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Mongolia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Montenegro	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Morocco	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Mozambique	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Myanmar	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Namibia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Nauru	2011	...	...	...	...			
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Nepal	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Netherlands	2011	100	100	100	100	0	100	
	2012	100	100	100	100	1	100	
	2013	100	100	100	100		55.88	
New Zealand	2011	100	100	100	100	0.16	3.24	10.02
	2012	100	100	100	100	0.2	3.69	9.56
	2013	100	100	100	100	0.18	3.55	10.53
Nicaragua	2011	100	100	100	100	100		
	2012	100	100	100	100	100		
	2013	100	100	100	100	100		
Niger	2011	100	100	100	100	100		
	2012	100	100	100	100	100		
	2013	100	100	100	100	100		
Nigeria	2011	100	100	100	100	100		
	2012	100	100	100	100	100		
	2013	100	100	100	100	100		
Niue	2011	100	100	100	100	100		
	2012	100	100	10	10			
	2013	100	100	100	100			
Norway	2011	100	100	100	100	8	0	0
	2012	100	100	100	100	—	1	—
	2013	—	—	—	—	—	—	—

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
Oman	2011	—	—	—	—	—	—	—
	2012	100	100	100	100			
	2013	100	100	100	100			
Pakistan	2011	97.82	99.99	99.99	63.95		63.94	
	2012	100	100	100	93.7		93.7	
	2013	100	100	100	66		66	
Palau	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Panama	2011	100	100	100	100	100		96.87
	2012	100	100	100	100	100		98.33
	2013	100	100	100	100	100		100
Papua New Guinea	2011	100	100		100			
	2012	100	100		100			
	2013	100	100		100			
Paraguay	2011	100	100	100	100	100		100
	2012	98.99	98.99	98.99	98.99	98.99		98.99
	2013	100	100	100	100	100		100
Peru	2011	94	94	94	94	94	...	93.86
	2012	100	100	100	100	100	5	100
	2013	100	100	100	100	100	100	100
Philippines	2011	90.04	90.62	89.98	89.99			89.94
	2012	91.39	92.38	91.47	91.45			86.41
	2013	93.56	93.68	93.62	93.56			90.15
Poland	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Portugal	2011	100	100	100	100	0		19
	2012	100	100	100	100			12
	2013	100	100	100	100			
Qatar	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100	100	100	100
Republic of Korea	2011	100	100	100	100			50.3
	2012	100	100	100	100			84.1
	2013	100	100	100	100			53.44
Republic of Moldova	2011	100	100	100	100			85.13
	2012	100	100	100	100			53.51
	2013	100	100	100	100			80.32
Romania	2011	100	100	100	100			100
	2012	100	100	100	100			100
	2013	100	100	100	100			100
Russian Federation	2011	100	100	100	100			100
	2012	100	100	100	100			100
	2013	100	100	100	100			
Rwanda	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Saint Kitts and Nevis	2011	100	100	100	100			0
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100			76.13
Saint Lucia	2011	100	100	100	100			100
	2012	100	100	100	100			100
	2013	100	100	100	100			100
Saint Vincent and the Grenadines	2011	100	100	100	100			100
	2012	99.50	99.50	99.50	99.50			99.50
	2013	100	100	100	100			100
Samoa	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
San Marino	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Sao Tome and Principe	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100			

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
Saudi Arabia	2011	100	100	100	100		100	100
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100		100	100
Senegal	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Serbia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Seychelles	2011	—	—	—	—	—	—	—
	2012	100	100	100	100			
	2013	100	100	100	100			
Sierra Leone	2011	...	...	...	...			
	2012	—	—	—	—	—	—	—
	2013	100	100	100	100			
Singapore	2011	100	100	100	100		4	
	2012	100	100	100	100		7.16	
	2013	100	100	100	100		8.92	
Slovakia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Slovenia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Solomon Islands	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	—	—	—	—	—	—	—
Somalia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
South Africa	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
South Sudan	2011	—	—	—	—	—	—	—
	2012	100	100	100	100			
	2013	100	100	100	100			
Spain	2011	100	100	100	100	7.13	0.88	24.46
	2012	100	100	100	100	4.99	1	30.46
	2013	100	100	100	100	3.19	0.65	29.91
Sri Lanka	2011	100	100	100	100		100	
	2012	100	100	100	100		100	
	2013	100	100	100	100		100	
Sudan	2011	...	...	...	...			
	2012	...	...	...	...			
	2013	100	100	100	100			
Suriname	2011	100	100	100	100		100	
	2012	100	100	100	100		100	
	2013	98.39	98.39	98.39	98.39		98.39	
Swaziland	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	—	—	—	—	—	—	—
Sweden	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Switzerland	2011	100	100	100	100			
	2012	100	100	100	100	100	100	100
	2013	100	100	100	100			
Syrian Arab Republic	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Tajikistan	2011	100	100	100	100		100	
	2012	...	...	...	...		...	
	2013	100	100	100	100		100	
Thailand	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
The former Yugoslav Republic of Macedonia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Timor-Leste	2011	—	—	—	—			
	2012	100	100	100	100			
	2013	100	100	100	100			
Togo	2011	100	100	100	91.22			
	2012	100	100	100	66.25			
	2013	100	100	100	66.42			
Tonga	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Trinidad and Tobago	2011	100	100	100	100			100
	2012	100	100	100	100			100
	2013	100	100	100	100			100
Tunisia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Turkey	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Turkmenistan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Tuvalu	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Uganda	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	... —	... —	... —	... —			
Ukraine	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
United Arab Emirates	2011	100	100	100	100		5.9	100
	2012	100	100	100	100			100
	2013	100	100	100	100		100	100
United Kingdom of Great Britain and Northern Ireland	2011	100	100	100	100			100
	2012	100	100	100	100	0.002	1.08	100
	2013	100	100	100	100		0.63	100
United Republic of Tanzania	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
United States of America	2011	100	100	100	100	15.5 <sup>1</sup>		100
	2012	100	100	100	100	100		
	2013	100	100	100	100	22.11		100
Uruguay	2011	100	100	100	100	100		100
	2012	100	100	100	100	100		100
	2013	100	100	100	100	100		100
Uzbekistan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Vanuatu	2011	100	100	100	100		100	
	2012	—	—	—	—	—	—	
	2013	100	100	100	100		100	
Venezuela (Bolivarian Republic of)	2011	100	100	100	100	100		100
	2012	93.38	93.38	93.38	93.38	93.38		93.38
	2013	—	—	—	—	—	—	—
Viet Nam	2011	100	100	100	100		75.8	20.80
	2012	100	100	100	100		95.89	24.93
	2013	100	100	100	100		100	23.5
Yemen	2011	—	—	—	—	—	—	—
	2012	... —	... —	... —	... —	—	—	—
	2013	—	—	—	—	—	—	—

<sup>1</sup> Data from Blood Systems (approximately 8% of the United States blood supply) show that 146 514 donations, or 15.5% of donations received, were screened for Chagas (146 514 out of 945 782 donations).

Country	Data year	HIV1+2	Hepatitis B	Hepatitis C	Syphilis	Chagas disease	Malaria	HTLV I/II
Zambia	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			
Zimbabwe	2011	100	100	100	100			
	2012	100	100	100	100			
	2013	100	100	100	100			

## Annex 7

# Number and proportion of donations tested positive/reactive for TTI markers 2011–2013

... Not reported/not available.

Blank: Not required/not applicable.

— No response.

\* Proportion, expressed as positive/reactive per 100 donations tested.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
Afghanistan	2011	12	52 067	0.02	2 042	52 067	3.92	588	52 067	1.13	331	52 067	0.64
	2012	6	71 397	0.008	2 221	71 397	3.11	610	71 397	0.81	381	71 397	0.54
	2013	4	71 828	0.006	2 081	71 828	2.90	534	71 828	0.74	266	71 828	0.37
Albania	2011	8	25 887	0.03	1 428	25 887	5.51	179	25 887	0.69	18	25 887	0.07
	2012	5	27 499	0.02	1 407	27 499	5.11	228	27 499	0.83	42	27 499	0.15
	2013	10 <sup>1</sup>	29 216	0.03	944	29 216	3.23	183	29 216	0.63	42	29 216	0.14
Algeria	2011	399	452 508	0.09	1 355	452 508	0.30	857	452 508	0.19	1 306	452 508	0.29
	2012	...	...	0.06	...	...	0.31	...	...	0.17	...	...	0.27
	2013	378	496 292	0.08	1 476	496 292	0.30	786	496 292	0.16	1 444	496 292	0.29
Andorra	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Angola	2011	1 772	...	1.98	6 026	...	6.74	514	...	0.57	597	...	0.66
	2012	1 891	98 085	1.93	6 003	98 085	6.12	359	98 085	0.37	900	98 085	0.92
	2013	2 241	154 300	1.45	8 226	154 300	5.33	701	154 300	0.45	1 780	154 300	1.15
Antigua and Barbuda	2011	3	1 195	0.25	18	1 195	1.51	8	1 195	0.67	6	1 195	0.50
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Argentina	2011	2 891	1 111 840	0.26	2 890	1 111 840	0.26	5782	1 111 840	0.52	8228	1 111 840	0.74
	2012	1 796	1 056 710	0.17	1 902	1 056 710	0.18	3 804	1 056 710	0.36	8 664	1 056 710	0.82
	2013	1 718	954 604	0.18	1 623	954 604	0.17	3341	954 604	0.35	8687	954 604	0.91
Armenia	2011	19	13 086	0.15	424	13 086	3.24	61	13 086	0.47	20	13 086	0.15
	2012	9	13 020	0.07	314	13 020	2.41	48	13 020	0.37	20	13 020	0.15
	2013	5 <sup>2</sup>	12 741	0.04	243	12 741	1.90	34	12 741	0.27	11	12 741	0.09
Australia	2011	7	1 362 382	<0.001	116	1 362 382	0.008	81	1 362 382	0.006	8	1 362 382	<0.001
	2012	2	1 311 576	<0.001	94	1 311 576	0.007	82	1 311 576	0.006	10	1 311 576	<0.001
	2013	6	1 290 750	<0.001	103	1 290 750	0.008	66	1 290 750	0.005	3	1 290 750	<0.001
Austria	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Azerbaijan	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Bahamas	2011	10	7 287	0.13	35	7 287	0.48	15	7 287	0.21	70	7 287	0.96
	2012	15	7 638	0.20	39	7 638	0.51	22	7 638	0.29	89	7 638	1.17
	2013	10	7 215	0.14	26	7 215	0.36	18	7 215	0.25	70	7 215	0.97
Bahrain	2011	...	...	0	...	...	0.07	...	...	0.11	...	...	0.33
	2012	2	19 484	0.01	10	19 484	0.05	16	19 484	0.08	18	19 484	0.09
	2013	...	...	0.02	...	...	0.06	...	...	0.08	...	...	0.10
Bangladesh	2011	21	415 372	0.005	4356	415 372	1.05	272	415 372	0.07	179	415 372	0.04
	2012	56	541 682	0.01	5052	541 682	0.93	676	541 682	0.12	399	541 682	0.07
	2013	37	593 774	0.006	...	...	0.87	...	...	0.10	...	...	0.10
Barbados	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	6	5 088	0.12	14	5 088	0.28	12	5 088	0.24	72	5 088	1.42
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Belarus	2011	21	299 772	0.007	...	...	...	...	...	...	...	...	...
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Belgium	2011	3	675 227	<0.001	43	675 227	0.006	22	675 227	0.003	39	675 227	0.006
	2012	10	674 500	0.002	60	674 500	0.009	18	674 500	0.003	46	674 500	0.007
	2013	11	621 865	0.002	51	621 865	0.008	18	621 865	0.003	43	621 865	0.007
Belize	2011	15	4 617	0.32	30	4 617	0.65	22	4 617	0.48	52	4 617	1.13
	2012	13	4 795	0.27	18	4 795	0.38	13	4 795	0.27	72	4 795	1.50
	2013	6	5 120	0.12	12	5 120	0.23	9	5 120	0.18	173	5 120	3.38

<sup>1</sup> The numbers given for HIV and syphilis are confirmed positive results, the reactive results are respectively 22 and 68 (0.075% and 2.32%).

<sup>2</sup> Data for screening of donated blood without confirmation. Blood samples are sent to the national centre to confirm HIV infection.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
Benin	2011	318	64 980	0.49	1 451	64 980	2.23	542	64 980	0.83	376	64 980	0.58
	2012 <sup>3</sup>	960	75 313	1.27	5 988	75 313	7.95	2 188	75 313	2.91	1 034	75 313	1.37
	2013 <sup>4</sup>	1455	77 510	1.88	5 752	77 510	7.42	3 779	77 510	4.88	1 159	77 510	1.50
Bhutan	2011	2	8 175	0.02	51	8 175	0.62	4	8 175	0.04	104	8 175	1.27
	2012	3	6 615	0.05	58	6 615	0.88	2	6 615	0.03	51	6 615	0.77
	2013	6	8 854	0.07	84	8 854	0.94	15	8 854	0.17	54	8 854	0.61
Bolivia	2011	161	79 799	0.25	197	79 763	0.25	264	79 360	0.33	570	78 213	0.71
	2012	193	83 707	0.23	282	83 707	0.34	256	83 707	0.31	569	83 707	0.68
	2013	201	93 629	0.22	258	93 629	0.28	249	93 629	0.27	874	93 629	0.93
Bosnia and Herzegovina	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Botswana	2011	295	16 562	1.78	214	16 562	1.29	108	16 562	0.65	474	16 562	2.86
	2012	331	19 279	1.72	241	19 279	1.25	57	19 279	0.30	312	19 279	1.62
	2013	192	20 264	0.95	199	20 264	0.98	6	20 264	0.03	86	20 264	0.42
Brazil	2011	...	...	0.33	...	...	0.17	...	...	0.32	...	...	0.81
	2012	14 298	3 387 766	0.42	5 486	3 387 766	0.16	10 228	3 387 766	0.30	27 774	3 387 766	0.82
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Brunei Darussalam	2011	0	12 935	0	54	12 935	0.42	42	12 935	0.32	23	12 935	0.18
	2012	0	13 506	0	46	13 506	0.34	60	13 506	0.44	62	13 506	0.46
	2013	3	14 158	0.02	51	14 158	0.36	16	14 158	0.11	66	14 158	0.47
Bulgaria	2011	1	165 255	<0.001	1095	165 255	0.66	116	165 255	0.07	250	165 255	0.15
	2012	5	167 851	0.003	851	167 851	0.51	86	167 851	0.05	217	167 851	0.13
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Burkina Faso	2011	1 903	82 756	2.30	7 983	82 756	9.65	4 226	82 756	5.11	1 862	82 756	2.25
	2012	1 543	73 737	2.09	6 433	73 737	8.72	3 157	73 737	4.28	1 337	73 737	1.81
	2013	2 199	100 716	2.18	9 808	100 716	9.74	4 859	100 716	4.82	1 672	100 716	1.66
Burundi	2011	204	40 700	0.50	1 147	40 700	2.82	713	40 700	1.75	74	40 700	0.18
	2012	262	43 093	0.61	978	43 093	2.27	521	43 093	1.21	24	43 093	0.05
	2013	1305	55 666	2.34	1 999	55 666	3.59	2553	55 666	4.59	178	55 666	0.32
Cambodia	2011	227	46 690	0.49	3 334	46 690	7.14	439	46 690	0.94	502	46 690	1.08
	2012	170	48 298	0.35	3 026	48 298	6.27	426	48 298	0.88	432	48 298	0.89
	2013	89	50 353	0.18	2 893	50 353	5.75	335	50 353	0.67	363	50 353	0.72
Cameroon	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	918	43 179	2.13	2 170	43 179	5.03	555	43 179	1.29	674	43 179	1.56
	2013	1 268	46 483	2.73	3 164	46 483	6.81	920	46 483	1.98	809	46 483	1.74
Canada	2011	6	1 286 078	<0.001	93	1 286 078	0.007	88	1 286 078	0.007	65	1 286 078	0.005
	2012	7	1 285 205	<0.001	98	1 285 210	0.007	62	1 285 213	0.005	48	1 285 213	0.004
	2013	2	1 231 552	<0.001	82	1 231 550	0.007	66	1 231 552	0.005	66	1 231 553	0.005
Cape Verde	2011	4	2 981	0.13	70	2 981	2.35	1	2 981	0.03	6	2 981	0.20
	2012	1	3 313	0.03	69	3 313	2.08	0	3 313	0	5	3 313	0.15
	2013	4	3 243	0.12	52	3 243	1.60	3	3 243	0.09	18	3 243	0.56
Central African Republic	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	...	...	...	...	...	...	...	...	...	...	...	...
	2013	514	11 423	4.50	1 119	11 423	9.80	320	11 423	2.80	238	11 423	2.08
Chad	2011	803	29 568	2.66	3 041	29 568	10.11	145	29 568	0.51	371	29 568	1.25
	2012	1 140	44 320	2.57	4 634	44 496	10.65	305	42 864	0.71	508	42 868	1.18
	2013	1 857	69 265	2.68	6 863	69 265	9.91	1 770	69 265	2.56	1 216	69 265	1.76
Chile	2011	78	230 308	0.03	40	230 308	0.02	79	230 308	0.03	2 816	230 308	1.22
	2012	79	229 692	0.03	31	229 692	0.01	69	229 692	0.03	1 909	229 692	0.83
	2013	138	223 338	0.06	32	224 324	0.01	42	221 645	0.02	709	222 553	0.32
China	2011	17 361	12 321 228	0.14	90 298	12 321 228	0.73	52 884	12 321 228	0.43	73 004	12 321 228	0.59
	2012	...	...	...	...	...	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Colombia	2011	1 793	734 533	0.24	1 115	734 533	0.15	3 940	734 533	0.54	10 365	734 533	1.41
	2012	1 628	746 509	0.22	1 181	746 509	0.16	3 686	746 509	0.49	11 231	746 059	1.50
	2013	1 579	740 173	0.21	1 193	740 173	0.16	3 061	740 173	0.41	11 147	740 173	1.51
Comoros	2011	0	2 177	0	80	2 177	3.07	30	2 177	1.21	45	2 177	2.07
	2012	2 410	—	90	2 410	3.73	25	2 410	1.04	52	2 410	2.15	
	2013	0	2 530	0	94	2 530	3.72	36	2 530	1.42	62	2 530	2.45
Congo	2011	1 493	53 611	2.78	4 040	53 611	7.54	1 088	53 611	2.03	151	53 611	0.28
	2012	1 039	47 496	2.19	3 271	47 496	6.89	809	47 496	1.70	147	47 496	0.31
	2013	1 116	50 472	2.21	3 207	50 472	6.35	919	50 472	1.82	119	50 472	0.24
Cook Islands	2011	0	245	0	0	245	0	1	245	0.41	0	245	0
	2012	0	224	0	0	224	0	0	224	0	0	224	0
	2013	0	209	0	0	209	0	0	209	0	0	209	0
Costa Rica	2011	105	71 090	0.15	74	71 090	0.1	441	71 090	0.62	421	71 090	0.59
	2012	107	70 179	0.15	64	70 179	0.09	788	70 179	1.12	393	70 179	0.56
	2013	54	68 209	0.08	92	68 209	0.14	961	68 209	0.38	401	68 209	0.59

<sup>3</sup> Data do not include the questionable results (undetermined), which are: HIV, 473; HBV, 298; HCV, 233; and syphilis, 130.

<sup>4</sup> Data do not include the undetermined results.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
Côte d'Ivoire	2011	569	97 664	0.60	5 358	97 664	5.50	1 377	97 664	1.40	522	97 664	0.50
	2012	606	122 112	0.50	6 565	122 112	5.38	2 407	122 112	1.97	558	122 112	0.46
	2013	553	133 023	0.42	7 498	133 023	5.64	2 247	133 023	1.69	812	133 023	0.61
Croatia	2011	2	177 650	0.001	21	177 650	0.01	14	177 650	0.008	7	177 650	0.004
	2012	7	182 068	0.004	16	182 068	0.009	5	182 068	0.003	8	182 068	0.004
	2013	3	183 072	0.002	36	183 072	0.02	14	183 072	0.008	8	183 072	0.004
Cuba	2011	...	...	0.02	...	...	0.32	...	...	0.63	...	...	0.67
	2012	97	401 575	0.02	1 660	401 575	0.41	3 074		0.76	2 300	401 575	0.57
	2013	...	...	0.02	...	...	0.51		...	1.24	...	...	0.73
Cyprus	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	91	57 323	0.16	35	57 323	0.06	62	57 323	0.11	19	57 323	0.03
Czech Republic	2011	4	575 300	< 0.001	27	575 300	0.005	34	575 300	0.006	25	575 300	0.004
	2012	6	598 266	0.001	14	598 408	0.002	19	598 501	0.003	11	595 756	0.002
	2013	7	1 092 800	< 0.001	33	1 092 800	0.003	144	1 092 800	0.01	35	1 092 800	0.003
Democratic People's Republic of Korea	2011	...	...	...	723	98 080	0.73	105	98 080	0.11	...	...	...
	2012	...	...	...	745	101 357	0.74	117	101 357	0.12	...	...	...
	2013	...	...	...	813	101 742	0.79	132	101 742	0.13	...	...	...
Democratic Republic of the Congo	2011	9 607	575 300	2.40	12 008	575 300	3.53	4 403	575 300	1.66	4 002	575 300	1.22
	2012	19 062	375 355	5.08	26 792	327 358	8.18	18 980	270 764	7.01	10 450	292 747	3.57
	2013	4 516	434 221	1.04	13 923	409 502	3.40	6 934	385 226	1.80	3 415	379 417	0.90
Denmark	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	0	298 083	0	5	298 083	0.002	4	298 083	0.001			
	2013	1	290 000	<0.001	1	290 000	<0.001		290 000	0			
Djibouti	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Dominica	2011	3	1 043	0.29	9	1 043	0.86	...	...	...	14	1 043	1.34
	2012	0	946	0	2	946	0.21	...	...	...	11	946	1.16
	2013	2	1 071	0.19	2	1 071	0.19	...	...	...	13	1 071	1.21
Dominican Republic	2011	233	10 450	0.22	1 023	10 450	0.98	306	10 450	0.29	576	14 150	0.55
	2012	216	109 187	0.20	912	109 187	0.84	202	109 187	0.19	610	109 187	0.56
	2013	179	114 157	0.16	1 182	114 157	1.04	235	114 157	0.21	750	114 157	0.66
Ecuador	2011	701	211 818	0.33	550	211 818	0.26	744	209 845	0.35	1 330	211 818	0.63
	2012	296	83 680	0.35	294	83 680	0.35	449	83 680	0.54	970	83 680	1.16
	2013	952	229 018	0.42	1 121	229 018	0.49	572	229 018	0.25	2 532	229 018	1.11
Egypt	2011	996	355 111	0.28	2 898	355 111	0.82	11 613	355 111	3.45	227	355 111	0.06
	2012	896	423 849	0.21	3 599	423 849	0.85	14 192	423 849	3.35	397	423 849	0.09
	2013	906	424 301	0.21	3 599	424 301	0.85	14 194	424 301	3.35	396	424 301	0.09
El Salvador	2011	53	91 543	0.06	142	91 543	0.16	115	91 543	0.13	1 002	91 543	1.10
	2012	47	94 494	0.05	124	94 494	0.13	105	94 494	0.11	705	94 494	0.75
	2013	66	98 088	0.07	116	98 088	0.12	147	98 088	0.15	735	98 088	0.75
Equatorial Guinea	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Eritrea	2011	22	10 697	0.21	185	10 697	1.73	61	10 697	0.57	98	10 697	0.91
	2012	7	9 806	0.07	162	9 806	1.65	35	9 806	0.36	2	9 806	0.02
	2013	9	8 692	0.10	194	8 692	2.23	74	8 692	0.85	13	8 692	0.15
Estonia	2011	6	58 983	0.01	14	58 983	0.02	46	58 983	0.08	19	58 983	0.03
	2012	6	60 057	0.01	12	60 057	0.02	35	60 057	0.06	17	60 057	0.03
	2013	5	60 929	0.008	7	60 929	0.01	42	60 929	0.07	19	60 929	0.03
Ethiopia	2011	326	...	0.66	937	...	1.92	150	...	0.31	58	...	0.12
	2012	1 113	55 888	1.99	2 135	55 800	3.83	1 177	55 888	2.11	65	55 888	0.12
	2013	692	79 274	0.87	3 055	79 274	3.85	619	79 274	0.78	192	79 274	0.24
Fiji	2011	0	11 032	0	223	11 032	2.02	0	11 032	0	144	11 032	1.31
	2012	7	12 293	0.06	249	12 293	2.03	...	...	...	194	12 293	1.58
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Finland	2011	0	263 000	0	1	263 000	<0.001	9	263 000	0.003		263 000	
	2012	1	250 994	<0.001	2	250 994	<0.001	15	250 994	0.006	1	250 994	<0.001
	2013	0	227 605	0	1	227 605	<0.001	9	227 605	0.004	6	227 605	0.003
France	2011	36	3 128 581	0.001	261	3 128 581	0.008	139	3 128 581	0.004	351	3 128 581	0.01
	2012	26	3 019 685	<0.001	273	3 019 685	0.009	141	3 019 685	0.005	413	3 019 685	0.01
	2013	18 <sup>b</sup>	2 854 874	<0.001	223	2 854 874	0.008	117	2 854 874	0.004	384	2 854 874	0.01
Gabon	2011	377	17 594	2.14	872	17 594	4.96	152	17 594	0.86	535	17 594	3.04
	2012	407	16 854	2.41	943	16 854	5.60	163	16 854	0.97	578	16 854	3.43
	2013	339	19 939	1.70	804	19 939	4.03	136	19 939	0.68	558	19 939	2.80
Gambia	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...	...	...	...	...	...

<sup>b</sup> HIV: among them, one NAT test positive/anti-HIV negative; five NAT tests positive/HBsAg negative.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
Georgia	2011	52	33 254	0.16	378	33 254	1.14	704	33 254	2.12	109	33 254	0.33
	2012	24	31 724	0.08	362	31 724	1.14	403	31 724	1.27	202	31 724	0.64
	2013	37	36 025	0.10	319	36 025	0.89	373	36 025	1.04	123	36 025	0.34
Germany	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	100	7 365 562	0.001	520	7 365 562	0.007	243	7 365 562	0.003	327	7 365 562	0.004
Ghana	2011	814	63 569	1.28	6 077	63 569	9.56	610	63 569	0.96	915	63 569	1.44
	2012	6 193	151 172	4.10	9194	151 172	6.08	5 097	151 172	3.37	7 720	151 172	5.11
	2013	3 847	160 295	2.40	11 060	160 295	6.90	3 526	160 295	2.20	6 732	160 295	4.20
Greece	2011	51	582 187	0.009	991	582 187	0.17	240	582 187	0.04	119	582 187	0.02
	2012	39	542 240	0.007	778	542 240	0.14	155	542 240	0.03	122	542 240	0.02
	2013	43	521 750	0.008	553	521 750	0.11	173	521 750	0.03	106	521 750	0.02
Grenada	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Guatemala	2011	272	105 803	0.26	380	105 803	0.36	683	105 803	0.65	2217	105 803	2.10
	2012	304	113 041	0.27	430	113 041	0.38	692	113 041	0.61	2153	113 041	1.90
	2013	374	121 921	0.31	642	121 921	0.53	871	121 921	0.71	2 229	121 921	1.82
Guinea	2011	1 067	...	3.48	2 673	...	9.12	316	...	1.63	67	...	0.63
	2012	1 341	36 618	3.66	3 792	36 544	10.38	287	36 618	0.78	200	36 618	0.55
	2013	1 142	41 805	2.73	3 214	41 805	7.69	409	41 805	0.98	452	41 805	1.08
Guinea-Bissau	2011	70	2 970	2.36	183	2 970	6.16	58	2 970	1.95	16	2 970	0.54
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	314	4 703	6.68	542	4 703	11.52	35	4 703	0.74	6	4 703	0.13
Guyana	2011	10	7 658	0.13	100	7 658	1.31	20	7 658	0.26	49	7 658	0.64
	2012	21	7 712	0.27	74	7 712	0.96	35	7 712	0.45	51	7 712	0.66
	2013	38	11 148	0.34	98	11 148	0.88	51	11 148	0.46	63	11 148	0.57
Haiti	2011	213	19 751	1.08	695	19 751	3.51	114	19 751	0.58	525	19 751	2.65
	2012	238	25 608	0.93	881	25 608	3.44	112	25 608	0.44	510	25 608	1.99
	2013	305	27 478	1.11	966	27 478	3.52	283	27 478	1.03	673	27 478	2.45
Honduras	2011	127	66 457	0.19	131	66 457	0.20	346	66 457	0.52	525	66 457	0.79
	2012	109	66 518	0.16	130	66 518	0.20	251	66 518	0.38	634	66 518	0.95
	2013	107	69 082	0.15	190	69 082	0.28	69 082	69 082	0.35	69 082	69 082	1.01
Hungary	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	4	428 540	<0.001	89	428 540	0.02	112	428 540	0.03	94	428 540	0.02
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Iceland	2011	0	13 666	0	0	13 666	0	1	13 666	<0.001	—	—	—
	2012	0	13 393	0	0	13 393	0	0	13 393	0	—	—	—
	2013	...	...	...	...	...	...	...	...	...	—	—	—
India	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	...	...	0.2	...	...	1.1	...	...	0.4	...	...	0.2
	2013	...	...	0.2	...	...	1	...	...	0.4	...	...	0.2
Indonesia	2011	671	2 310 561	0.03	38 106	2 310 298	1.65	11 407	2 308 797	0.49	16 177	2 309 578	0.70
	2012	1 777	2 538 314	0.07	41 629	2 538 314	1.64	10 154	2 538 314	0.40	21 322	2 538 314	0.84
	2013	6 099	2 722 758	0.22	44 444	2 722 758	1.63	11 103	2 722 758	0.41	22 600	2 722 758	0.83
Iran (Islamic Republic of)	2011	74	1 989 867	0.004	3 922	1 989 867	0.20	1 217	1 989 867	0.06	22	1 989 867	0.001
	2012	62	2 042 315	0.003	3 223	2 042 315	0.16	1 056	2 042 315	0.05	64	2 042 315	0.003
	2013	58	2 001 791	0.003	2 858	2 001 791	0.14	978	2 001 791	0.05	38	2 001 791	0.002
Iraq	2011	1	475 172	<0.001	2 447	475 172	0.51	717	475 172	0.14	2 787	475 172	0.59
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Ireland	2011	0	157 858	0	1	157 858	0.63	—	157 858	4	157 858	0.003	
	2012	1	153 304	<0.001	0	153 304	0	2	153 304	0.001	3	153 304	0.002
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Israel	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	3	298 506	0.001	143	298 506	0.05	62	298 506	0.02	41	298 506	0.01
	2013	6	277 691	0.002	112	277 691	0.04	56	277 691	0.02	17	277 691	0.006
Italy	2011	131	—	0.004	823	—	0.03	408	—	0.01	581	—	0.02
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	65	3 144 724	0.002	666	3 144 724	0.02	348	3 144 724	0.01	553	3 144 724	0.02
Jamaica	2011	175	—	0.6	236	—	0.78	192	—	0.6	312	—	1
	2012	337	30 872	1.09	246	30 872	0.80	212	30 872	0.69	681	30 872	2.20
	2013	121	30 147	0.40	182	30 147	0.60	211	30 147	0.70	452	30 147	1.50
Japan	2011	3 848	5 252 182	0.07	13 505	5 252 182	0.26	2 034	5 252 182	0.04	6 043	5 252 182	0.12
	2012	3 502	5 271 103	0.07	28 061	5 271 103	0.53	2 141	5 271 103	0.04	5 605	5 271 103	0.11
	2013	3 579 <sup>b</sup>	5 205 819	0.07	29 829	5 205 819	0.57	1 742	5 205 819	0.03	4 933	5 205 819	0.09
Jordan	2011	1	105 275	<0.001	1 178	105 275	1.11	237	105 275	0.23	1	105 275	<0.001
	2012	3	111 812	0.003	1 197	111 812	1.07	279	111 812	0.25	8	111 812	0.007
	2013	2	113 378	0.002	1 084	113 378	0.96	283	113 378	0.25	9	113 378	0.008
Kazakhstan	2011	54	276 468	0.02	4 247	276 468	1.54	2 750	276 468	0.99	2 922	276 468	1.05
	2012	623	284 012	0.22	4 918	284 012	1.73	3 129	284 012	1.10	3 229	284 012	1.14
	2013	...	...	...	...	...	...	...	...	...	...	...	...

<sup>a</sup> Positive numbers include serological testing positive and NAT positive.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
Kenya	2011	663	122 095	0.54	1 583	122 095	1.46	836	122 095	0.68	351	122 095	0.29
	2012	802	155 606	0.52	2 122	155 606	1.36	702	155 606	0.45	498	155 606	0.32
	2013	825	158 742	0.52	2 147	158 742	1.35	716	158 742	0.45	498	158 742	0.31
Kiribati	2011	0	1 890	0	185	1 890	9.78	0	1 890	0	58	1 890	3.06
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Kuwait	2011	0	68 898	0	88	68 898	0.13	100	68 898	0.15	118	68 898	0.17
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Kyrgyzstan	2011	187	34 771	0.54	1 823	34 771	5.24	1 000	34 771	2.88	673	34 771	1.94
	2012	192	36 434	0.53	1 651	36 434	4.53	962	36 434	2.64	730	36 434	2.00
	2013	105	37 463	0.28	1 649	37 463	4.40	949	37 463	2.53	574	37 463	1.53
Lao People's Democratic Republic	2011	12	...	0.04	1 338	...	4.94	98	...	0.36	3	...	0.01
	2012	18	29 037	0.07	1 338	29 037	4.60	70	29 037	0.24	5	29 037	0.02
	2013	36	34 377	0.09	1 641	34 377	4.77	56	34 377	0.16	9	34 377	0.03
Latvia	2011	9	57 752	0.02	84	57 752	0.15	253	57 752	0.44	115	57 752	0.20
	2012	...	...	0.02	...	...	...	...	...	...	...	...	...
	2013	14	53 942	0.03	44	53 942	0.08	134	53 942	0.25	21	53 942	0.04
Lebanon	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Lesotho	2011	190	5 696	3.33	50	5 696	0.88	49	5 696	0.86	42	5 696	0.74
	2012	233	7 593	3.07	67	7 593	0.88	65	7 593	0.86	30	7 593	0.40
	2013	256	7 988	3.21	84	7 988	1.05	55	7 988	0.69	76	7 988	0.95
Liberia	2011	...	...	1.46	...	...	7.40	...	...	2.3	...	...	2.1
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Libya	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Lithuania	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	...	...	...	...	...	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Luxembourg	2011	0	23 737	0	3	23 737	0.01	23 737	0	0	23 737	0	0
	2012	0	24 442	0	3	24 442	0.01	2	24 442	0.008	3	24 442	0.01
	2013	1	24 124	0.004	0	24 124	0	24 124	0	0	7	24 124	0.03
Madagascar	2011	241	21 648	1.11	860	21 648	3.97	312	21 648	1.44	484	21 648	2.24
	2012	179	24 803	0.72	866	24 803	3.49	236	24 803	0.95	574	24 803	2.31
	2013	238	23 075	1.03	771	23 075	3.34	121	23 075	0.52	567	23 075	2.46
Malawi	2011	1 481	49 698	2.98	1 968	49 698	3.96	1 044	49 698	2.10	1 392	49 698	2.80
	2012 <sup>7</sup>	3 783	75 212	5.03	3 207	75 133	4.27	754	53 024	1.42	1 733	75 060	2.31
	2013	1 556	48 579	3.2	1 700	48 579	3.50	534	48 579	1.10	972	—	2.00
Malaysia	2011	229	623 452	0.04	1 384	623 452	0.22	480	623 452	0.08	405	623 452	0.07
	2012	150	695 881	0.02	2 081	702 244	0.30	523	696 034	0.08	467	657 833	0.07
	2013	175	653 124	0.03	1 656	653 124	0.25	415	653 124	0.06	410	653 124	0.06
Maldives	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	3	7 747	0.09	32	7 747	0.41	14	7 747	0.18	11	7 747	0.14
	2013	1	5 826	0.02	23	5 826	0.39	30	5 826	0.51	12	5 826	0.21
Mali	2011	1 340	47 765	2.81	6 921	47 765	14.48	1 112	47 765	2.32	60	47 765	0.12
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	983	45 932	2.14	8 005	45 932	17.43	1 403	45 932	3.05	7	45 932	0.02
Malta	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Marshall Islands	2011	...	...	...	...	...	0.07	...	...	...	...	...	0.05
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Mauritania	2011	24	9 164	0.26	1 584	9 164	17.29	2	9 164	0.02	139	9 164	1.27
	2012	19	10 831	0.18	1 810	10 831	16.63	2	10 831	0.02	139	10 831	1.28
	2013	23	10 886	0.21	1 813	10 886	16.65	0	10 886	0	253	10 886	2.32
Mauritius	2011	8	45 678	0.02	37	45 678	0.08	128	45 678	0.28	77	45 678	0.17
	2012	16	45 371	0.04	31	45 371	0.07	117	45 371	0.26	49	45 371	0.11
	2013	21	49 456	0.04	43	49 456	0.09	136	49 456	0.27	136	49 456	0.27
Mexico	2011	3 916	170 872	0.22	2 807	1 743 023	0.16	9 897	1 743 278	0.56	9 048	1 740 049	0.51
	2012	4 286	1 741 112	0.25	2 622	1 739 885	0.15	10 001	1 741 873	0.57	10 216	1 737 043	0.59
	2013	3 947	1 343 294	0.29	2 444	1 343 244	0.18	9 160	1 343 137	0.68	9 420	1 340 785	0.70
Micronesia (Federated States of)	2011	0	1 799	0	14	1 799	0.78	5	1 799	0.29	8	1 799	0.44
	2012	0	2 348	0	39	2 348	1.66	20	2 348	0.85	49	2 348	2.09
	2013	0	1 919	0	23	1 942	1.18	7	1 926	0.36	43	1 962	2.19

<sup>7</sup> The denominator is different because not all hospital blood banks tested all TTI markers.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
Monaco	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Mongolia	2011	0	20 673	0	947	20 673	4.58	718	20 673	3.47	336	20 673	1.63
	2012	1	20 854	0.005	919	20 854	4.41	586	20 854	2.81	622	20 854	2.98
	2013	1	22 639	0.004	963	22 639	4.25	685	22 639	3.02	706	22 639	3.12
Montenegro	2011	1	6 500	0.02	8	6 500	0.12	8	—	0.12	2	6 500	0.03
	2012	0	15 706	0	21	15 706	0.13	18	15 706	0.11	30	15 706	0.19
	2013	0	16 603	0	18	16 603	0.11	11	16 603	0.07	27	16 603	0.16
Morocco	2011	1 160	232 197	0.50	3 468	232 197	1.49	1 584	232 197	0.68	4 413	232 197	1.90
	2012	874	247 754	0.35	3 072	247 754	1.23	1 233	247 754	0.49	3 887	247 754	1.56
	2013	42	314 623	0.01	3 240	314 623	1.03	165	314 623	0.05	5 348	314 623	1.70
Mozambique	2011	6 506	115 033	5.66	5 300	115 033	4.61	1 028	115 033	0.89	5 460	115 033	4.75
	2012	7 155	121 561	5.89	5 647	121 561	4.65	890	121 561	0.73	11 127	121 561	9.15
	2013	6 525	119 003	5.48	4 256	119 003	3.58	567	119 003	0.48	2 721	119 003	2.29
Myanmar	2011	596	197 482	0.30	5 263	197 482	2.67	1 163	197 482	0.59	1 165	197 482	0.59
	2012	577	208 008	0.28	4 678	208 008	2.25	985	208 008	0.47	1 310	208 008	0.63
	2013	781	266 540	0.29	6 451	266 540	2.42	1 343	266 540	0.50	2 144	266 540	0.80
Namibia	2011	91	23 849	0.38	200	23 849	0.84	14	23 849	0.06	68	23 849	0.29
	2012	169	24 141	0.70	165	24 141	0.68	57	24 141	0.24	138	24 141	0.57
	2013	66	28 143	0.23	169	28 143	0.60	17	28 143	0.06	33	28 143	0.12
Nauru	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Nepal	2011	260	177 195	0.15	825	177 195	0.47	683	177 195	0.39	651	177 195	0.37
	2012	123	189 321	0.07	565	189 321	0.29	585	189 321	0.31	804	189 321	0.42
	2013	102	201 122	0.05	590	201 122	0.29	466	201 122	0.23	736	201 122	0.37
Netherlands	2011	0	...	0	7	...	0.002	0	...	0	5	...	<0.001
	2012	...	...	...	...	...	...	...	...	...	...	...	...
	2013	2	759 803	<0.001	2	759 803	<0.001	1	759 803	<0.001	5	759 803	<0.001
New Zealand	2011	0	18 247	0	29	18 247	0.02	13	18 247	0.007	13	18 247	0.007
	2012	0	176 551	0	25	176 551	0.01	8	176 551	0.004	9	176 551	0.005
	2013	0	160 211	0	21	160 211	0.01	5	160 211	0.003	6	160 211	0.004
Nicaragua	2011	...	...	0.06	...	...	0.24	...	...	0.2	...	...	0.77
	2012	44	72 988	0.06	164	72 988	0.23	246	72 988	0.34	436	72 988	0.60
	2013	28	72 658	0.04	156	72 658	0.21	236	72 658	0.32	261	72 658	0.36
Niger	2011	893	49 912	1.79	5 572	49 912	11.16	1170	49 912	2.46	796	49 912	1.59
	2012	...	...	2.0	...	...	10.28	...	...	1.29	...	...	1.34
	2013	1 744	75 977	2.29	6 441	75 977	8.47	1 157	75 977	1.52	785	75 977	1.03
Nigeria	2011	393	57 652	0.68	880	57 652	1.53	317	57 652	0.55	329	57 652	0.57
	2012	825	42 955	1.92	3 711	42 955	8.64	1 159	42 955	2.70	204	42 955	0.47
	2013	1 686	125 101	1.35	6 414	125 101	5.13	2 521	125 101	2.02	979	125 101	0.78
Niue	2011	0	29	0	0	29	0	0	29	0	0	29	0
	2012	0	10	0	0	10	0	0	10	0	0	10	0
	2013	0	31	0	0	31	0	0	31	0	0	31	0
Norway	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	0	213 031	0	1	213 031	<0.001	2	213 031	<0.001	0	16 589	0
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Oman	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	3	51 588	0.01	75	51 588	0.15	183	51 588	0.35	17	51 588	0.03
	2013	6	52 976	0.01	84	52 976	0.16	181	52 976	0.34	54	52 976	0.10
Pakistan	2011	93	1 075 989	0.01	23 296	1 075 989	2.17	42 301	1 075 989	3.93	4 030	—	0.59
	2012	527	1 282 278	0.04	48 243	1 282 278	3.76	92 823	1 282 278	7.23	13 987	1 202 278	1.16
	2013	396	2 360 447	0.02	35 903	2 360 447	1.52	60 349	2 360 447	2.55	4 096	1 569 995	0.26
Palau	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Panama	2011	315	52 755	0.59	173	52 755	0.32	308	52 755	0.58	728	52 755	1.3
	2012	128	55 083	0.23	178	55 083	0.32	333	55 083	0.60	642	55 083	1.17
	2013	89	53 529	0.16	119	53 529	0.22	268	53 529	0.50	740	53 529	1.38
Papua New Guinea	2011	91	26 963	0.3	3 861	26 963	14.32	—	—	—	1 841	26 963	6.83
	2012	102	26 518	0.38	3 799	26 518	14.33	—	—	—	3 443	26 518	12.98
	2013	388	29 390	1.32	3 967	29 390	13.50	—	—	—	3 646	29 390	12.41
Paraguay	2011	569	77 178	0.74	285	77 178	0.37	309	77 178	0.4	6 200	77 178	8.03
	2012	438	61 525	0.71	208	61 525	0.34	215	61 525	0.35	4 619	61 525	7.51
	2013	...	0.43	...	...	0.30	...	...	0.30	...	...	...	6.47
Peru	2011	286	132 022	0.22	541	132 018	0.41	575	132 054	0.44	1465	131 902	1.11
	2012	321	166 049	0.19	682	166 049	0.41	785	166 049	0.47	1 863	166 049	1.12
	2013	481	204 871	0.23	784	204 871	0.38	1 156	204 871	0.56	2 432	204 871	1.19
Philippines	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	5 923	504 875	1.17	22 260	510 338	4.36	6 946	505 325	1.37	7 782	505 189	1.54
	2013	219	474 112	0.05	5 720	474 718	1.20	303	474 429	0.06	808	474 107	0.17
Poland	2011	708	1 218 738	0.06	888	1 218 738	0.07	2 413	1 218 738	0.20	148	1 218 738	0.01
	2012	51 <sup>a</sup>	1 173 050	0.004	1 044	1 173 050	0.09	2 198	1 173 050	0.19	934	1 173 050	0.08
	2013	40	1 246 218	0.003	539	1 246 218	0.04	512	1 246 218	0.04	179	1 246 218	0.01

<sup>a</sup> Confirmed positives.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
Portugal	2011	44	410 889	0.01	76	410 889	0.02	39	410 889	0.009	689	410 889	0.17
	2012	124	386 562	0.03	119	386 562	0.03	296	386 562	0.08	1 330	386 562	0.34
	2013	50	356 281	0.01	76	356 281	0.02	110	356 281	0.03	852	356 281	0.24
Qatar	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	12	23 857	0.05	1 135	23 857	4.75	122	23 857	0.51	107	23 857	0.45
Republic of Korea	2011	3 567	2 623 415	0.14	1 966	2 623 415	0.07	4 066	2 623 415	0.15	853	2 623 415	0.03
	2012	2 436	2 717 859	0.09	2 082	2 717 859	0.08	4 222	2 717 859	0.16	2 337	2 717 859	0.09
	2013	3 416	2 910 220	0.12	1 851	2 910 220	0.06	2 526	2 910 220	0.09	2 181	2 910 220	0.07
Republic of Moldova	2011	20	77 203	0.03	1471	77 203	1.91	621	77 203	0.80	953	77 203	1.23
	2012	17	77 671	0.02	1 324	77 671	1.70	668	77 671	0.86	1 005	77 671	1.29
	2013	51	79 035	0.06	1 212	79 035	1.53	614	79 035	0.78	1 087	79 035	1.38
Romania	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	66	406 678	0.02	2 612	406 678	0.64	422	406 678	0.10	1 237	406 678	0.30
	2013	54	436 752	0.01	2 372	436 752	0.54	479	436 752	0.11	1 411	436 752	0.32
Russian Federation	2011	1 933	3 167 902	0.06	9 128	3 167 902	0.29	16 554	3 167 902	0.52	9 840	3 167 902	0.31
	2012	1 920	3 064 490	0.06	7 585	3 064 490	0.25	12 424	3 064 490	0.41	8 238	3 064 490	0.27
	2013	1 595 <sup>a</sup>	3 023 751	0.05	6 485	3 023 751	0.21	12 641	3 023 751	0.42	7 812	3 023 751	0.26
Rwanda	2011	203	37 811	0.54	609	37 811	1.61	1 113	37 811	2.94	668	37 811	1.77
	2012	203	40 520	0.50	616	40 520	1.52	1 146	40 520	2.83	628	40 520	1.55
	2013	215	43 074	0.50	516	43 074	1.20	689	43 074	1.60	129	43 074	0.30
Saint Kitts and Nevis	2011	0	368	0	14	368	3.80	7	368	1.90	4	368	1.09
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	0	331	0	12	331	3.63	0	331	0	0	331	0
Saint Lucia	2011	3	2 304	0.13	12	2 304	0.52	0	2 304	0	27	2 304	1.17
	2012	0	2 279	0	19	2 279	0.83	2	2 279	0.08	18	2 279	0.78
	2013	2	2 174	0.09	14	2 174	0.64	1	2 174	0.05	24	2 174	1.10
Saint Vincent and the Grenadines	2011	3	1 157	0.3	7	1 157	0.6	7	1 157	0.6	22	1 157	1.9
	2012	2	1 191	0.17	9	1 191	0.76	5	1 191	0.42	19	1 191	1.60
	2013	2	1 161	0.17	5	1 161	0.43	6	1 161	0.52	29	1 161	2.50
Samoa	2011	0	2 526	0	92	2 526	3.64	19	2 526	0.75	0	2 526	0
	2012	0	2 227	0	102	2 227	4.58	20	2 227	0.90	2	2 227	0.09
	2013	...	...	...	...	...	...	...	...	...	...	...	...
San Marino	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	11	919	1.20	105	919	11.43	3	919	0.33	0	919	0
Saudi Arabia	2011	85	445 000	0.02	14 685	445 000	3.30	3115	445 000	0.70	1 112	445 000	0.25
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	43	427 550	0.01	13 280	427 550	3.11	2 490	427 550	0.58	1 037	427 550	0.25
Senegal	2011	125	52 513	0.24	5 221	52 513	9.94	307	52 513	0.58	192	52 513	0.37
	2012	136	57 377	0.23	5 442	57 377	9.48	242	57 377	0.42	200	57 377	0.35
	2013	169	67 815	0.24	6 556	67 815	9.66	133	67 815	0.19	161	67 815	0.24
Serbia	2011	8	237 158	0.003	97	237 158	0.04	80	237 158	0.03	61	237 158	0.03
	2012	22	233 340	0.009	145	233 340	0.06	114	233 340	0.05	96	233 340	0.04
	2013	7	235 339	0.003	58	235 339	0.03	51	235 339	0.02	41	235 339	0.02
Seychelles	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	0	1 441	0	0	1 441	0	...	...	...	...	...	...
	2013	0	1 610	0	0	1 610	0	...	...	...	...	...	...
Sierra Leone	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	1 972	43 273	4.56	4 113	43 273	9.51	521	43 273	1.20	670	43 273	1.55
Singapore	2011	4	115 124	0.003	94	115 124	0.08	28	115 124	0.02	366	115 124	0.32
	2012	5	118 573	0.004	89	118 573	0.08	20	118 573	0.02	44	118 573	0.04
	2013	7	121 360	0.006	104	121 360	0.09	20	121 360	0.02	35	121 360	0.03
Slovakia	2011	2	206 120	0.001	35	206 120	0.02	16	206 120	0.008	16	206 120	0.008
	2012	2	210 342	0.001	24	210 342	0.01	25	210 342	0.01	32	210 342	0.02
	2013	1	216 454	<0.001	23	216 454	0.01	24	216 454	0.01	30	216 454	0.01
Slovenia	2011	2	99 377	0.002	17 <sup>10</sup>	99 377	0.02	99 377	0	12	99 377	0.01	
	2012	2	94 721	0.002	12	94 721	0.01	4	94 721	0.004	10	94 721	0.01
	2013	2	90 768	0.002	14	90 768	0.02	3	90 768	0.003	5	90 768	0.006
Solomon Islands	2011	3	2 506	0.12	408	2 506	16.28	47	2 506	1.88	131	2 506	5.23
	2012	11	2 573	0.43	424	2 573	16.48	44	2 573	1.71	187	2 573	7.27
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Somalia	2011	61	18 156	0.34	1 098	18 156	6.05	73	18 156	0.40	330	18 156	1.82
	2012	39	25 515	0.15	1 174	25 515	4.60	98	25 515	0.38	295	25 515	1.16
	2013	45	28 331	0.16	1 031	28 331	3.64	82	28 331	0.29	254	28 331	0.90

<sup>9</sup> Data in this section show the number of donations reactive in the primary screening of donated blood.  
<sup>10</sup> Among them, eight positives only in NAT testing.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
South Africa	2011	1 914	945 016	0.20	889	945 016	0.09	55	945 016	0.006	1 912	945 016	0.20
	2012	1 643	950 520	0.17	1 315	950 520	0.13	45	950 520	0.006	2 294	950 520	0.24
	2013	1 932	971 879	0.20	1 317	971 879	0.14	69	971 879	0.007	1 888	971 879	0.19
South Sudan	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	227	2 352	9.65	688	2 352	29.25	...	...	...	429	2 352	18.24
	2013	105	2 812	3.73	334	2 812	11.88	120	2 812	4.3	232	2 812	8.25
Spain <sup>11</sup>	2011	153	1 796 695	0.009	519	1 796 695	0.03	265	1 796 695	0.01	844	1 796 695	0.05
	2012	144	1 755 807	0.008	474	1 755 807	0.03	252	1 755 807	0.01	721	1 755 807	0.04
	2013	149	1 698 097	0.009	443	1 698 097	0.03	217	1 698 097	0.01	828	1 698 097	0.05
Sri Lanka	2011	7	330 200	0.002	411 <sup>12</sup>	330 200	0.12	1 033	330 200	0.31	122	330 200	0.04
	2012	16	351 605	0.004	405	351 605	0.12	1 025	351 605	0.29	170	351 605	0.05
	2013	16	380 808	0.004	273	380 808	0.07	953	380 808	0.25	180	380 808	0.05
Sudan	2011	2 951	293 482	1.00	11 348	293 482	3.87	3 120	293 482	1.06	7 923	293 482	2.70
	2012	1 922	249 257	0.77	12 471	259 301	4.81	4 763	254 394	1.87	11 707	256 650	4.56
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Suriname	2011	...	0	...	...	0.02	...	...	0.02	...	...	...	0.05
	2012	3	10 678	0.03	2	10 678	0.02	1	10 678	0.009	0	10 678	0
	2013	1	9 939	0.01	5	9 939	0.05	3	9 939	0.03	3	9 939	0.03
Swaziland	2011	309	11 300	2.73	361	11 300	3.19	27	11 300	0.24	417	11 300	3.69
	2012	276	13 498	2.04	348	13 498	2.58	2	13 498	0.01	292	13 498	2.16
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Sweden	2011	0	555 326	0	1	555 326	<0.001	3	555 326	<0.001	7	555 326	0.001
	2012	0	526 330	0	1	526 330	<0.001	3	526 330	...	1	526 330	<0.001
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Switzerland	2011	4	369 106	0.001	49	369 106	0.01	17	369 106	0.005	27	369 106	0.007
	2012	2	360 011	<0.001	26	360 011	0.007	22	360 011	0.006	23	360 011	0.006
	2013	2	342 900	<0.001	27	342 900	0.008	11	342 900	0.003	16	342 900	0.005
Syrian Arab Republic	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Tajikistan	2011	145	31 519	0.46	997	31 519	3.16	613	31 519	1.94	353	31 519	1.12
	2012	...	...	...	...	...	...	...	...	...	...	...	...
	2013	50	31 959	0.16	420	31 959	1.31	461	31 959	1.44	119	31 959	0.37
Thailand	2011 <sup>13</sup>	408	591 192	0.07	2 168	591 192	0.37	525	591 192	0.09	798	591 192	0.13
	2012	495	616 527	0.08	2 163	616 527	0.35	535	616 527	0.09	771	616 527	0.13
	2013	457	628 181	0.07	1 986	628 181	0.32	523	628 181	0.09	710	628 181	0.11
The former Yugoslav Republic of Macedonia	2011	0	56 540	0	60	56 540	0.11	8	56 540	0.01	52	56 540	0.09
	2012 <sup>14</sup>	...	...	0.1	...	...	0.18	...	...	0.02	...	...	0.14
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Timor-Leste	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	13	1 930	0.67	127	1 930	6.58	5	1 930	0.26	61	1 930	3.16
	2013	16	2 229	0.72	134	2 229	6.01	2	2 229	0.09	40	2 229	1.79
Togo	2011	363	...	0.92	2 287	...	5.82	1 175	...	2.99	163	...	0.45
	2012	332	42 710	0.78	1 878	42 710	4.40	840	42 710	1.97	62	28 296	0.22
	2013	332	41 488	0.80	1 878	41 488	4.53	840	41 488	0.02	62	27 557	0.22
Tonga	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Trinidad and Tobago	2011	...	...	0.22	...	...	0.31	...	...	0.28	...	...	1.27
	2012	40	20 290	0.20	66	20 290	0.33	62	20 290	0.31	288	20 290	1.42
	2013	41	21 300	0.19	49	21 300	0.23	56	21 300	0.26	299	21 300	1.40
Tunisia	2011	...	...	0.09	...	...	1.87	...	...	0.40	...	...	0.19
	2012	...	...	0.09	...	...	1.80	...	...	0.50	...	...	0.10
	2013	17	216 752	0.008	3 201	217 217	1.47	799	216 941	0.37	168	216 907	0.07
Turkey	2011	1 513	1 276 215	0.12	10 028	1 276 215	0.79	4 068	1 276 215	0.32	2 546	1 276 215	0.20
	2012	2 458	2 234 447	0.11	13 407	2 234 447	0.60	4 469	2 234 447	0.20	4 245	2 234 447	0.19
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Turkmenistan	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Tuvalu	2011	0	97	0	2	97	2.06	...	...	...	1	97	1.03
	2012	0	194	0	5	194	2.58	...	...	...	4	194	2.06
	2013	0	102	0	9	102	8.82	0	102	0	1	102	0.98
Uganda	2011	1 839	202 939	0.91	4 024	202 939	1.98	3 721	202 939	1.83	303	202 939	0.15
	2012	...	...	...	...	...	...	...	...	...	...	...	...
	2013	1 209	202 935	0.60	3 932	202 935	1.94	2 233	202 935	1.10	425	202 935	0.21
Ukraine	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
United Arab Emirates	2011	2	105 022	0.003	167	105 022	0.15	194	105 022	0.18	263	105 022	0.25
	2012	2	97 303	0.002	241	97 303	0.24	230	97 303	0.24	220	97 303	0.23
	2013	4	113 765	0.004	481	113 765	0.42	191	113 765	0.17	246	113 765	0.22

<sup>11</sup> Based on national data covering 20 blood centres in the country.

<sup>12</sup> For hepatitis B and C, the figures given are for screening positive numbers. Confirmatory testing was not performed.

<sup>13</sup> Partial data from National Blood Centre, Bangkok.

<sup>14</sup> HBV and HCV are positive data; reactive data are 0.45% and 0.25% respectively. HIV and syphilis are reactive data.

Country	Data year	HIV 1+2			HBV			HCV			Syphilis		
		Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*	Positive/reactive, no.	No. donations tested	%*
United Kingdom	2011	23	2 526 628	<0.001	88	2 526 628	0.003	86	2 526 628	0.003	85	2 526 628	0.003
	2012	15	2 402 306	<0.001	71	2 402 306	0.003	69	2 402 306	0.003	76	2 402 306	0.003
	2013	16	2 242 406	<0.001	59	2 242 406	0.003	56	2 242 406	0.003	97	2 242 406	0.004
United Republic of Tanzania	2011	800	94 310	0.85	4 668	94 310	4.95	470	94 310	0.50	333	94 310	0.35
	2012	1 269	108 838	1.17	5 978	108 838	5.49	662	108 838	0.61	374	108 838	0.34
	2013	1 336	163 645	0.82	72 00	163 645	4.40	1 640	163 645	1.00	164	163 645	0.10
United States of America	2011 <sup>15</sup>	256		0.003	803		0.009	2 055		0.03	1 694		0.02
	2012 <sup>16</sup>	195	7 246 823	0.003	552	7 246 312	0.008	1 646	7 246 706	0.02	5 170	7 246 822	0.07
	2013	169	6 221 328	0.003	519	6 221 406	0.008	2 082	6 221 406	0.03	1 156	6 219 234	0.02
Uruguay	2011	131	98 480	0.13	145	98 480	0.15	365	98 480	0.37	483	98 480	0.49
	2012	119	104 342	0.11	130	104 342	0.13	358	104 342	0.34	472	104 342	0.45
	2013	134	101 699	0.13	103	101 699	0.10	363	101 699	0.36	495	101 699	0.49
Uzbekistan	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Vanuatu	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	—	—	—	—	—	—	—	—	—	—	—	—
	2013	...	...	...	...	...	...	...	...	...	...	...	...
Venezuela (Bolivarian Republic of)	2011	947	416 346	0.22	2 198	416 346	0.53	1 341	416 346	0.32	7 549	416 346	1.81
	2012	803	416 426	0.19	1 772	416 426	0.43	1 262	416 426	0.30	7 030	416 426	1.69
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Viet Nam	2011	708	768 902	0.09	25 238	768 902	3.29	4 145	768 902	0.54	1 785	768 902	0.24
	2012	2 041	875 868	0.23	22 165	875 868	2.53	5 472	875 868	0.62	1 705	875 868	0.20
	2013	416	930 468	0.04	20 431	930 468	2.20	2 920	930 468	0.31	1 071	930 468	0.12
Yemen	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012	76	17 000	0.44	254	17 000	1.49	474	17 000	2.79	34	17 000	0.20
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Zambia	2011	3 206	78 966	4.1	3 993	78 966	5.06	598	78 966	0.76	727	78 966	0.92
	2012	3 679	108 296	3.4	5 618	108 296	5.19	1 552	108 296	1.43	2 593	108 296	2.39
	2013	4 309	113 386	3.8	6 463	113 386	5.70	1 134	113 386	1.00	1 020	113 386	0.90
Zimbabwe	2011	528	75 949	0.70	669		0.88	280		0.37	510		0.67
	2012	447	81 779	0.55	563	81 779	0.69	144	81 779	0.18	287	81 779	0.35
	2013	390	67 420	0.58	500	67 420	0.74	8	67 420	0.01	34	67 420	0.05

<sup>15</sup> The data for these fields originate from the subsection of blood centers that account for approximately 57% of the country's blood supply (American Red Cross=42%, New York Blood Center=7%, Blood Systems=8%)  
<sup>16</sup> Values in sections 4.5 to 4.8 are for all donations (7250222), including autologous. Units incompletely tested for a given TTI are removed from 7250222 for that TTI denominator count. The positive counts derived from the risk factor (RF) study and reported here are based on a very tight consensus definition of "positive" for HBV, HCV and HIV. Generally, both seropositive and nucleic acid positive tests were required for RF positivity. The individual centres would report a higher number of positives based on less stringent definitions of positive, e.g. HCV confirmed seropositive, nucleic acid neg is generally accepted as positive but insufficient for the RF study. To demonstrate the impact of this stringent definition on the prevalence rates, the overall ARC rates per 10000 were 0.80, 3.20 and 0.26 for HBV, HCV and HIV respectively. For RF these were 0.67, 2.09 and 0.24 for HBV, HCV and HIV respectively.

## Annex 7

# Number and proportion of donations tested positive/reactive for TTI markers 2011–2013 (continued)

Country	Data year	Chagas disease			Malaria			HTLV I/II		
		Positive/reactive, no.	No. donations screened	%*	Positive/reactive, no.	No. screened	%*	Positive/reactive, no.	No. screened	%*
Angola	2011				284	...	0.3			
	2012				454	98 085	0.46			
	2013				637	154 300	0.41			
Argentina	2011	32 911	111 840	2.96				3 001	111 840	0.27
	2012	21 874	1 056 710	2.07				2 113	1 056 710	0.2
	2013	21 670	954 604	2.27				1 718	954 604	0.18
Australia	2011				0	116 610	0	3	1 362 382	<0.001
	2012				1	118 528	<0.001	3	1 311 576	<0.001
	2013				4	105 499	0.004	7	1 290 750	<0.001
Bahamas	2011							21	7 287	0.29
	2012							25	7 638	0.33
	2013							20	7 215	0.28
Bangladesh	2011				39	415 372	0.009			
	2012				58	541 682	0.01			
	2013				...	593 774	0.02			
Barbados	2011	—	—	—	—	—	—	—	—	—
	2012							22	5 088	0.43
	2013	—	—	—	—	—	—	—	—	—
Belgium	2011									
	2012									
	2013									
Belize	2011	29	4 617	0.63						
	2012	31	4 795	0.65						
	2013	33	5 120	0.65						
Bhutan	2011									
	2012									
	2013				0	2 038	0			
Bolivia	2011	...	...	2.84						
	2012	2 792	83 707	3.34						
	2013	2 561	93 629	2.74						
Brazil	2011	5 984	...	0.2				3 959	...	0.13
	2012	10 584	3 387 766	0.31				6 429	3 387 766	0.19
	2013	—	—	—	—	—	—	—	—	—
Cambodia	2011				16	46 690	0.03			
	2012									
	2013									
Canada	2011	8	18 182	0.04				11	1 286 078	<0.001
	2012	5	19 566	0.03				21	1 285 213	0.002
	2013	6	19 582	0.03				10	1 230 993	<0.001
Chile	2011	449	230 308	0.19				312	230 308	0.14
	2012	323	229 692	0.14				281	229 692	0.12
	2013	346	224 552	0.15				212	224 361	0.09
Colombia	2011	3 989	734 533	0.54	1	734 533	0.001	2 252	734 533	0.45
	2012	3 230	746 059	0.43				1 515	526 192	0.29
	2013	2 988	740 173	0.40				1 278	558 381	0.23
Costa Rica	2011	243	71 090	0.34				535	71 090	0.75
	2012	269	70 179	0.38				202	70 179	0.29
	2013	150	68 209	0.22				100	68 209	0.15
Cuba	2011	—	—	—	—	—	—	—	—	—
	2012									
	2013									
Democratic People's Republic of Korea	2011				20	...	0.02			
	2012				22	101 357	0.02			
	2013									
Dominica	2011							13	1 043	1.2
	2012							9	946	0.95
	2013							16	1 071	1.49

Country	Data year	Chagas disease			Malaria			HTLV I/II		
		Positive/reactive, no.	No. donations screened	%*	Positive/reactive, no.	No. screened	%*	Positive/reactive, no.	No. screened	%*
Dominican Republic	2011							313	104 150	0.3
	2012							258	109 187	0.24
	2013							268	114 157	0.23
Ecuador	2011	372	211 818	0.18				...	...	...
	2012	182	83 680	0.22				2	9 246	0.02
	2013	652	220 380	0.30				5	27 351	0.02
El Salvador	2011	1 538	91 543	1.68						
	2012	1 431	94 494	1.51						
	2013	3 149	98 088	3.21						
Finland	2011									
	2012									
	2013				22	377	5.84			
France	2011							39	3 128 581	0.001
	2012							31	3 019 685	0.001
	2013							26	2 854 874	<0.001
Gabon	2011							274	17 594	1.56
	2012							416	16 854	2.47
	2013							314	19 939	1.57
Greece	2011							5	582 187	<0.001
	2012				0	2 100	0	4	542 240	<0.001
	2013							6	521 750	0.001
Guatemala	2011	1 022	105 803	0.97						
	2012	1 154	113 041	1.02						
	2013	...	...	1.04						
Guyana	2011	4	7 658	0.1	0	7 658	0	52	7 658	0.7
	2012	19	7 712	0.25				33	7 712	0.43
	2013	1	11 148	0.009				93	11 148	0.83
Haiti	2011							143	19 751	0.72
	2012							159	25 608	0.62
	2013							196	27 478	0.71
Honduras	2011	733	66 457	1.1				155	60 016	0.23
	2012	815	66 518	1.23				190	66 113	0.29
	2013	...	...	1.06				...	...	0.14
India	2011	—	—	—	—	—	—	—	—	—
	2012						0.1			
	2013						0.1			
Indonesia	2011				...	...	...			
	2012				643	96 071	0.67			
	2013				967	99 599	0.97			
Iran (Islamic Republic of)	2011							364	368 602	0.10
	2012							278	391 264	0.07
	2013							268	394 561	0.07
Ireland	2011							1	157 858	0.63
	2012							0	153 304	0
	2013	—	—	—	—	—	—	—	—	—
Israel	2011	—	—	—	—	—	—	—	—	—
	2012							3	298 506	0.001
	2013							2	277 691	0.001
Jamaica	2011							622	29 494	2.14
	2012							486	30 872	1.5
	2013							783	30 147	2.60
Japan	2011							3 534	5 252 182	0.07
	2012							3 904	5 271 103	0.07
	2013	2	4 065	0.05				3 013	5 205 819	0.06
Kuwait	2011				701	68 898	1.02	5	68 898	0.007
	2012	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—
Luxembourg	2011							1	1 118	0.09
	2012				0	862	0	1	1 106	0.09
	2013	0	7	0	0	1 668	0	0	793	0
Malawi	2011				413	49 698	0.83			
	2012				844	55 467	1.52			
	2013				291	48 579	0.60			

Country	Data year	Chagas disease			Malaria			HTLV I/II		
		Positive/reactive, no.	No. donations screened	%*	Positive/reactive, no.	No. screened	%*	Positive/reactive, no.	No. screened	%*
Mexico	2011	6 407	1 568 166	0.41						
	2012	7 223	1 604 127	0.45						
	2013	6 644	1 253 228	0.53						
Netherlands	2011							0		0
	2012									
	2013							0	380 000	0
New Zealand	2011				0	5 920	0	1	18 276	0.006
	2012	0	362	0	0	6 518	0	1	16 874	0.006
	2013	1	295	0.34	0	5 683	0	0	16 874	0
Nicaragua	2011	...	...	0.24						
	2012	198	72 988	0.27						
	2013	294	73 658	0.40						
Norway	2011				9	...	...			
	2012				6	2 714	0.22			
	2013	—	—	—	—	—	—	—	—	—
Pakistan	2011				681	688 034	0.1			
	2012				21 520	1 202 278	1.78			
	2013				12 767	1 569 995	0.81			
Panama	2011	385	52 750	0.67				168	51 046	0.3
	2012	262	55 083	0.48				273	53 919	0.5
	2013	216	53 529	0.4				179	53 529	0.3
Paraguay	2011	2256	77 178	2.92				134	77 178	0.17
	2012	1 528	61 525	2.48				99	61 525	0.16
	2013	...	...	2.33				...	...	0.28
Peru	2011	612	132 022	0.46				1 424	131 788	1.08
	2012	1 020	166 049	0.61				1 629	166 049	0.98
	2013	1 022	204 871	0.50				1 810	204 871	0.88
Philippines	2011				...	...	...			
	2012				5 458	477 350	1.14			
	2013				37	456 861	0.01			
Portugal	2011									
	2012							42	71 969	0.06
	2013							5	41 298	0.01
Qatar	2011	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—
	2013				1 447	23 857	8	12	23 857	0.05
Republic of Korea	2011				2 091	1 470 536	0.16	703	2 224 234	0.03
	2012				2 258	1 452 406	0.16	692	2 313 742	0.03
	2013				2 384	1 555 036	0.15	567	191 858	0.02
Romania	2011									
	2012							28	406 678	0.006
	2013							25	436 752	0.005
Saint Kitts and Nevis	2011									
	2012	—	—	—	—	—	—	—	—	—
	2013							0	331	0
Saint Lucia	2011							17	...	0.73
	2012							13	2 279	0.57
	2013							19	2 174	0.87
Saint Vincent and the Grenadines	2011							39	1 157	3.4
	2012							26	1 191	2.18
	2013							27	1161	2.33
Saudi Arabia	2011				45	445 000	0.01	89	445 000	0.02
	2012	—	—	—	—	—	—	—	—	—
	2013	0	427 550	0	41	427 550	0.01	5	427 550	0.001
Singapore	2011				1	4 511	0.02			
	2012				32	8 487	0.38			
	2013				241	10 825	2.23			
Spain	2011	125	128 074	0.10	55	15 785	0.35	22	439 463	0.005
	2012	125	87 609	0.14	124	17 673	0.7	35	534 886	0.007
	2013	96	54 087	0.18	153	11 166	1.37	28	507 935	0.006
Sri Lanka	2011				0	...	0			
	2012				0	351 605	0			
	2013				0	380 808	0			

Country	Data year	Chagas disease			Malaria			HTLV I/II		
		Positive/reactive, no.	No. donations screened	%*	Positive/reactive, no.	No. screened	%*	Positive/reactive, no.	No. screened	%*
Suriname	2011							0	...	0
	2012							3	10 678	0.03
	2013							1	9 939	0.01
Sweden	2011									
	2012							1	43 586	0.002
	2013									
Trinidad and Tobago	2011	...	...	...				...	...	0.44
	2012	...	...	...				125	20 290	0.62
	2013	62	21 300	0.29				41	21 300	0.19
United Arab Emirates	2011				...	...	...	14	105 022	0.01
	2012				...	...	...	8	97 303	0.008
	2013				4	113 765	0.004	3	113 765	0.003
United Kingdom of Great Britain and Northern Ireland	2011							14	2 526 628	<0.001
	2012							10	2 402 306	<0.001
	2013							5	2 242 406	<0.001
United States of America	2011	47 <sup>17</sup>	...	0.002				289	...	0.004
	2012	1 201	2 494 414	0.05				265	7 249 581	0.004
	2013	87	1 378 054	0.006				154	6 221 392	0.002
Uruguay	2011	383	98 480	0.39				104	98 480	0.11
	2012	318	104 342	0.31				77	104 342	0.07
	2013	241	101 699	0.24				127	101 699	0.13
Venezuela (Bolivarian Republic of)	2011	1 370	416 346	0.32				890	416 346	0.21
	2012	1 105	416 426	0.27				638	41 6426	0.15
	2013	—	—	—	—	—	—	—	—	—
Viet Nam	2011				8	768 902	0.001	1 175	159 934	0.76
	2012				38	839 915	0.005	439	218 364	0.20
	2013				38	930 468	0.004	137	218 364	0.06
Yemen	2011	—	—	—	—	—	—	—	—	—
	2012				164	17 000	0.9	—	—	—
	2013	—	—	—	—	—	—	—	—	—

<sup>17</sup> Chagas disease testing (*T. cruzi* antibody) was done selectively. Donors who had already been tested previously were not retested. The denominator was based on only those donors screened for Chagas during the year.

<sup>18</sup> The data for these sections originate from the section of blood centers that account for approximately 57% of the country's blood supply (American Red Cross=42%, New York Blood Center=7%, Blood Systems=8%).

## Annex 8      Blood component preparation 2011–2013

... Not reported/not available.

Blank: Not required/not applicable.

— No response.

\* Except stated/explained otherwise, 1 unit of blood component is defined as the preparation from whole blood donations of 450 ml.

\*\* One unit of apheresis platelets usually contains 200–450 x 10<sup>9</sup> platelets.

△ In adult therapeutic doses.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. of units of blood components prepared from whole blood donations*					No. of units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma
Afghanistan	2011	1	3.3	1 709	0	1 709	0	0			
	2012	1	2.7	2 049	0	2 049	0	0			
	2013	1	3.4	2 454	0	2 454	0	0			
Albania	2011	3 <sup>1</sup>	95.3	24 662	6 275	13 137	11 525	254			
	2012	3	95	26 124	5 539	5 597	20 527	370			
	2013	3	95	27 755	1 883	13 582	14 173	574			
Algeria	2011	181	90.4	397 013	104 821	137 764	0	70	0	3 380	0
	2012	182	90.5	405 993	121 074	177 404	0	85	0	4 580	0
	2013	188	92.4	441 877	111 494	151 453	0	21	0	6 385	0
Andorra	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Angola	2011	28	7.9	6 195	2 182	3 132	...	0			
	2012	...	...	...	1 758	3 142	3 142	0			
	2013	19	10.5	16 289	1 991	3 652	...	0			
Antigua and Barbuda	2011	1	49.7	947	159	356	71	0			
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Argentina	2011	222	92.5	1 028 695	545 517	321 118	682 577	30 115	...	...	...
	2012	202	94.5	996 036	348 613	448 216	547 820	49 802	...	...	...
	2013	160	90	859 144	474 926	412 728	369 093	16 560	...	53 000	...
Armenia	2011	24	100	11 990	1 979	12 405	0	762	0	13	415
	2012	22	100	12 143	2 440	12 456	0	851	0	30	313
	2013	21	100	12 037	2 677	12 255	0	707	0	18	218
Australia	2011	5	100	850 121	363 732	133 205	798 875	68 782	0	61 710	402 485
	2012	5	95.3	808 046	374 604	112 873	702 707 <sup>2</sup>	86 645	0	59 309	490 670 <sup>3</sup>
	2013	5	95.8	739 412	358 260	94 861	650 629	93 093	0	59 542	542 901
Austria	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Azerbaijan	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Bahamas	2011	3	87.2	6 353	2 018	2 239	0	15			
	2012	3	82.2	5 435	1 931	1 618	...	...			
	2013	3	81	5 024	1 930	1 629	2 417	0			
Bahrain	2011	2	98	...	...	...	...	...			
	2012	3	92.6	17 463	16 780	14 435	79	5 052	0	175	0
	2013	3	93	15 917	15 500	14 155	0	4 200	0	213	0
Bangladesh	2011	18	21.4	37 515	21 359	24 526	303	58	0	141	0
	2012	18	16.9	40 889	20 285	29 753	13	205	...	...	...
	2013	21	18.7	53 231	25 783	31 787	13	633	0	270	30
Barbados	2011	—	—	—	—	—	—	—	—	—	—
	2012	1	62	3 128	1 508	1 523	0	95	0	158	0
	2013	—	—	—	—	—	—	—	—	—	—
Belarus	2011	56	100	180 117	78 978	253 023	0	24 697		11 395	149 829
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Belgium	2011	6	100	519 827	198 344	518 785	0	0	4 565	34 810	101 908
	2012	6	100	522 379	272 621	61 823	444 231	0	4 553	33 796	120 816
	2013	6	100	480 219	34 971 <sup>4</sup>	77 093	424 334	0	3 938	34 876	110 330
Belize	2011	1	34.8	1 605	568	604	1 001	0			
	2012	1	35.8	1 719	749	751	968	...			
	2013	1	43.1	2 204	655	1 081	1 119	4			
Benin	2011	3	37	5 258	27	1 239	0	0			
	2012	6	...	6 969	409	2 927	0	0			
	2013	5	...	...	...	...	...	...			

<sup>1</sup> Only three centres prepare components by centrifugation. All the remaining hospital blood banks prepare red cell preparations and plasma by sedimentation.

<sup>2</sup> Data represent whole blood derived plasma for fractionation (685 674 units) and whole blood derived cryo-depleted plasma for transfusion (17 033 units).

<sup>3</sup> Data include 35 984 units of plasma for transfusion and 454 686 units of plasma for fractionation.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. units of blood components prepared from whole blood donations*					No. units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma
Bhutan	2011	2	28	2 316	721	1 124	...	0			
	2012	2	60.3	3 991	992	3 991	...	0			
	2013	3	50.8	4 484	995	4 329	155	0			
Bolivia	2011	18	100	...	...	...	...	...	0	200	0
	2012	18	96.4	87 732 <sup>4</sup>	33 855	65 806	9 813	5 988	0	200	0
	2013	18	96.7	90 129	31 599	76 667	9 970	6 449	0	200	0
Bosnia and Herzegovina	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Botswana	2011	2	100	13 871	927	1 083	0	0	0	14	0
	2012	2	100	17 546	1 102	1 247	0	0	0	40	0
	2013	2	100	20 207	5 787	15 419	0	0	0	57	0
Brazil	2011	571	...	2 857 994	1 627 882	2 493 545	396 592	127 183	...	...	...
	2012	530	82.4	3 231 788	2 031 891	2 689 156	477 826	215 615	...	...	...
	2013	—	—	—	—	—	—	—	—	—	—
Brunei Darussalam	2011	4	99.6	12 885	4 944	4 730	0	129	0	239	0
	2012	4	99.8	13 148	5 744	5 207	0	317	0	237	0
	2013	4	99.9	13 203	5 596	5 893	0	534	0	252	0
Bulgaria	2011	6	99.4	162 930	22 804	107 474	42 210	...	...	2 121	759
	2012	6	99.4	168 924	22 169	96 068	48 308	...	...	2 889	668
	2013	—	—	—	—	—	—	—	—	—	—
Burkina Faso	2011	4	69.1	59 286	923	1 449	0	0			
	2012	4	92.2	53 244	1 564	1 798	0	0			
	2013	4	91.4	54 678 <sup>5</sup>	1 023	1 663	0	0			
Burundi	2011	8	...	...	...	...	...	...	...	...	...
	2012	1	30.3	13 078	0	0	0	0	0	0	0
	2013	1	39.8	22 134	0	0	0	0	0	0	0
Cambodia	2011	4	15	6 800	203	6 696	0	0			
	2012	3	61.6	11 670	1 258	3 187	0	304			
	2013	3	52.1	16 525	401	2 855	0	443			
Cameroon	2011	—	—	—	—	—	—	—	—	—	—
	2012	0	0								
	2013	0	0								
Canada	2011	2	100	1 158 023	174 806 <sup>6</sup>	109 088	235 295	76 209	8 911	76 704	123 283
	2012	10	100	...	96 931 <sup>6</sup>	102 128	132 466	78 327	9 000	77 696	67 604
	2013	10	100	885 574	346 280	102 423	89 184	64 379	0	43 972	40 976
Cape Verde	2011	5	99.8	2 974	212	2 078	896	80			
	2012	6	98.4	...	...	...	...	...			
	2013	6	98.9	...	...	...	...	...			
Central African Republic	2011	—	—	—	—	—	—	—	—	—	—
	2012	1									
	2013	...									
Chad	2011	0	0								
	2012	1	2	342	10	342	0	0			
	2013	1	1.9	766	14	490	0	0			
Chile	2011	19	98.2	225 247	143 797	198 246	42 711	18 217	...	...	...
	2012	19	99.1	223 101	157 079	180 852	36 110	18 261	...	...	...
	2013	19	96.3	174 633	98 057	99 842	23 563	11 874	0	3 545	0
China	2011	452	...	...	...	...	...	...	...	...	...
	2012	396	95.9	18 813 656 <sup>6</sup>	493 932	3 481 738	13 926 951	1 821 004	...	986 098	...
	2013	448	...	...	...	...	...	...	...	1 158 622	...
Colombia	2011	94	98.1	709 645	319 094	557 971	105 040	51 762	12 607	115 049	934
	2012	85	97.7	727 692	335 088	576 324	121 685	44 277	24 893	122 026	4 420
	2013	87	97	718 127	321 141	557 757	118 137	61 187	...	154 481	...
Comoros	2011	0	0								
	2012	0	0								
	2013	0	0								
Congo	2011	17	88.8	46 937	393	286	0	0			
	2012	28 <sup>7</sup>	55.3	25 103	458	678	0	13			
	2013	2	53.8	35 944	367	542	0	2			
Cook Islands	2011	1	69.4	170	0	0	0	0			
	2012	1	61.6	137	1	0	0	0			
	2013	1	78.9	163	0	0	0	0			
Costa Rica	2011	30	98.8	65 947	50 450	65 947	...	12 945			
	2012	30	99.4	66 725	46 131	65 893	15 008	15 028	0	99	0
	2013	30	99.9	68 190	45 739	67 187	69	15 583	0	40	0
Côte d'Ivoire	2011	4	98.1	103 763	2 486	14 204	0	0			
	2012	4	85.1	117 999	2 884	17 270	0	0			
	2013	8	94.5	147 303	2 538	15 783	0	0			
Croatia	2011	13	99.7	174 561	66 753	82 597	91 947	2 980	0	17 246	2 586
	2012	12	98.7	176 740	76 678	94 357	85 200	3 387	0	2 646	2 764
	2013	9	98.8	177 684	80 737	97 448	80 276	2 870	0	3 277	3 277

<sup>4</sup> The number is bigger than the total whole blood collection.

<sup>5</sup> Of the 54 678 red cell concentrates prepared, 20 691 or 37.84% are paediatric units.

<sup>6</sup> One unit of red cells: preparation from 200 ml whole blood donations.

<sup>7</sup> All 28 centres prepare at least the red cells. Only Brazzaville and Pointe Noire centres prepare plasma components.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. units of blood components prepared from whole blood donations*					No. units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma
Cuba	2011	46	...	...	...	...	...	...	...	...	...
	2012	46	...	206 826	75 993	51 785	47 234	28 575	...	...	...
	2013	46	96.2	407 194	72 975	37 885	46 370	26 509	0	1 737	0
Cyprus	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	5	100	55 235	54 452	20 032	0	0	0	152	0
Czech Republic	2011	53	100	421 100	37 000	418 000	0	0	2 100	27 900	124 900
	2012	52	97.7	407 612 <sup>8</sup>	9 685 <sup>Δ</sup>	169 125	0	0	2 609	26 309	494 500 <sup>9</sup>
	2013	51	100	394 000	50 500	99 500	0	0	1 500	28 200	530 700
Democratic People's Republic of Korea	2011	12	60.5	58 806	...	...	58 806	...	...	...	...
	2012	12	62	60 809	2 840	...	60 809	...	...	...	...
	2013	12	70	—	6 240	18 600	44 600	...	...	...	...
Democratic Republic of the Congo	2011	3	74	273 983	78	31	309	0	...	...	...
	2012 <sup>10</sup>	4	73.2	273 886	67	48	412	0	...	...	...
	2013 <sup>11</sup>	4	75	293 811	1 632	4 897	26 117	0	...	...	...
Denmark	2011	7	100	308 000	44 000 <sup>Δ</sup>	307 000	0	...	0	2 000	3 000
	2012	5	100	291 229	42 214 <sup>Δ</sup>	290 322	0	0	0	2 518	3 086
	2013	7	100	283 000	43 000 <sup>Δ</sup>	285 000	0	500	0	2 000	5 000
Djibouti	2011	1	10	556	28	528	0	0	...	...	...
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Dominica	2011	1	96.4	1 005	467	649	0	25	...	...	...
	2012	1	95.4	902	470	514	0	36	...	...	...
	2013	1	96.3	1 031	464	683	0	23	...	...	...
Dominican Republic	2011	58	49.7	49 241	7 457	9 339	4 968	2 947	...	...	...
	2012	65	49.9	53 064	7 034	5 992	4 368	86	...	...	...
	2013	66	54.1	59 961	7 671	7 202	5 111	590	...	...	...
Ecuador	2011	17	89.9	190 443	65 732	133 746	...	6 490	...	...	...
	2012 <sup>12</sup>	—	97.5	78 809	43 234	64 480	3 416	3 526	0	1 399	0
	2013	11	97	220 621	99 825	174 668	27 755	5 733	0	1 713	0
Egypt	2011	24	99.9	354 441	109 444	275 915	74 005	51 066	0	1 166	1 166
	2012	23	99.8	421 801	123 349	329 035	25 913	68 106	0	15 785	1 257
	2013	24	99.8	420 439	108 387	319 377	25 929	68 126	0	19 472	1 145
El Salvador	2011	27	96.8	88 637	50 398	69 150	0	11 343	...	783	...
	2012	42	95.5	89 058	53 085	55 592	0	10 992	402	6 520	...
	2013	16	99.9	97 969	54 112	65 051	0	16 091	212	4 972	57
Equatorial Guinea	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Eritrea	2011	1	48.5	4 204	1 003	471	0	0	...	...	...
	2012	1	42.4	4 162	566	356	0	0	...	...	...
	2013	1	92.6	6 477	585	2 326	1	0	...	...	...
Estonia	2011	4	100	56 967	5 642 <sup>Δ</sup>	55 778	0	685	205	1 459	3 139
	2012	4	100	58 207	7 462 <sup>Δ</sup>	61 417	0	951	454	1 339	2 824
	2013	4	100	58 937	7 799 <sup>Δ</sup>	27 049	0	1 650	139	1 627	2 823
Ethiopia	2011	6	19.5	9 650	7 450	9 533	5	16	...	...	...
	2012	3	20.7	11 548	11 350	8 787	...	...	...	...	...
	2013	4	30.8	24 400	24 385	12 250	...	...	...	...	...
Fiji	2011 <sup>13</sup>	3	31.6	11 000	2 641	—	1 905	145	...	...	...
	2012	3 <sup>14</sup>	45.7	5 612	2 135	2 868	...	606	...	...	...
	2013	—	—	—	—	—	—	—	—	—	—
Finland	2011	2	100	257 597	185 356	23 901	233 572	0	0	799	4 668
	2012 <sup>15</sup>	2	100	236 600	43 500 <sup>Δ</sup>	0	240 000	0	0	624	7 860
	2013	1	100	212 654	37 234 <sup>Δ</sup>	0	212 654	0	0	666	1 248
France	2011	18	...	2 440 680	149 723 <sup>Δ</sup>	0	2 259 182	0	25 651	127 681	561 430
	2012	18	100	2 500 350	165 514 <sup>Δ</sup>	0	2 414 928	0	25 495	123 719	455 511
	2013	18	100	2 510 167	169 709 <sup>Δ</sup>	0	2 408 706	0	23 738	125 759	365 719
Gabon	2011	2	100	17 096	902	1 439	0	0	...	...	...
	2012	2	95.9	17 096	902	1 439	0	0	...	...	...
	2013	1	97.3	18 106	1 550	1 891	0	0	...	...	...
Gambia	2011	0	0	—	—	—	—	—	—	—	—
	2012	0	0	—	—	—	—	—	—	—	—
	2013	0	0	—	—	—	—	—	—	—	—
Georgia	2011	8	89.5	29 757	3 536	29 279	0	0	258	86	37
	2012 <sup>16</sup>	14	95	30 124	8 983	29 165	0	42	6	100	6
	2013	6	94.7	33 772	8 390	32 971	0	0	...	21	...
Germany	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	70	100	4 371 743	222 228 <sup>Δ</sup>	787 930	0	0	25 142	355 365	200 700

<sup>8</sup> FFP sent for fractionation is not included.<sup>9</sup> Apheresis plasma in litres.<sup>10</sup> The red cell concentrates are prepared by sedimentation in all centres. The concentrated platelets and FFP are prepared in four centres (Kinshasa, Monkole, North Kivu and South Kivu).<sup>11</sup> The separation in remote areas is done by simple decantation using a plasma extractor.<sup>12</sup> Partial data.<sup>13</sup> One major centre did not have its data reported and an estimation was made.<sup>14</sup> Data on component production only available from one blood centre.<sup>15</sup> In Finland, only solvent detergent-treated FFP is used.<sup>16</sup> This section presents data from six blood banks.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. units of blood components prepared from whole blood donations*					No. units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma
Ghana	2011	3	27.7	17 609	4 768	17 169	0	229			
	2012	2	11.4	7 544	2 486	7 136	0	284			
	2013	3	16.6	17 657	8 983	11 592	0	349			
Greece	2011	98	100	584 400	142 327	228 150	56 360	0	49	22 631	2 146
	2012	87	98.8	535 527	179 503	320 205	...	0	50	16 765	800
	2013	87	100	521 750	165 385	295 330	0	0	39	20 823	1 100
Grenada	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Guatemala	2011	58	84.8	89 772	38 423	49 392	...	623	79	1 411	...
	2012	57	87.3	98 650	42 631	53 603	...	1 225	...	...	...
	2013	61	88.2	107 542	44 059	57 086	2 526	1 376	20	2 396	24
Guinea	2011	...	...	...	...	...	...	...	...	...	...
	2012	1	0.3	96	0	0	0	0	0	0	0
	2013	1	0.8	352	0	0	0	0	0	0	0
Guinea-Bissau	2011	...	...	...	...	...	...	...	...	...	...
	2012	—	—	—	—	—	—	—	—	—	—
	2013	7	0	0	0	0	0	0	0	0	0
Guyana	2011	1	98	...	...	...	...	...	...	...	...
	2012	1	63.8	4 919	1 003	1 219	...	...	...	...	...
	2013	1	98.8	11 016	3 531	6 596	...	670	...	...	...
Haiti	2011	1	52	12 490	...	...	...	...	...	...	...
	2012	...	46.2	11 820	...	...	...	...	...	...	...
	2013	...	35.3	6 078	1 240	179	...	...	...	...	...
Honduras	2011	3	40.4	26 879	20 583	25 536	0	1 872	0	687	0
	2012	6	44.9	27 685	21 216	25 603	0	2 090	0	1 245	0
	2013	19	85	32 234	20 914	25 878	0	2 673	...	...	...
Hungary	2011	—	—	—	—	—	—	—	—	—	—
	2012	5	100	425 939	230 810	424 777	0	0	1 170	37 325	0
	2013	—	—	—	—	—	—	—	—	—	—
Iceland	2011	1	100	12 827	963 <sup>a</sup>	3 843	0	0	324	1 378	234
	2012	1	100	12 363	884 <sup>a</sup>	3 657	0	0	292	1 393	359
	2013	—	—	—	—	—	—	—	—	—	—
India	2011	—	—	—	—	—	—	—	—	—	—
	2012	175	60						...	...	...
	2013	258	60	...	...	...	...	...	...	...	...
Indonesia	2011	—	86	...	...	...	...	...	...	...	...
	2012	326	71.5 <sup>17</sup>	834 793	163 329	90 740	181 477	2 630	0	182	0
	2013	234	60.4	1 645 590	451 576	227 014	699 784	34 698	0	301	0
Iran (Islamic Republic of)	2011	91	97.5	1 932 179	961 358	1 660 285	129 847	115 574	40	2 018	857
	2012	92	99.9	1 998 201	1 092 808	1 710 793	150 149	151 354	0	4 297	7 475
	2013	91	95.9	1 832 863	1 075 518	1 660 107	173 404	195 118	0	2 586	3 165
Iraq	2011	15	31.4	157 059	124 393	85 341	63 220	59 835	0	1 064	0
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Ireland	2011	2	99.5	139 176	25 580	503	137 899	2 880	0	10 810	0
	2012	2	96	135 643	23 736	710	134 230	320	0	24 037	0
	2013	—	—	—	—	—	—	—	—	—	—
Israel	2011	—	—	—	—	—	—	—	—	—	—
	2012	8	96.3	287 471	183 871	66 276	219 236	35 244	0	535	1 246
	2013	8	96.6	268 122	175 203	57 854 <sup>18</sup>	209 354	39 449	0 <sup>19</sup>	1 126	1 158
Italy	2011	278	100	2 635 505	962 859	2 608 577	495 970	4 223	30 394	86 792	492 738
	2012	—	—	—	—	—	—	—	—	—	—
	2013	312	100	2 625 608	943 719	2 834 881	272 158	3 894	28 831	73 788	485 412
Jamaica	2011	3	46	9 877	2 917	9 249	628	759			
	2012	3	68.9	21 256	4 690	11 030	452	1 293			
	2013	3	71.3	...	1 432	2 963	327	412			
Japan	2011	27	99.9	3 511 219	0	810 157	0	0	0	814 399	193 225
	2012	7	99.9	3 330 791 <sup>20</sup>	0	817 919	0	0	0	919 895 <sup>21</sup>	194 816
	2013	7	94.7	3 488 283	0	898 714	0	0	0	845 948	208 435
Jordan	2011	4	91	95 800	86 325	94 774	0	75 797	0	50	0
	2012	4	92	102 867	80 750	102 867	0	40 317	0	50	0
	2013	4	93	105 441	79 364	105 441	0	44 215	0	55	0
Kazakhstan	2011	20	99.8	218 435	45 468	299 753	22 099	10 000	...	9 432	105 992
	2012	19	99.5	227 319	42 870	320 369	11 684	6 552	174	8 288	90 765
	2013	18	100	228 928	28 392	326 541	4 316	8 009	93	22 479	92 826
Kenya	2011	6	47.2	38 460	3 590	513	4 615	2 564	0		
	2012	6	41.4	61 663	3 228	1 745	2 770	1 437	0		
	2013	7	60.7	88 926	157	45 908	24 987	56	0		
Kiribati	2011	1	1.1	12	0	0	0	0	0		
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—

<sup>17</sup> 1 814 767 units of whole blood were separated. The reported units of blood components are partial data.

<sup>18</sup> Including 1 158 units collected through plasmapheresis.

<sup>19</sup> Data included are only for apheresis procedures performed by MDA centre.

<sup>20</sup> Adult-sized blood bag was 400 ml in Japan, and 200 ml bags were used as well. The 200 ml bag was counted as 0.5 unit for whole blood, red cells and FFP.

<sup>21</sup> For apheresis platelets, 200 x 10<sup>9</sup> platelets were counted as 1 unit of adult size; 400 x 10<sup>9</sup> platelets were calculated as 2 units in this table. The actual number of prepared bags of apheresis platelets was 837 323.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. units of blood components prepared from whole blood donations*						No. units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma	
Kuwait	2011	1	100	57 835	0	23 244	28 405	5 964	795	7 818	7 687	
	2012	—	—	—	—	—	—	—	—	—	—	
	2013	—	—	—	—	—	—	—	—	—	—	
Kyrgyzstan	2011	6	99.2	16 253	1 952	25 855	312	991	0	...	1 807	
	2012	6	99	5 011	1 879	5 414	75	1 405	...	...	1 716	
	2013	7	...	...	2 860	...	...	1 633	...	...	...	
Lao People's Democratic Republic	2011	1	27.9	6 462	119	948	21	0	—	—	—	
	2012	1	65.1	9 320	151	739	0	0	—	—	—	
	2013	2	62.4	11 510	580	905	13	0	—	—	—	
Latvia	2011	10	100	55 478	3 444	55 432 <sup>a</sup>	0	9 508	0	3 461	40	
	2012	10	99.2	52 763	7 720	52 763 <sup>a</sup>	0	6 606	0	3 998	0	
	2013	10	100	51 997	3 928	51 997 <sup>a</sup>	0	9 825	0	3 672	0	
Lebanon	2011	—	—	—	—	—	—	—	—	—	—	
	2012	—	—	—	—	—	—	—	—	—	—	
	2013	52	...	...	...	...	...	...	0	13 000	0	
Lesotho	2011 <sup>22</sup>	1	0.6	36	16	20	0	0	—	—	—	
	2012	1	4.3	300	26	292	8	0	—	—	—	
	2013	1	43.4	3 465	152	441	2 872	0	0	12	12	
Liberia	2011	0	0	—	—	—	—	—	—	—	—	
	2012	—	—	—	—	—	—	—	—	—	—	
	2013	0	0	—	—	—	—	—	—	—	—	
Libya	2011	—	—	—	—	—	—	—	—	—	—	
	2012	—	—	—	—	—	—	—	—	—	—	
	2013	...	...	...	...	...	...	...	...	...	...	
Lithuania	2011	—	—	—	—	—	—	—	—	—	—	
	2012	4	...	91 793 <sup>23</sup>	13 385 <sup>a</sup>	81 223 <sup>24</sup>	...	2 335	0	12 436	11	
	2013	—	—	—	—	—	—	—	—	—	—	
Luxembourg	2011	1	99.9	20 306	8 700	20 580	0	0	0	799	5 265	
	2012	1	100	20 534	10 228	1 027	19 507	0	0	1 001	3 132	
	2013	1	100	20 280	10 809	5 957	...	0	0	777	3 332	
Madagascar	2011	7 <sup>25</sup>	5.2	1 127	—	1 127	0	0	—	—	—	
	2012	7	5.5	1 365	—	941	0	0	—	—	—	
	2013	7	35.8	8 271	—	2 728	0	0	—	—	—	
Malawi	2011	3	8	6 298	1 604	2 046	0	337	—	—	—	
	2012	3	7.8 <sup>26</sup>	9 250	1 782	1 986	0	214	—	—	—	
	2013	3	6.9	6 924	1 753	1 444	—	142	—	—	—	
Malaysia	2011	17	...	472 560	237 461	309 069	15 903	87 684	0	7 700	8 970	
	2012	22	...	699 742	243 076	315 757	10 074	94 880	3	8 707	10 074	
	2013	20	70.5	449 150	247 993	342 228	11 711	88 489	0	7 961	8 682	
Maldives	2011	...	...	...	...	...	...	...	—	—	—	
	2012 <sup>27</sup>	...	100	7 291	572	490	15	0	—	—	—	
	2013	2	100	5 826	0	0	0	0	—	—	—	
Mali	2011	2	13.2	6 151	592	602	0	0	—	—	—	
	2012	—	—	—	—	—	—	—	—	—	—	
	2013	3	32.1	11 951	634	2 140	0	0	—	—	—	
Malta	2011	—	—	—	—	—	—	—	—	—	—	
	2012	—	—	—	—	—	—	—	—	—	—	
	2013	—	—	—	—	—	—	—	—	—	—	
Marshall Islands	2011 <sup>28</sup>	2	45.5	131	0	0	0	0	—	—	—	
	2012	—	—	—	—	—	—	—	—	—	—	
	2013	—	—	—	—	—	—	—	—	—	—	
Mauritania	2011	1	95.8	8 775	2 531	2 762	0	0	—	—	—	
	2012	1	97.4	10 538	1 522	9 016	0	0	—	—	—	
	2013	1	100	10 850	1 274	9 234	0	0	—	—	—	
Mauritius	2011	1	41.5	18 805	15 452	15 458	363	726	14	117	0	
	2012	1	46.3	20 945	18 155	18 155	159	662	10	107	0	
	2013	1	49.9	24 625	19 946	19 958	5	690	5	102	0	
Mexico	2011	558	96	1 487 049	736 627	1 463 227	0	91 291	0	68 296	0	
	2012	556	95.2	1 625 920	722 113	1 311 483	279 037	99 018	0	54 371	0	
	2013	556	96.8	1 321 413	659 179	905 769	264 522	151 122	0	74 961	0	
Micronesia (Federated States of)	2011 <sup>29</sup>	2	23.3	419	53	0	0	0	—	—	—	
	2012	2	65	1 193	327	8	0	0	—	—	—	
	2013	2	64.4	1 235	89	0	0	0	—	—	—	
Monaco	2011	—	—	—	—	—	—	—	—	—	—	
	2012	—	—	—	—	—	—	—	—	—	—	
	2013	—	—	—	—	—	—	—	—	—	—	
Mongolia	2011	26	99.3	15 447	4 074	15 809	1 075	0	0	0	14 283	
	2012	26	...	17 575	4 748	19 454	4 838	4 231	0	0	2 493	
	2013	27	99.8	17 261	5 137	22 055	3 216	2 468	0	0	1 866	

<sup>22</sup> Component preparation only started in September 2011.

<sup>23</sup> Red cells from whole blood + apheresis: 91 793 units.

<sup>24</sup> FFP from whole blood + apheresis: 81 223 units.

<sup>25</sup> CNTS and six CRTS preparing blood components.

<sup>26</sup> The percentage is 87%, based on data from the National Blood Service.

<sup>27</sup> Data given in this section are from Maldivian blood services and IGMH only.

<sup>28</sup> Red cells and plasma can only be prepared by leaving the whole blood to stand for some time in the fridge or at room temperature if it is going to be used soon. But there is hardly any request for plasma.

<sup>29</sup> Two of five blood banks have a component centrifuge. Blood centres without such a centrifuge prepare packed red cells by gravity sedimentation. These units have not been counted as red cell preparations.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. of units of blood components prepared from whole blood donations*					No. of units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma
Montenegro	2011 <sup>30</sup>	3	100	6 500	3 200	6 000	0	500			
	2012	3	74.3	11 678	4 790	11 678	0	512			
	2013	3	79.1	11 267	4 766	11 267	0	623			
Morocco	2011	16	97.5	226 230	129 254	148 700	0	0	0	133	0
	2012	16	96.9	240 152	133 418	160 101	0	0	0	182	0
	2013	16	99.7	291 735	280 576	256 287	0	0	0	122	0
Mozambique	2011	153	100	...	...	...	...	...	...	...	
	2012	153	100	...	...	...	...	...	...	...	
	2013	153	100	...	...	...	...	...	...	...	
Myanmar	2011 <sup>31</sup>	1	25.6	9 042	2 671	6 253	118	118	0	53	0
	2012 <sup>32</sup>	25	59.4	10 203	141	7 330	2 749	388	0	11	0
	2013 <sup>33</sup>	25	79.5	10 704	1 841	11 113	760	111	0	399	0
Namibia	2011	1	99	23 105	0	3 235	19 870	0	0	1 063	158
	2012	1	99.9	0		0	0	0	0	978	0
	2013	1	99.8	26 487	0	4 296	0	0	0	1 315	0
Nauru	2011	1 <sup>34</sup>	...	...	...	...	...	...	...	...	
	2012	—	—	—	—	—	—	—	—	—	
	2013	—	—	—	—	—	—	—	—	—	
Nepal	2011	10	20.5	36 339	10 902	21 803	1 817	1 817			
	2012	8	31.5	43 247	21 408	21 408	215	216	0	12	0
	2013	12	25.6	51 487	20 595	28 317	2 574	2 550	0	20	0
Netherlands	2011	4	100	544 324	290 623	544 324	0	0	0	0	347 554
	2012	4	100	506 671	285 643	506 671	0	0	0	0	321 184 <sup>35</sup>
	2013	1	100	459 840	288 125	67 772	453 313	0	0	0	3 878 259 156
New Zealand	2011	5	100	147 093	8 193 <sup>a</sup>	10 077	126 554	0 <sup>36</sup>	0	12 298	42 889
	2012	5	100	139 845	32 328	4 061	130 474	0	0	12 450	46 250
	2013	4	100	125 395	8 832 <sup>a</sup>	904	120 023	0	0	10 133	45 608
Nicaragua	2011	2	95.3	70 439	35 229	30 698	...	2 990			
	2012	2	98.8	72 083	38 631	67 101	4 982	4 997			
	2013	2	98.6	71 664	40 602	62 801	2 603	4 781			
Niger	2011	4	8.7	4 030	105	4 363	0	0			
	2012	1 <sup>37</sup>	1.7	1 200	42	1 242	0	0			
	2013	1	1.6	1 250	5	1 250	1 250	0			
Nigeria	2011	1	1.4	465	320	494	0	0			
	2012	0	...	...	...	...	...	...			
	2013 <sup>38</sup>	1	...	1 220	915	1 283	0	16			
Niue	2011	0	0								
	2012	0	0								
	2013	0	0								
Norway	2011	39	100	198 052	30 121 <sup>a</sup>	195 708	0	0	7 502	8 460	5 758
	2012	33	100	195 023	23 401 <sup>5,39</sup>	173 847	13 484	0	7 788	10 324	8 970
	2013	—	—	—	—	—	—	—	—	—	—
Oman	2011	—	—	—	—	—	—	—	—	—	—
	2012	14	36 448	24 532	23 517	0	1 455	0	219	0	
	2013	15	77.2	40 897	29 654	6 677	108	0	92	0	
Pakistan	2011	96	29.6	229 410	134 203	164 982	577	10	0	7 254	18
	2012	113	23.9	306 830	110 388	237 859	...	...	0	2 190	...
	2013	63	30.1	710 500	556 335	495 681	...	...	0	2 312	1 200
Palau	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Panama	2011	17	79	42 990	30 700	18 639	...	14 553			
	2012	...	90.3	49 361	28 115	23 102	...	3 465	340	1 644	0
	2013	18	81.1	43 469	27 692	20 603	0	3 547	0	2 801	0
Papua New Guinea	2011 <sup>40</sup>	1	70.1	4 417	146	128	0	0			
	2012	1	74.9	15 799	202	165	0	1			
	2013	36	...	17 221	412	173	0	7			
Paraguay	2011	11	75.4	55 865	32 244	44 155	...	1 758	0	87	0
	2012	8	73	32 051	16 169	25 795	5 019	568	...	...	...
	2013	5	83.6	71 982	49 726	60 869	26 562	5 878	...	...	...
Peru	2011	87	85.2	120 318	68 038	88 132	...	11 720			
	2012	88	88.4	146 035	86 253	104 010	25 746	10 610	0	8 235	0
	2013	89	90.7	185 717	105 145	138 344	29 142	18 071	0	9 611	0
Philippines	2011	126	44	226 467	118 468	111 014	11 705	13 371	130	1 597	509
	2012	84	39.8	210 240	138 802	132 792	33 897	8 100	1 398	2 525	528
	2013	60	56.5	240 624	169 298	157 529	20 503	10 300	...	1 996	1

<sup>30</sup> Data refer only to the blood transfusion centre of Montenegro.

<sup>31</sup> Data only cover NBC.

<sup>32</sup> Data only cover NBC.

<sup>33</sup> Data only cover NBC.

<sup>34</sup> Plasma can be produced by standing the blood at room temperature until the plasma and the red cells separate.

<sup>35</sup> In 2012 all FFP was apheresis plasma. Apheresis plasma was also collected for fractionation.

<sup>36</sup> Cryoprecipitate in New Zealand is prepared from apheresis plasma.

<sup>37</sup> Only the CRTS in the capital prepares blood components.

<sup>38</sup> The data given in this section are from Lagos State Blood Transfusion Service.

<sup>39</sup> One unit of platelets made from whole blood is from four buffy coats.

<sup>40</sup> The data given on blood components are only for the centre preparing blood components: Port Moresby BTS.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. units of blood components prepared from whole blood donations*					No. units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma
Poland	2011	23	99.8	1 152 151	337 962	1 214 494	6 742	13 729	193	34 592	70 109
	2012	23	99.9	1 151 408	345 546	1 211 511	3 410	12 314	731	42 806	71 234
	2013	23	98.2	1 154 264	332 752	1 138 666	20 159	18 742	158	40 015	73 253
Portugal	2011	22	...	396 495	126 643	117 754	0	2 056	1 046	5 181	0
	2012	21	90.9	350 473	186 062	43 642	0	1 221	968	4 916	0
	2013	21	97.3	346 735	154 640	148 282	303	993	960	5 038	0
Qatar	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	1	86	19 898	12 935	9 238	1 281	2 751	0	531	0
Republic of Korea	2011	...	...	...	...	...	...	...	...	...	...
	2012	17	99.8	2 161 103	293 494	2 081 559	87 101	66 766	0	138 282	404 114
	2013	17	99.6	3 607 610	1 687 049	1 992 790	163 547	76 357	0	158 856	634 489
Republic of Moldova	2011	2	99.9	71 416 <sup>41</sup>	10 347	74 020 <sup>42</sup>	14 905 <sup>43</sup>	14 905	0	0	8 957
	2012	2	99.7	69 142	10 415	83 582	...	12 083	0	0	0
	2013	2	99.8	71 551	9 346	71 551	13 550 <sup>44</sup>	13 550	0	0	7 372
Romania	2011 <sup>45</sup>	42	...	329 877	86 406	293 892	...	16 485	0	6 232	5
	2012 <sup>46</sup>	42	84.6	338 274	104 117	302 799	10 395	17 751	0	7 642	0
	2013	42	88.5	377 923	101 146	334 930	...	20 333	0	9 032	0
Russian Federation	2011	552	96	1 705 217	530 294	1 987 788	42 524	29 273	0	0	1 529 044
	2012	516	96	1 773 568	613 669	2 167 947	9 961	28 150	0	0	1 408 140
	2013	458	96.3	1 922 284	607 228	1 977 540	15 348	23 663	0	0	1 382 264
Rwanda	2011	5	95.3	36 026	9 271	7 250	0	0	0	0	0
	2012	5	100	40 520	10 536	8 510	0	0	0	0	0
	2013	5	100	...	...	...	...	...	...	...	...
Saint Kitts and Nevis	2011	1	10.8	37	0	37	0	0	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	1	9.1	30	—	30	0	0	—	—	—
Saint Lucia	2011	1	100	2 300	1 213	552	183	0	—	—	—
	2012	1	...	...	...	...	...	...	—	—	—
	2013	1	...	2 077	782	392	129	...	—	—	—
Saint Vincent and the Grenadines	2011	1	92.9	1 705	164	166	0	0	—	—	—
	2012	1	92.4	1 183	216	216	0	0	—	—	—
	2013	1	98.6	1 145	251	257	0	0	—	—	—
Samoa	2011	2	100	2 448	52	22	4	0	—	—	—
	2012	2	86.7	1 930	12	25	0	0	—	—	—
	2013	2	97.2	1 930	28	25	0	0	—	—	—
San Marino	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	1	...	689	0	22	...	0	—	—	—
Saudi Arabia	2011	157	85	378 250	192 145	339 165	39 085	32 710	258	11 527	1 324
	2012	—	—	—	—	—	—	—	—	—	—
	2013	161	87	361 050	188 525	361 050	0	31 623	600	29 365	1 131
Senegal	2011	2	19	9 400	570	9 400	0	0	0	0	0
	2012	2	16.2	9 330	154	4 427	9 330	0	0	0	0
	2013	2	51.8	28 742	702	28 742	...	0	0	0	0
Serbia	2011	25	69.2	162 017	72 250	72 250	...	95 590	0	2 189	...
	2012	47	92.6	212 618	88 072	182 823	24 912	25 007	0	1 967	1 149
	2013	46	92.7	215 570	89 294	185 361	23 334	25 354	0	1 821	972
Seychelles	2011	—	—	—	—	—	—	—	—	—	—
	2012	1	...	120	25	125	125	0	—	—	—
	2013	1	1.07	8	8	0	0	0	—	—	—
Sierra Leone	2011	0	0	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	0	0	—	—	—	—	—	—	—	—
Singapore	2011	1	98	110 973	60 087	37 539	75 451	11 362	40	8 971	1 218
	2012	1	96.8	114 616	56 860	30 312	83 221	8 901	37	9 280	663
	2013	1	98.4	117 341	67 766	33 655	71 715	13 100	38	8 706	990
Slovakia	2011	41	99.6	196 597	2 817 <sup>44</sup>	193 520	0	4	361	12 017	453
	2012	36	97.9	199 641	14 410 <sup>44</sup>	193 144	0	0	170	12 493	915
	2013	36	97.3	205 223	4 150 <sup>44</sup>	202 492	0	4	79	10 868	302
Slovenia	2011	3	98	96 753	9 233 <sup>44</sup>	34 671	62 318	0	0	2 767	721
	2012	3	100	92 068	9 269 <sup>44</sup>	31 791	57 493	0	0	2 343	623
	2013	3	100	87 794	9 459 <sup>44</sup>	86 954	0	0	0	2 114	902
Solomon Islands	2011	1	...	—	—	—	—	—	—	—	—
	2012	0	0	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—

<sup>41</sup> Data include 24 paediatric doses of red cells.<sup>42</sup> Data include 2628 paediatric doses of FFP and units of products which were later manufactured: cryoprecipitate and cryosupernatant.<sup>43</sup> Cryosupernatant.<sup>44</sup> Cryosupernatant.<sup>45</sup> Detailed data are not reported at national level.<sup>46</sup> Figures represent data for the 41 blood centres.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. units of blood components prepared from whole blood donations*					No. units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma
Somalia	2011	0	0								
	2012	0	0								
	2013	3	...	...	...	...	...	...			
South Africa	2011	13	97.2	907 203	162 956	773 051	108 437	60 888	0	32 209	9 732
	2012	10	99.9	893 328	59 925 <sup>49</sup>	728 057	114 823	75 809	2 000	34 168	11 786
	2013	10	99.7	902 945	195 525	768 739	121 362	68 219	3 719	33 661	10 947
South Sudan	2011	0	0								
	2012	0	0								
	2013	0	0								
Spain <sup>47</sup>	2011	20	97	1 691 365	1 023 868	455 779		3 509	12 528	33 426	24 630
	2012	20	97	1 672 095	966 394	445 938		3 103	13 212	31 038	20 155
	2013	20	97	1 613 075	952 607	430 414	717 <sup>48</sup>	2 672	10 402	30 138	19 795
Sri Lanka	2011	64	100	335 746	179 315	294 910	6 494	33 499	0	810	0
	2012	25	100	348 595	199 489	319 869	44 676	101 468	0	8 850	0
	2013	25	100	380 760	189 879	380 732	...	88 810	0	1 636	0
Sudan	2011	7	...	...	...	...	...	...	...	...	
	2012	31	46.8	83 515	43 714	44 914	0	9 000			
	2013	15	55.9	101 371	46 783	47 814	0	...			
Suriname	2011	...	9 946	1 973	1 756						
	2012	1	98.3	9 848	2 234	2 002	...	0			
	2013	1	98.4	9 939		1 927	2 124	0			
Swaziland	2011	1	100	11 300	563	10 737	0	0			
	2012	1	100	13 495	0	0	0	0			
	2013	—	—	—	—	—	—	—	—	—	—
Sweden	2011	30	100	484 224 <sup>49</sup>	262 995	145 092	0	0	1 676	9 355	55 337
	2012	30	100	464 048 <sup>50</sup>	270 825	182 893	0	0	1 546	7 895	46 274
	2013	29	100	450 918	30 862 <sup>51</sup>	69 265	0	0	...	14 916	...
Switzerland	2011	13	100	386 720	40 960	51 079	0	0	1 403	24 840	6 470
	2012	13	100	418 067	8 917 <sup>52</sup>	76 105	0	0	1 277	25 271	8 640
	2013	13	100	...	...	...	0	0	1 000	24 000	13 500
Syrian Arab Republic	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Tajikistan	2011	4	100	27 684	408	31 841	3 367	3 367	...	87	2 670
	2012	4	100	...	...	...	...	...	...	...	...
	2013	5	100	25 349	490	41 547	0	6 845	0	283	18 372
Thailand <sup>51</sup>	2011	6	96.9	572 953	278 979	190 568	384 570	242 318	2 884	10 521	2 205
	2012	6	96.4	591 697	286 875	183 734	243 699	221 774	2 334	11 629	1 662
	2013	6	...	622 519	139 294	447 202	175 317	224 683	2 026	12 532	5 226
The former Yugoslav Republic of Macedonia	2011	17	99	55 975	21 977	55 975	...	5 845	0	640	0
	2012	17	97	46 849	21 495		47 068	11 961	0	52	0
	2013	15	95.7	27 246	24 929	29 100	...	6 390	...	...	...
Timor-Leste	2011	—	—	—	—	—	—	—	—	—	—
	2012	1	...	1 937	457	846	634	0			
	2013	1	74.7	1 500	500	1 500	500	0			
Togo	2011	1	68.9	26 973	876	4 221	0	0			
	2012	1	66.3	26 972	171		0	0			
	2013	1	66.4	28 196	429	3 000	0	0			
Tonga	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Trinidad and Tobago	2011	3	...	...	...	...	...	...	...	...	...
	2012	1	33.1	6 726	3 480	4 392	...	348			
	2013	1	36.4	7 766	4 221	5 253	4 221	...			
Tunisia	2011	32 <sup>52</sup>	...	...	...	...	...	...	...	...	2 546
	2012	32	89	171 639	62 614	114 426	57 213	1 200	0	2 427	0
	2013	24	92.8	196 484	84 629	150 252	13 545	3 442	0	2 221	0
Turkey	2011	15	97.8	1 237 750	347 406	695 797	40 732	1 603	96	11 143	0
	2012	71	95.7	2 169 354	761 154	1 328 291	762 943	7 440	5 098	113 121	7 688
	2013	...	...	...	...	...	...	...	...	...	...
Turkmenistan	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Tuvalu	2011	1	100	94	0	0	0	0	0	0	0
	2012	1	100		0	0	0	0	0	0	0
	2013	1	90.2	92	0	0	0	0	0	0	0
Uganda	2011	7	35	131 910	51	51	70 978	...			
	2012	7	...	...	...	...	...	...			
	2013	7	60	121 761	6 392	320	49 025	16			

<sup>47</sup> National data covering 20 blood centres in the country.<sup>48</sup> Cryosupernatant. Subnational data.<sup>49</sup> Platelets: 52 599 doses of platelets were prepared, each contains 4–6 BC units. Medium of 5 is used:  $5 \times 52 599 = 262 995$ .<sup>50</sup> Platelets: 54 165 doses of platelets were prepared, each contains 4–6 BC units. Medium of 5 is used:  $5 \times 54 165 = 270 825$ .<sup>51</sup> Percentage of component separation and units of components prepared are only from the National Blood Centre (Bangkok). Six blood centres prepare blood components: National Blood Centre (Bangkok), and regional blood centres in Chonburi, Ubonrachathanee, Chiengmai, Songkhla and Phuket.<sup>52</sup> Six centres + 26 blood banks.

Country	Data year	No. blood centres that prepare blood components	% whole blood donations separated	No. units of blood components prepared from whole blood donations*					No. units of blood components prepared through apheresis procedures		
				Red cells	Platelets	Fresh frozen plasma	Plasma	Cryo-precipitate	Apheresis red cells	Apheresis platelets**	AP-plasma
Ukraine	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
United Arab Emirates	2011	17	99.5	101 560	82 340	90 230	0	4 500	50	2 976	1 670
	2012	14	99.1	96 503	74 118	37 400	0	4 503	112	5 197	0
	2013	14	98	101 602	30 464	41 586	2 987	7 252	37	7 552	2 073
United Kingdom of Great Britain and Northern Ireland	2011	...	...	...	...	...	...	...	...	...	...
	2012	4	100	...	...	...	...	...	...	...	...
	2013 <sup>53</sup>	4	97.5	260 458	41 320	36 478	0	13 135	0	22 816	0
United Republic of Tanzania	2011	6	4.4	3 923	732	3 761	0	0			
	2012	6	14.8	16 109	1 629	3 914	195	0			
	2013	7	23	18 609	2 495	6 030	1 220	0			
United States of America	2011	128	87.2	13 743 000	1 762 000 <sup>54</sup>	1 813 000	5 475 000	1 690 000	1 978 000	2 516 000	451 000
	2012 <sup>54</sup>	43	96	6 014 090	570 737 <sup>54</sup>	223 233	1 760 525	850 949	1 081 058	1 142 937	140 752
	2013	...	89.3	5 023 617	454 719 <sup>54</sup>	185 298	1 553 716	554 437	694 510	943 149	56 115
Uruguay	2011	60	...	...	...	...	...	...	...	...	...
	2012	56	...	...	...	...	...	...	...	1 408	...
	2013	51	...	...	...	...	...	...	...	1 336	...
Uzbekistan	2011	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—
Vanuatu	2011	2	64.4	895	...	...	...	...	...	...	...
	2012	—	—	—	—	—	—	—	—	—	—
	2013	2	100	770	20	50	25	25			
Venezuela (Bolivarian Republic of)	2011	280	95	395 529	338 666	338 866	38 693	37 652			
	2012	316	95.2	393 654	231 787	326 024	26 631	26 631			
	2013	—	—	—	—	—	—	—	—	—	—
Viet Nam <sup>55</sup>	2011	47	78.4	583 754	62 508	110 364	20 632	24 310 <sup>54</sup>	0	35 439	0
	2012	47	70.5	591 847	68 337	203 765	25 458	27 562 <sup>54</sup>	0	34 542	0
	2013	47	71.1	647 870	63 352	274 291	35 542	30 673 <sup>54</sup>	0	41 375	0
Yemen	2011	—	—	—	—	—	—	—	—	—	—
	2012	2	100	16 300	16 300	9 800	6 500	0			
	2013	—	—	—	—	—	—	—	—	—	—
Zambia	2011	2	10.4	8 216	2 119	8 216	0	500			
	2012	2	9.3	10 100	3 100	9 800	0	600			
	2013	2	10.6	12 000	8 000	12 000	0	120			
Zimbabwe	2011	3	57.2	43 476	1 569	4 626	0	89	0	160	160
	2012	5	99.4	61 721	1 574	5 582	0	217		107	107
	2013	5	95.8	54 507	2 500	9 169	0	413		15	15

<sup>53</sup> Data in this section were provided by the Scottish National Blood Transfusion Service (SNBTS) and Welsh Blood Service (total collection of 271 262 was reported in the year).

<sup>54</sup> Data are from all three centres (BSI, ARC and NYBC). BSI WB denominator = 654 791, ARC WB denominator = 5 387 891, NYBC WB denominator = 320 000.

<sup>55</sup> One unit of whole blood derived platelets is defined as the preparation from 1000 ml whole blood (pool of platelets preparation from 4 bags of 250 ml or 3 bags of 350 ml whole blood)

## Annex 9      Clinical use of blood and blood components 2011–2013

... Not reported/not available.

Blank: Not required/not applicable.

— No response.

\* Except stated/explained otherwise, 1 unit of blood component is defined as the preparation from whole blood donations of 450 ml.

\*\* 1 unit of apheresis platelets usually contains 200–450 × 10<sup>9</sup> platelets.

△ In adult therapeutic doses.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country					
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma
Afghanistan	2011	108	50 358	1 709	0	...	1 709	0
	2012	108	71 397	2 049	0	...	2 049	0
	2013	154	69 434	2 454	0	...	2 454	0
Albania	2011	32	882	22 943	5 516	...	11 504	11 521
	2012	32	...	...	...	...	...	...
	2013	32	...	...	...	...	...	...
Algeria	2011	...	25 583	360 614	72 827	4 065	59 075	0
	2012	195	28 595	384 176	79 740	...	63 145	0
	2013	...	18 387	410 633	81 395	4 264	...	0
Andorra	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Angola	2011	...	...	...	...	...	...	0
	2012	130	...	...	1 758	...	3 142	...
	2013	139	...	...	...	...	...	0
Antigua and Barbuda	2011	4	248	947	159	...	356	71
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Argentina	2011	2 467	26 366	885 225	367 500	19 200	212 400	0
	2012	...	28 476	933 747	322 723	34 900	199 677	0
	2013	2 429	5 943	641 790	300 550	51 000	117 373	59 425
Armenia	2011	...	0	10 615	1 755	13	11 161	0
	2012	...	0	11 294	2 129	30	11 087	0
	2013	...	0	11 387	2 047	18	11 056	0
Australia	2011	373	0	801 295	319 184	53 474	158 516	13 756
	2012	...	0	763 551	335 916	50 597	147 641	16 675
	2013	315	0	703 359	322 016	50 094	132 228	9 190
Austria	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Azerbaijan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Bahamas	2011	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...
Bahrain	2011	14	...	15 253	5 042	...	6 232	35
	2012	17	1 440	17 463	15 432	175	13 929	51
	2013	16	1 380	17 342	15 508	213	14 155	0
Bangladesh	2011	226	326 603	37 515	21 359	141	24 526	303
	2012	210	534 934	53 231	25 783	...	31 787	13
	2013	327	587 285	63 231	25 783	270	31 847	0
Barbados	2011	—	—	—	—	—	—	—
	2012 <sup>1</sup>	3	...	5 340	1 028	107	1 422	...
	2013	—	—	—	—	—	—	—
Belarus	2011	389	...	174 056	78 700	...	148 851	...
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—

<sup>1</sup> The exact whole blood and red cell figures were not readily available. The figure of 5340 for red cells was an estimate derived by finding the average of four months and multiplying by 12. Whole blood transfusions would have accounted for less than 1% of red cell transfusions. No figures for plasma were available.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country						
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma	Cryo-precipitate
Belgium	2011	114	0	510 064	35 789 <sup>Δ</sup>	33 553	84 402	0	0
	2012	114	0	504 491	33 437 <sup>Δ</sup>	36 010	87 238	0	0
	2013	113	0	476 049	33 040 <sup>Δ</sup>	36 760	84 209	0	0
Belize	2011	10	1 898	2 048	174		537	71	0
	2012	13	1 130	1 398	114		339	111	4
	2013	13	1 130	1 398	114		339	111	...
Benin	2011	50	...	...	...		...	...	...
	2012	50	76 529	6 969	409		2 929	0	0
	2013	50	87 274	15 974	770		2 484	0	0
Bhutan	2011	29	3 192	3 740	648		799	...	0
	2012	29	2 160	3 899	738		716	...	0
	2013	29	3 843	4 605	812		692	...	0
Bolivia	2011	2 840	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...	...
	2013	...	1 127	79 606	18 643	200	36 343	254	4 173
Bosnia and Herzegovina	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Botswana	2011	33	...	16 562	929	14	1 083	0	0
	2012	33	66	16 133	915	40	1 198	0	0
	2013	33	394	17 123	821	57	1 621	0	0
Brazil	2011	...	72 308	1 709 977	570 081	30 421	422 937	8 286	77 042
	2012	...	62 986	1 813 441	580 124	34 774	431 429	7 561	81 289
	2013	—	—	—	—	—	—	—	—
Brunei Darussalam	2011	...	10	11 513	1 486	121	1 376	...	134
	2012	4	15	11 021	2 754	173	2 364	0	380
	2013	4	10	11 498	3 068	128	2 793	0	380
Bulgaria	2011	172	305	160 108	20 054	2 118	84 930	0	...
	2012	249	319	168 131	19 932	2 894	90 294	26	...
	2013	—	—	—	—	—	—	—	—
Burkina Faso	2011	78	5 542	72 399	64		786	4	0
	2012	78	21 265	41 603	647		59	0	0
	2013	93	28 198	47 650	992		1 063	0	0
Burundi	2011	49	25 334	10 858	0		0	0	0
	2012	69	39 192	13 078	0		0	0	0
	2013	89	28 549	22 134	0		0	0	0
Cambodia	2011	45	31 990	6 000	150		2 000	0	0
	2012	43	26 339	11 670	1 258		3 187	0	304
	2013	53	22 021	16 525	401		2 855	0	443
Cameroon	2011	—	—	—	—	—	—	—	—
	2012	100	18 539						
	2013	63	39 320						
Canada <sup>2</sup>	2011	558	0	833 318	80 247 <sup>Δ</sup>	43 046	...	204 992	50 829
	2012	558	0	830 387	319 360	38 432	...	163 491	53 799
	2013	558	0	812 907	318 048	40 054	...	155 071	60 832
Cape Verde	2011	5	6	2 866	138	0	383	...	34
	2012	6	8	3 186	103	0	325	31	155
	2013	6	6	3 088	180	0	470	...	138
Central African Republic	2011	—	—	—	—	—	—	—	—
	2012	...	15 000						
	2013	11	...	...	...	0	...	...	...
Chad	2011	59							
	2012	80	34 512	342	10		200	0	0
	2013	66	54 362	766	14		490	0	0
Chile	2011	62	0	201 182	87 664	...	77 344	...	14 392
	2012	75	...	198 817	88 219	2 911	77 835	464	11 874
	2013	76	...	...	...	...	...	...	...
China	2011	168 134	18 286 78 <sup>3</sup>	595 128	1 177 727	6 503 688	9 702 671	142 609	
	2012	23 170	...	...	...	...	...	...	...
	2013	91 992	19 503 558	433 739	1 144 198	...	...	...	...
Colombia	2011	370	8 331	634 831	195 536	132 621	244 318	15 013	60 288
	2012	...	1 129	534 731	153 901	71 499	177 609	0	29 605
	2013	414	...	...	...	...	...	...	...

<sup>2</sup> The issued data were used to complete this section. Plasma data include apheresis 250 ml/500ml, cryosupernatant, frozen plasma.

<sup>3</sup> 1 unit of red cells: preparation from 200 ml whole blood donations.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country					
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma
Comoros	2011	5	2 403					
	2012	5	2 200					
	2013	5	2 260					
Congo	2011	...	8 333	35 094	259		264	0
	2012	50	9 815	34 512	216		531	10
	2013	39	7 975	37 757	203		547	2
Cook Islands	2011	3 <sup>4</sup>	38	193	0			
	2012	3	48	137	1			
	2013	3	20	167	0	0	0	0
Costa Rica	2011	...	...	...	...	...	...	...
	2012	32	...	...	...	...	...	...
	2013 <sup>5</sup>	32	68	1 110	92	14	100	...
Côte d'Ivoire	2011	...	1 392	87 708	1 776		2 852	0
	2012	...	14 975	99 449	2 193		3 311	0
	2013	200	5 858	145 306	1 748		2 739	0
Croatia	2011	37	20	166 540	...	...	60 074	355
	2012	37	3	166 762	72 347 <sup>6</sup>	...	59 107	...
	2013	37	...	157 793	88 341 <sup>7</sup>	...	48 296	...
Cuba	2011	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...
	2013	152	...	337 788	43 844	...	37 190	4 259
Cyprus	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	52	...	53 518	15 211	152	16 683	...
Czech Republic	2011	... <sup>8</sup>	404	377 900	32 800	25 800	187 400	
	2012	188 <sup>9</sup>	404	377 938	8 248 <sup>Δ</sup>	25 809	187 388	
	2013 <sup>10</sup>	188	637	368 367	43 500	27 500	41 250 <sup>11</sup>	
Democratic People's Republic of Korea	2011	1 708	38 422	58 806	...	...	58 806	...
	2012	1 708	37 271	60 809	2 840	...	...	60 809
	2013	1 884	29 760	69 440	6 240		18 600	44 600
Democratic Republic of the Congo	2011	1 380	96 265	273 983	78		31	309
	2012	626	34 481	309 249	67		12	...
	2013	1 459	77 404	291 264	935		3 870	11 611
Denmark	2011	44	0	294 449	33 691 <sup>Δ</sup>	880	66 345	...
	2012	42	0	277 960	31 963 <sup>Δ</sup>	1 630	58 523	...
	2013	44	0	269 686	33 051 <sup>Δ</sup>	1 319	60 334	...
Djibouti	2011	9	3 918	556	28		528	
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Dominica	2011	1	20	940	202		225	0
	2012	1	9	914	276		136	0
	2013	1	8	968	210		116	0
Dominican Republic	2011	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...
Ecuador	2011	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...
	2013 <sup>12</sup>	121	1	63 165	22 244	28	31 280	2 033
Egypt	2011	...	...	...	...	...	...	...
	2012 <sup>13</sup>	200	...	...	...	...	...	...
	2013 <sup>14</sup>	400	...	...	...	...	...	...
El Salvador	2011	58	357	83 292	35 393	783	32 668	0
	2012	43	...	...	...	...	...	0
	2013	45	733	91 456	32 702	5 824	37 335	0
								11 811

<sup>4</sup> Although nine hospitals can do transfusions, only three recorded transfusions in the current year.

<sup>5</sup> Units of blood and components transfused are partial data.

<sup>6</sup> Including platelets derived from whole blood and apheresis platelets.

<sup>7</sup> Including platelets derived from whole blood and apheresis platelets.

<sup>8</sup> The data are from 130 reporting blood banks that support greater numbers of hospitals. Data are not given by hospitals directly.

<sup>9</sup> From 188 hospitals, only 148 perform blood transfusion on a regular basis.

<sup>10</sup> Incomplete data representing around 97% of issued components.

<sup>11</sup> Only plasma for clinical purposes was included (in litres).

<sup>12</sup> Partial data. Blood components distributed to the Health facilities under ministry of public health.

<sup>13</sup> The hospitals numbered are those under the Ministry of Health.

<sup>14</sup> The hospitals numbered are those under the Ministry of Health.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country					
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma
Equatorial Guinea	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Eritrea	2011	26	4 621	3 789	587	—	471	—
	2012	25	4 699	4 137	244	—	362	—
	2013	26	1 349	6 357	146	—	318	—
Estonia	2011	24	40	53 691	4 891 <sup>Δ</sup>	1 347	24 048	0 685
	2012	24	37	55 389	5 880 <sup>Δ</sup>	1 323	25 934	0 899
	2013	24	49	56 012	5 863 <sup>Δ</sup>	1 567	24 387	0 1 602
Ethiopia	2011	194	20 017	8 401	8 692	—	6 525	... 10
	2012	72	31 089	7 673	6 783	—	5 799	... ...
	2013	208	...	...	...	—	...	...
Fiji	2011	7	...	...	0	—	1 648	... 242
	2012 <sup>15</sup>	13	99	7 088	1 305	—	1 476	... 476
	2013	—	—	—	—	—	—	—
Finland	2011	66	0	243 000	40 002 <sup>Δ</sup>	707	49 900	0 0
	2012 <sup>16</sup>	55	147	230 757	39 860 <sup>Δ</sup>	482	48 349	0 0
	2013 <sup>17</sup>	60	147	212 654	184 620	1 000	48 000	0 0
France	2011	1 900	0	2 447 635	142 281 <sup>Δ</sup>	150 365	379 922	... 0
	2012	1 485	0	2 515 888	154 955 <sup>Δ</sup>	145 728	387 976	0 0
	2013	1 423	0	2 498 328	158 173 <sup>Δ</sup>	148 069 <sup>18</sup>	398 918	494 <sup>19</sup> 0
Gabon	2011	15	...	13 331	213	—	1 214	0 0
	2012	11	...	13 331	213	—	1 214	0 0
	2013	55	...	13 967	635	—	1 467	0 0
Gambia	2011	5	...	—	—	—	—	—
	2012	10	...	—	—	—	—	—
	2013	11	9 794	—	—	—	—	—
Georgia	2011	...	5 514	31 474	...	...	...	31 559 ...
	2012	...	200	29 657	8 983	100	26 420	0 42
	2013	264	...	...	...	...	...	...
Germany	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013 <sup>20</sup>	1420	0	4 122 608	200 247 <sup>Δ</sup>	300 370	861 850	0 0
Ghana	2011	248	38 699	14 824	4 015	—	14 451	0 193
	2012	248	21 159 <sup>21</sup>	...	...	—	...	0 ...
	2013	257	88 358	45 891	3 014	—	40 432	0 338
Greece	2011	120	103	396 591	130 850	20 334	187 102	0 0
	2012	120	56	413 568	113 200	16 607	193 872	0 0
	2013	120	50	403 482	116 378	20 823	188 846	0 0
Grenada	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Guatemala	2011	50	1 830	98 755	20 587	2 555	26 660	... 1 160
	2012	66	947	119 087	26 005	3 838	30 757	19 1 702
	2013	48	...	...	...	...	...	...
Guinea	2011	43	...	...	...	—	...	...
	2012	46	25 806	96	0	—	0	0 0
	2013	42	33 657	352	0	—	0	0 0
Guinea-Bissau	2011	7	2 970	...	...	...	...	...
	2012	—	—	—	—	—	—	—
	2013	—	4 006	...	...	...	...	...
Guyana	2011	14	...	...	...	...	...	...
	2012	22	...	...	...	...	...	...
	2013	12	...	...	...	...	...	...
Haiti	2011	64	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...
	2013	74	10 284	18 276	434	—	37	... 3

<sup>15</sup> Number of units transfused for two division hospitals only – other data not available.

<sup>16</sup> In Finland only SD-treated FFP (produced by Octapharma) is used.

<sup>17</sup> Only SD-treated FFP (produced by Octapharma) is used as a plasma product in Finland.

<sup>18</sup> Including 229 units of packed apheresis granulocyte.

<sup>19</sup> Lyophilized plasma of the French army's blood transfusion centre, used in the context of external operations.

<sup>20</sup> The actual numbers of transfused platelets from whole blood/apheresis are not gathered. The given numbers are calculated by the proportions of manufactured platelets (40% from whole blood, 60% from apheresis).

<sup>21</sup> Data provided represent the number of both whole blood and red cells.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country					
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma
Honduras	2011	57	15 060	44 439	14 895	687	15 440	...
	2012	56	31 772	28 508	21 216	823	25 603	...
	2013	25 <sup>22</sup>	...	...	...	...	...	...
Hungary	2011	—	—	—	—	—	—	—
	2012	166	0	414 755	141 256	37 325	97 219	0
	2013	—	—	—	—	—	—	—
Iceland	2011	15	0	12 248	853 <sup>Δ</sup>	1 228	3 607	0
	2012	8	0	11 538	732 <sup>Δ</sup>	1 598	3 284	0
	2013	—	—	—	—	—	—	—
India	2011	—	—	—	—	—	—	—
	2012	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...
Indonesia	2011	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...
Iran (Islamic Republic of)	2011	1 025	15 242	1 867 831	777 358	2 018	747 111	40 228
	2012	859	11 454	1 796 023	809 401	4 297	495 483	34 394
	2013	878	19 254	1 697 847	839 126	2 586	684 940	45 187
Iraq	2011	223	242 266	145 528	110 376	1 064	...	140 273
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Ireland	2011	76	0	138 094	5 345 <sup>Δ</sup>	19 434	264	0
	2012	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—
Israel	2011	—	—	—	—	—	—	—
	2012	33	711	262 398	175 489	659	63 886	3 075
	2013 <sup>23</sup>	33	609	254 250	167 995	1 279	64 856	2 795
Italy	2011	1 487	2 209	2 535 224	140 211 <sup>Δ</sup>	86 792	253 924	85 026
	2012	—	—	—	—	—	—	—
	2013	312	0	2 482 473	717 881	70 113	280 952	0
Jamaica	2011	30	...	...	...	...	...	...
	2012	30	245	20 198	3 783	—	9 277	68
	2013	...	...	...	...	...	...	...
Japan	2011	10 428	378	3 468 431	0	796 385	992 867	0
	2012 <sup>24</sup>	11 348	377	3 294 576	0	903 577	1 155 720	0
	2013	11 081	595	3 446 268	0	834 655	655 680	0
Jordan	2011	104	0	52 486	45 316	50	23 220	0
	2012	106	15 760	92 867	65 750	50	92 867	0
	2013	29	14 840	86 641	63 541	55	89 325	0
Kazakhstan	2011	492	...	125 458	38 431	9 432	140 993	...
	2012	492	...	145 246	12 998	10 248	149 583	...
	2013	469	...	153 582	22 598	22 040	159 320	...
Kenya	2011	336	...	...	...	...	...	...
	2012	480	86 185	60 658	1 139	—	908	862
	2013	385	77 901	78 907	143	—	45 908	2 789
Kiribati	2011	3	...	...	...	...	...	...
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Kuwait	2011	26	0	55 572	0	7 520	18 650	2 901
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Kyrgyzstan	2011	98	89	15 326	1 538	...	...	...
	2012	39	—	11 163	1 854	—	12 116	83
	2013	...	...	...	...	...	...	...
Lao People's Democratic Republic	2011	26	19 780	6 462	119	—	948	21
	2012	27	19 143	9 320	151	—	739	0
	2013	27	21 441	11 510	580	—	905	13
Latvia	2011	53	0	50 141	3 415 <sup>Δ</sup>	3 503	35 865	0
	2012	48	0	51 154	3 683 <sup>Δ</sup>	3 961	35 107	0
	2013	48	0	49 970	3 902 <sup>Δ</sup>	3 651	31 400	0

<sup>22</sup> Hospitals belonging to the public health system.

<sup>23</sup> The units of blood components issued only include MDA data.

<sup>24</sup> An adult-sized blood bag is 400 ml in Japan, and 200 ml bags are used as well. The 200 ml bag was counted as 0.5 bag for whole blood, red cells and FFP. In the case of apheresis platelets, a component of 200 x 109 platelets is regarded as adult-sized. 400 x 109 components were calculated as 2 units in this table. The actual number of bags of apheresis platelets was 821 680.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country					
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Cryo-precipitate
Lebanon	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	120	...	...	...	...	...	...
Lesotho	2011	19	...	...	...	...	...	...
	2012	19	...	...	...	...	...	...
	2013	20	...	...	...	...	...	...
Liberia	2011	38	12 224	0		0	0	0
	2012	—	—	—	—	—	—	—
	2013	38	26 602	0		0	0	0
Libya	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	85	...	...	...	...	...	...
Lithuania	2011	—	—	—	—	—	—	—
	2012	69	3	88 479	6 528 <sup>Δ</sup>	12 337	35 730	... 1 930
	2013	—	—	—	—	—	—	—
Luxembourg	2011	8	0	19 498	1 637 <sup>Δ</sup>	692	5 265	0 0
	2012	8	0	19 882	1 904 <sup>Δ</sup>	861	4 100	0 0
	2013	7	0	19 655	1 816 <sup>Δ</sup>	665	5 957	0 0
Madagascar	2011	110	8 940	4 080	...	1 620	0 0	0 0
	2012	110	21 714	1 365	...	941	0 0	0 0
	2013	110	17 573	8 271	...	2 728	0 0	0 0
Malawi	2011	78	46 128	6 522	891	930	0 0	675
	2012	79	...	...	1 782	1 986	0 0	214
	2013 <sup>26</sup>	87	27 016	4 213	1 145	819	0 0	132
Malaysia	2011	132	81 638	330 487	106 646	6 337	137 816	1 431 55 684
	2012	132	79 554	345 438	107 771	5 943	138 775	2 585 61 762
	2013 <sup>27</sup>	128	67 616	433 839	109 672	5 666	137 744	894 60 591
Maldives	2011	64	...	...	...	...	...	...
	2012 <sup>28</sup>		424	4 091	242	244	15 0	
	2013	60	0	5 614	0	0	0 0	0
Mali	2011	11	31 665	6 155	539	602	0 0	0 0
	2012	—	—	—	—	—	—	—
	2013	13	26 706	4 821	210	962	0 0	0 0
Malta	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Marshall Islands	2011	2	157	131	...	...	...	...
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Mauritania	2011	24	54	8 290	1 239	732	0 0	0 0
	2012	24	52	9 387	630	494	0 0	0 0
	2013	...	36	9 796	330	708	0 0	0 0
Mauritius	2011	22	25 169	16 846	10 408	117	11 495	235
	2012	27 <sup>29</sup>	39 374 <sup>30</sup>	...	10 514	107	12 105	... 334
	2013	30	20 318	26 221	17 437	100	13 819	... 485
Mexico	2011	5 065	13 746	1 380 605	521 380	68 296	609 765	0 75 879
	2012	4 354	13 325	1 336 038	512 123	54 731	561 158	19 523 75 268
	2013	5 000 <sup>31</sup>	11 906	1 034 104	461 188	...	418 447	16 030 64 457
Micronesia (Federated States of)	2011	5	1 072	717	50	0	0 0	
	2012	5	584	1 086	320	3	0 0	0
	2013	5	644	1 145	80	0	0 0	0
Monaco	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Mongolia	2011	406	110	15 291	4 053	0	19 751	4 628 4 868
	2012	81	60	15 204	4 376	0	14 748	4 164 4 211
	2013	93	52	17 272	4 792	0	20 960	3 891 2 394

<sup>25</sup> Total red cells and whole blood: 42 389.

<sup>26</sup> Whole blood and component transfused are partial data.

<sup>27</sup> Data on whole blood and components issued/transfused are for Ministry of Health facilities only. About 20–30% of blood collected in Ministry of Health facilities was supplied to private health care facilities under an individual memorandum of understanding.

<sup>28</sup> Data given in this section are from IGMH and Maldivian blood services only.

<sup>29</sup> The number of hospitals includes five regional public hospitals and 22 private health institutions.

<sup>30</sup> Total red cells and whole blood: 39 374.

<sup>31</sup> Estimated number.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country						
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma	
Montenegro	2011 <sup>32</sup>	12	0	4 642	1 970		5 965	0	457
	2012	10	3 990	11 260	509 <sup>A</sup>		10 298	0	544
	2013	10	1 947	13 141	3 372		9 597	0	2 524
Morocco	2011	422	0	200 211	53 637	133	61 463	0	0
	2012 <sup>33</sup>	422	0	264 167	54 701	182	65 641	0	0
	2013	...	0	...	...	...	...	...	...
Mozambique	2011	153	...	...	...		...	...	...
	2012	154	...	...	...		...	...	...
	2013	153	...	...	...		...	...	...
Myanmar <sup>34</sup>	2011	308	20 209	9 055	2 667	53	6 252	195	214
	2012	333	15 888	10 203	141	11	7 330	2 749	388
	2013	333	9 003	10 704	1 841	399	11 113	760	111
Namibia	2011	46	30	23 113	0	822	3 120	0	0
	2012	46	29	23 997	0	978	3 500	0	0
	2013	46	61	26 487	0	1 315	4 296	0	0
Nauru	2011	1	496	0	0		0	6	
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Nepal	2011	187	177 055	36 000	10 500		21 750	1 800	1 800
	2012	250	188 133	43 000	21 000	12	21 000	210	215
	2013	250	149 635	51 487	20 595	20	28 317	2 574	2 550
Netherlands	2011	90	4 800	544 324	290 623	0	89 631	0	0
	2012	90	5 320	506 671	285 643	0	78 352	0	0
	2013	92	0	453 365	55 783 <sup>A</sup>	3 565	68 705	0	0
New Zealand	2011	21	1 525	115 302	5 371 <sup>A</sup>	7 470	16 760	751	3 228
	2012	21	1 294	112 354	20 164	7 471	16 530	670	3 745
	2013	21	941	103 174	6 457 <sup>A</sup>	6 114	13 531	508	4 170
Nicaragua	2011	...	...	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...	...
Niger	2011	46	36 005	3 586	105		875	0	0
	2012	47	48 029	1 200	42		1 242	0	0
	2013	47	65 528	1 250	5		639	146	0
Nigeria	2011	22	21 176	465	203		474	0	0
	2012	...	...	...	...		...	...	...
	2013 <sup>35</sup>	...	...	906	464		0	0	6
Niue	2011	1	29						
	2012	1	10						
	2013	1	31						
Norway	2011	44	111	194 248	16 118 <sup>A</sup>	6 268	48 671	0	0
	2012	39	132	191 292	16 911 <sup>A</sup>	7 597	49 788	0	0
	2013	—	—	—	—	—	—	—	—
Oman	2011	...	...	...	...	...	...	...	...
	2012 <sup>36</sup>	18	1 950	7 734	1 499	219	3 988		86
	2013	14	...	...	...	...	...	...	...
Pakistan	2011	321	713 541	227 431	132 333	7 251	163 114	577	10
	2012	798 353	306 830	110 388	2 190	237 859	...	...	...
	2013	271	591 591	478 261	177 613	2 312	179 655	...	...
Palau	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Panama	2011	26	162	44 398	7 841	3 462	13 932	0	3 646
	2012	...	...	...	...	...	...	...	...
	2013	31	131	33 032	19 425	2 609	14 612	0	3 418
Papua New Guinea	2011 <sup>37</sup>	35	1 904	4 417	146		128	0	...
	2012	33	...	...	...		...	0	...
	2013	36	6 408	17 221	412		173	0	7
Paraguay	2011	57	909	46 854	14 928	87	19 095	...	1 670
	2012	...	248	32 472	5 478	...	10 492	...	391
	2013	63	...	...	...	...	...	...	...

<sup>32</sup> Data on number of units of blood components issued/transfused only cover the blood transfusion centre in Montenegro.

<sup>33</sup> The data provided are the units of blood components issued.

<sup>34</sup> Partial data

<sup>35</sup> The data given in this section are from the Lagos State Blood Transfusion Service. Country data are not available.

<sup>36</sup> Units of blood components issued/transfused are partial data from facilities under the Ministry of Health.

<sup>37</sup> Data on number of units of blood components issued/transfused only cover the Blood Transfusion Service in Port Moresby.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country						
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma	Cryo-precipitate
Peru	2011	...	...	...	...	...	...	...	...
Peru	2012	270	2 807	129 723	57 596	8 594	48 062	1 132	8 587
Peru	2013	289	1 746	162 809	80 431	10 256	65 296	936	15 400
Philippines <sup>38</sup>	2011	171	97 376	217 406	53 645	2 675	4 236	...	3 578
Philippines <sup>38</sup>	2012	114	90 764	187 527	43 756	2 436	43 338	...	2 556
Philippines <sup>38</sup>	2013	...	61 911	240 245	64 062	1 134	47 832 <sup>39</sup>	...	3 291
Poland	2011	795	368	1 059 228	50 934 <sup>40</sup>	38 362	361 664	0	12 251
Poland	2012	861	6	1 130 381	62 691 <sup>40</sup>	36 076	373 007	0	1 324
Poland	2013	848	61	1 132 466	316 010	32 386	358 490	1 172	18 156
Portugal	2011	163	...	294 360	69 908 <sup>40</sup>	5 282	6 199	58 126	1 449
Portugal	2012	188	133	341 843	137 368	4 600	69 484	...	1 070
Portugal	2013	218	144	338 621	173 408	5 411	77 073	...	1 190
Qatar	2011	—	—	—	—	—	—	—	—
Qatar	2012	—	—	—	—	—	—	—	—
Qatar	2013	5	0	19 792	10 896	445	9 965	536	2 246
Republic of Korea	2011	2 766	1 770	1 901 861	1 622 597	104 172	615 095	2 010	65 043
Republic of Korea	2012	2 799	1 662	1 958 922	1 618 091	118 653	631 812	2 425	67 733
Republic of Korea	2013	1 623	1 942 215	1 516 015	130 569	607 986	3 401	67 532	
Republic of Moldova	2011	69	39	37 311	8 693	0	49 576	13 188	14 356
Republic of Moldova	2012	69	160	38 940	8 399	0	63 041	...	13 160
Republic of Moldova	2013	69	90	41 914	8 193	0	51 471	9 705 <sup>40</sup>	11 012
Romania	2011	324	87 837	203 497	48 238	5 511	...	179 017	10 424
Romania	2012	340	45 931	355 911	92 896	8 261	271 121	11 194	19 852
Romania	2013	328	30 310	397 702	99 766	9 826	279 114	...	21 884
Russian Federation	2011	...	2 213	1 589 931	521 348		1 893 284	11 564	27 229
Russian Federation	2012	...	1 335	1 668 572	594 734		1 907 368	8 452	26 016
Russian Federation	2013	...	582	1 642 159	581 675		1 783 088	16 920	21 982
Rwanda	2011	49	607	34 554	9 271		7 250	...	...
Rwanda	2012	59	...	...	...		...	...	...
Rwanda	2013	46	...	51 000	...		...	...	...
Saint Kitts and Nevis	2011	1	44	271	0		20	0	0
Saint Kitts and Nevis	2012	—	—	—	—		—	—	—
Saint Kitts and Nevis	2013	1	4	393	0		6	0	0
Saint Lucia	2011	3	0	2 078	452		523	0	0
Saint Lucia	2012	...	...	...	...		...	...	...
Saint Lucia	2013	3	...	1 722	249		455	9	0
Saint Vincent and the Grenadines	2011	...	...	...	...		...	...	...
Saint Vincent and the Grenadines	2012	3	10	1 482 <sup>41</sup>	85		0	0	0
Saint Vincent and the Grenadines	2013	2	...	...	...		...	...	...
Samoa	2011	2	341	2 248	13		22	4	0
Samoa	2012	2	171	1 930	112		25	0	0
Samoa	2013	2	...	...	...		...	...	0
San Marino	2011	—	—	—	—		—	—	—
San Marino	2012	—	—	—	—		—	—	—
San Marino	2013	—	—	—	—		—	—	—
Sao Tome and Principe	2011	—	—	—	—		—	—	—
Sao Tome and Principe	2012	—	—	—	—		—	—	—
Sao Tome and Principe	2013	1	108	689	0	0	22	211	0
Saudi Arabia	2011	352	26 755	346 501	201 432	10 342	213 451	7 232	24 524
Saudi Arabia	2012	...	...	...	...	...	...	...	...
Saudi Arabia	2013	302	45 857	324 945	170 672	29 357	332 166	0	30 358
Senegal	2011	95	39 644	4 086	486		2 110	0	0
Senegal	2012	141	34 537	7 884	140		3 279	2 860	0
Senegal	2013	141	...	...	...		...	...	...
Serbia	2011	102	72 825	160 897	71 130	2 189	71 130	...	95 590
Serbia	2012	107	14 156	205 425	87 010	1 932	182 461	24 912	24 607
Serbia	2013	107	13 648	208 284	88 222	1 788	184 990	23 334	24 948
Seychelles	2011	—	—	—	—		—	—	—
Seychelles	2012	1	1 300	25	8		8	0	0
Seychelles	2013	3	735	650	8		0	0	0

<sup>38</sup> Numbers of blood component units issued/transfused are partial data. Not all reporting facilities included data on transfusion.

<sup>39</sup> Including both plasma and FFP.

<sup>40</sup> Cryosupernatant.

<sup>41</sup> The units transfused include units that were shared between patients. Each of the split units was counted as a unit.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country						
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma	Cryo-precipitate
Sierra Leone	2011	40	50 797	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	30	41 132	—	—	—	—	—	—
Singapore	2011	16	413	93 916	44 268	9 244	29 387	10	11 111
	2012	21	367	100 012	43 506	11 410	32 635	0	8 967
	2013	21	2	108 116	56 124	10 180	29 199	126	11 916
Slovakia	2011	...	502	181 674	2 695 <sup>Δ</sup>	11 435	83 462	0	4
	2012	101	420	188 777	10 991 <sup>Δ</sup>	12 285	86 679	0	0
	2013	101	448	192 050	6 661 <sup>Δ</sup>	11 276	86 914	0	0
Slovenia	2011	18	0	90 282	7 648 <sup>Δ</sup>	2 643	30 307	0	0
	2012	18	0	88 791	7 915 <sup>Δ</sup>	3 360	30 571	0	0
	2013	27	0	83 069	8 062 <sup>Δ</sup>	3 008	27 885	0	0
Solomon Islands	2011	3	...	...	...	...	...	...	...
	2012	9	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—	—
Somalia	2011	38	16 337	—	—	—	—	—	—
	2012	60	23 639	—	—	—	—	—	—
	2013	31	27 051	1 008	272	—	—	—	—
South Africa	2011	767	2 837	838 776	31 042 <sup>Δ</sup>	28 907	130 704	89	29 514
	2012	737	2 920	880 693	50 554 <sup>Δ</sup>	30 445	132 386	0	133 279
	2013	639	3 450	918 533	170 170	30 735	145 780	0	35 089
South Sudan	2011	27	—	—	—	—	—	—	—
	2012	7	...	—	—	—	—	—	—
	2013	7	3 671 <sup>42</sup>	—	—	—	—	—	—
Spain <sup>43</sup>	2011	460	93	1 578 316	193 496 <sup>Δ</sup>	...	210 490	...	1 930
	2012	460	95	1 578 032	192 326 <sup>Δ</sup>	...	199 036	...	1 557
	2013	460	123	1 531 749	192 592 <sup>Δ</sup>	...	186 537	60 <sup>44</sup>	1 901
Sri Lanka	2011	83	0	315 229	101 706	810	156 461	18 261	73 323
	2012	...	0	310 539	100 215	8 850	184 438	17 595	77 794
	2013	...	...	370 645	...	...	...	...	...
Sudan	2011	500	168 601	122 312	87 234	—	58 763	0	654
	2012	352	83 515	101 371	43 714	—	44 914	0	9 000
	2013	...	...	...	46 783	—	47 813	0	...
Suriname	2011	...	...	...	...	—	...	...	...
	2012	5	0	9 683	1 286	—	1 883	0	0
	2013	5	...	...	...	—	...	...	...
Swaziland	2011	12	0	11 300	563	—	10 737	0	0
	2012	19	0	11 875	0	—	0	0	0
	2013	—	—	—	—	—	—	—	—
Sweden	2011	...	0	485 071	173 080	15 250	85 808	0	0
	2012	...	0	471 644	166 965	15 130	82 092	0	0
	2013	...	0	456 377	30 862 <sup>Δ</sup>	14 916	69 265	0	0
Switzerland	2011	239	...	...	...	...	...	...	...
	2012	224	0	297 582	8 917 <sup>Δ</sup>	25 271	49 832	0	0
	2013	246	0	279 510	12 292 <sup>Δ</sup>	22 458	44 083	0	0
Syrian Arab Republic	2011	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—
Tajikistan	2011	67	21 896	21 896	310	83	23 997	2 197	3 167
	2012	103	...	14 777	132	436	19 265	...	2 782
	2013	158	0	26 148	199	283	43 224	0	6 938
Thailand	2011	1 152	2	566 888	269 582	10 058	159 569	614	135 593
	2012	1 099	118	504 441	273 980	11 343	113 297	221 106	21 165
	2013 <sup>45</sup>	1 099	0	420 932	292 038	12 266	146 510	504	134 054
The former Yugoslav Republic of Macedonia	2011	25	...	55 975	21 977	65	55 975	...	5 845
	2012	...	40	40 325	21 086	52	45 062	...	1 355
	2013 <sup>46</sup>	...	15	50 155	23 192	496	46 335	...	530

<sup>42</sup> About 900 units of blood were supplied from Kenya during the crisis in 2013 when fighting broke out. This accounts for the excess number of transfused units compared to what was collected at the hospitals.

<sup>43</sup> Units of platelets include both the platelets derived from whole blood and apheresis platelets.

<sup>44</sup> Cryosupernatant. Subnational data.

<sup>45</sup> Data in this section only cover the issued data from the National Blood Centre (Bangkok).

<sup>46</sup> The National Institute of Transfusion Medicine can give data only for the issued blood units.

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country					
			Whole blood	Red cells	Whole blood-derived platelets	Apheresis platelets	Fresh frozen plasma	Cryo-precipitate
Timor-Leste	2011	—	—	—	—	—	—	—
	2012	6	952	968	198	—	266	0
	2013 <sup>47</sup>	9	746	1467	95	—	61	100
Togo	2011	...	10 250	22 942	318	—	1 877	0
	2012	...	12 689	27 225	171	—	2 714	0
	2013	...	...	...	...	...	...	...
Tonga	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Trinidad and Tobago	2011	5	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...
Tunisia	2011	...	...	...	...	...	...	...
	2012	160	4 333	177 964	69 422	2 916	122 801	...
	2013	117	...	185 530	66 648	1 842	78 148	...
Turkey	2011	1 150	57 619	1 319 619	350 863	—	723 590	...
	2012	917	95 612	2 101 642	541 312	112 320	1 078 201	0
	2013	...	...	...	...	...	...	...
Turkmenistan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Tuvalu	2011	1	3	94	—	—	—	—
	2012	1	183	10	—	—	—	—
	2013	1	10	92	—	—	—	—
Uganda	2011	227	...	...	...	...	...	...
	2012	217	...	...	...	...	...	...
	2013	275	202 935	141 625	6 392	0	320	49 025
Ukraine	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
United Arab Emirates	2011	64	520	86 000	50 600	2 670	450	28 900
	2012	53	570	90 900	17 000	800	11 050	0
	2013	53	...	54 335	18 235	3 710	20 707	...
United Kingdom of Great Britain and Northern Ireland	2011	...	0	2 163 619	52 682 <sup>Δ</sup>	255 242	298 746	...
	2012	...	2	2 102 519	259 998	267 095	286 402	...
	2013	...	5	2 020 300	59 663 <sup>Δ</sup>	254 630	269 658 <sup>48</sup>	...
United Republic of Tanzania	2011	261	81 544	3 923	732	—	3 761	0
	2012	261	81 987	16 109	1 629	—	1 014	15
	2013	261	115 980	17 138	2 297	—	2 253	300
United States of America	2011 <sup>50</sup>	4 241 <sup>51</sup>	21 000	13 517 000	993 000	1 970 000	1 433 000	3 882 000
	2012	...	...	...	...	...	...	...
	2013	...	...	...	...	...	...	...
Uruguay	2011	—	—	—	—	—	—	—
	2012	73	2 652	73 935	33 497	1 234	23 318	160
	2013	71	2 568	80 111	38 875	2 479	24 112	226
Uzbekistan	2011	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—
Vanuatu	2011	4	484	895	...	...	...	...
	2012	—	—	—	—	—	—	—
	2013	5	639	770	20	—	50	25
Venezuela (Bolivarian Republic of)	2011	...	3 862	311 175	168 595	3 316	195 315	23 645
	2012	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—
Viet Nam <sup>52</sup>	2011	265	152 895	560 404	61 258	35 085	104 846	9 284
	2012	311	239 849	580 010	66 287	33 974	191 539	10 692
	2013	335	246 163	641 391	61 451	40 961	255 091	14 928
								30 060 <sup>Δ</sup>

<sup>47</sup> Only the National Hospital and Clinic in the capital, Dili, distributes blood to patients.

<sup>48</sup> Number reported under FFP may include plasma.

<sup>49</sup> Figures given are for the number of units of clinical cryoprecipitate, either as single units or pools of 5.

<sup>50</sup> Data from National Blood Collection and Utilization Survey.

<sup>51</sup> Hospitals reporting fewer than 100 inpatient surgeries per year were not included in the number of hospitals performing blood transfusions.

<sup>52</sup> One unit of whole blood derived platelets is defined as the preparation of 1000 ml whole blood (pool of preparations from 4 bag of 250 ml or 3 bag of 350 ml whole blood).

Country	Data year	No. hospitals performing blood transfusion	No. units of blood components issued/transfused (excluding autologous blood units) in the country					
			Whole blood	Red cells	Whole blood- derived platelets	Apheresis platelets	Fresh frozen plasma	Plasma
Yemen	2011	—	—	—	—	—	—	—
	2012	145	0	10 324	9 594	—	6 464	1 070
	2013	—	—	—	—	—	—	—
Zambia	2011	142	62 226	8 216	2 119	—	8 216	0
	2012	150	84 754	10 100	3 100	—	7 500	0
	2013	151	84 832	12 000	8 000	—	12 000	0
Zimbabwe	2011	135	10 781	37 045	1 161	160	4 117	0
	2012	150	...	...	...	...	...	...
	2013	105	963	53 985	1 744	11	5 191	0
								274

## Annex 10

# Provision of plasma-derived medicinal products (PDMP) through the fractionation of plasma collected in the country 2011–2013

... Not reported/not available.

Blank: Not required/not applicable.

— No response.

\* Arrangement for the fractionation of plasma collected in the country: A: fractionation through the public/not-for-profit sector in the country; B: fractionation through the for-profit sector in the country; C: contract fractionation in another country; D: plasma were sold to PDMP manufacturers.

IVIG: intravenous immunoglobulin.

\*\* % of PDMP supplied through the products manufactured by fractionation of plasma that were collected in the country.

Country	Data year	Fractionation arrangement*	Volume of plasma used for fractionation, or sold to the manufacturers of PMDP for fractionation				Products manufactured by fractionation of plasma collected in the country				% of self-reliance of PDMP supplies**			
			Recovered plasma (L)	Apheresis plasma (L)	Total (L)	L per 1000 population	% of recovered plasma	Albumin	IVIG	Factor VIII	Factor IX	Albumin	IVIG	Factor VIII
Argentina	2011	A	68 150	0	68 150	1.7	100	Yes	Yes	Yes	Yes	...	...	...
	2012	A	100 000	0	100 000	2.4	100	Yes	Yes	Yes	Yes	70	40	15
	2013	A	80 000	0	80 000	1.9	100	Yes	Yes	Yes	No	70	30	10
Armenia	2011	A	0	14 600	14 600	4.9	0	No	No	No	No	...	...	...
	2012 <sup>1</sup>													
	2013 <sup>2</sup>													
Australia <sup>3</sup>	2011	B	791 751	366 316	1 158 067	50.9	68	Yes	Yes	Yes	Yes	100	78	100
	2012	B	189 458	322 532	511 989	22.2	37	Yes	Yes	Yes	Yes	100	62	100
	2013	B	171 981	360 000	531 981	22.8	32	Yes	Yes	Yes	Yes	100	68	100
Belarus	2011	A	...	...	...	...	...	Yes	No	No	No	100	...	...
	2012	—	—	—	—	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—	—	—	—	—
Belgium	2011	A	121 279	61 440	182 719	16.6	66	Yes	Yes	Yes	Yes	...	...	...
	2012	A	125 474	66 861	192 335	17.4	65	Yes	Yes	Yes	Yes	...	...	...
	2013	A	113 535	62 349	175 884	15.8	65	Yes	Yes	Yes	Yes	...	...	...
Brazil	2011	A, C	85 745	0	85 745	0.4	100	Yes	Yes	Yes	Yes	50	40	3
	2012	A, C	112 100	0	112 100	0.6	100	Yes	Yes	Yes	Yes	...	...	...
	2013	—	—	—	—	—	—	—	—	—	—	—	—	—
Bulgaria	2011	A, D	13 758	0	13 758	1.9	100	Yes	Yes	No	No	...	...	0
	2012	...	15 664	0	15 664	2.2	100	Yes	—	—	—	100	...	...
	2013	—	—	—	—	—	—	—	—	—	—	—	—	—
Canada <sup>4</sup>	2011	C	243 059	22 247	265 306	7.7	92	Yes	Yes	No	No	79	30	...
	2012	C	238 542	22 084	260 626	7.5	92	Yes	Yes	No	No	62	25	...
	2013 <sup>5</sup>	C, D	55 000	20 000	75 000	—	73	Yes	Yes	No	No	85	12	...
Chile	2011	C	20 000	0	20 000	1.2	100	Yes	Yes	Yes	Yes	10	10	...
	2012	C	22 961	0	22 961	1.3	100	Yes	Yes	No	No	17.5	3.6	...
	2013	C <sup>6</sup>	22 961	0	22 961	1.3	100	Yes	Yes	No	No	17.5	3.6	...
China	2011	...	0	3 858 000	3 858 000	2.8	0	Yes	Yes	Yes	Yes	...	...	...
	2012	B	0	4 284 000	4 284 000	3.1	0	Yes	Yes	Yes	Yes	...	...	...
	2013	B	...	...	...	...	...	Yes	Yes	Yes	Yes	...	...	...
Croatia	2011	B, D	11 830	0	11 830	2.7	100	Yes	Yes	No	No	...	...	...
	2012	B	13 979	0	13 979	3.2	100	Yes	Yes	No	No	...	...	0 <sup>7</sup>
	2013	...	...	...	...	...	...	...	...	...	...	...	...	...
Cuba	2011	...	—	—	—	—	—	—	—	—	—	—	—	—
	2012	...	...	...	...	...	...	...	...	...	...	...	...	...
	2013	A	...	...	...	...	...	Yes	Yes	...	...	...	...	...
Czech Republic	2011	...	...	...	...	...	...	...	...	...	...	...	...	...
	2012	...	60 911	444 245	505 156	47.4	12	...	...	...	...	100 <sup>8</sup>	100	100
	2013	B	64 418	508 659	573 077	53.5	11	...	...	...	...	...	...	...
Democratic People's Republic of Korea	2011	A	...	...	...	...	...	Yes	—	—	—	—	—	—
	2012	...	...	...	...	...	...	...	...	...	...	...	...	...
	2013	A	...	...	...	...	...	...	...	...	...	...	...	...
Denmark <sup>10</sup>	2011	C	64 800	0	64 800	11.6	100	Yes	Yes	No	No	100	75	...
	2012	C	60 900	0	60 900	10.9	100	Yes	Yes	No	No	90	74	...
	2013	C	60 400	0	60 400	10.7	100	Yes	Yes	No	No	100	75	...

<sup>1</sup> Report states: "No plasma collected in the country is used for fractionation. All products are imported from abroad."

<sup>2</sup> Report states: "No plasma collected in the country is used for fractionation. All products are imported from abroad."

<sup>3</sup> A large proportion of FVIII supply in Australia is of recombinant origin.

<sup>4</sup> All factor VIII supplied are recombinant.

<sup>5</sup> Numeric data are subnational data provided by Héma-Québec.

<sup>6</sup> Agreement on exchange of plasma for PDMP with the National University of Cordoba, Argentina.

<sup>7</sup> Data for albumin and IVIG from domestic producers (market share) are not available. For factor VIII, 100% is imported.

<sup>8</sup> Products are purchased on the open market; plasma collected in the Czech Republic is usually pooled with plasma from other European Union locations.

<sup>9</sup> Plasma for fractionation is produced in amounts exceeding the PDMP needs in the Czech Republic. Plasma is pooled with other plasma of equivalent quality. It is not possible to say whether products used in the Czech Republic originate from plasma collected in the country.

<sup>10</sup> Only recombinant FVIII is used.

Country	Data year	Fractionation arrangement*	Volume of plasma used for fractionation, or sold to the manufacturers of PMDP for fractionation				Products manufactured by fractionation of plasma collected in the country				% of self-reliance of PDMP supplies**			
			Recovered plasma (L)	Apheresis plasma (L)	Total (L)	L per 1000 population	% of recovered plasma	Albumin	IVIG	Factor VIII	Factor IX	Albumin	IVIG	Factor VIII
Estonia	2011 <sup>11</sup>	...	...	...	...	...	...	...	...	...	...	...	...	
	2012	C	10 000	0	10 000	7.7	100	Yes	Yes	Yes	Yes	...	...	
	2013	C	10 400	0	10 400	8.1	100	Yes	Yes	Yes	Yes	...	...	
Finland	2011	C, D	78 790	2 000	80 790	15	98	Yes	Yes	Yes	Yes	100	50	100 <sup>12</sup>
	2012	C, D	66 500	5 200	71 700	13.3	93	No	No	No	No	100	50	100
	2013	C, D	61 500	2 620	64 120	11.8	96	No	No	No	No	...	...	...
France	2011	A	690 788	235 885	926 673	14.6	75	Yes	Yes	Yes	Yes	75	54	77
	2012	A	697 490	154 917	852 407	13.3	82	Yes	Yes	Yes	Yes	...	...	...
	2013	A	745 699	39 145	784 844	12.2	95	Yes	Yes	Yes	Yes	...	...	...
Georgia	2011 <sup>13</sup>													
	2012	D	...	...	...	...	...	...	...	...	...	...	...	...
	2013 <sup>14</sup>													
Germany	2011	—	—	—	—	—	—	—	—	—	—	—	—	—
	2012	—	—	—	—	—	—	—	—	—	—	—	—	—
	2013	B, D	1 120 541	1 902 058	3 022 599	36.5	37	...	...	...	...	...	...	...
Greece	2011	A, C	...	...	...	...	...	Yes	...	...	...	...	...	...
	2012	...	...	...	...	...	...	...	...	...	...	...	...	...
	2013	A, C	42 000	0	42 000	3.8	100	Yes	No	No	No	10	0	0
Hungary	2011	—	—	—	—	—	—	—	—	—	—	—	—	—
	2012	B, D	85 000	0	85 000	8.5	100	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—	—	—	—	—	—	—
India <sup>15</sup>	2011	—	—	—	—	—	—	—	—	—	—	—	—	—
	2012	B, C, D	...	...	...	...	...	Yes	Yes	...	...	...	...	...
	2013	B, C, D	...	...	...	...	...	Yes	Yes	...	...	...	...	...
Iran (Islamic Republic of)	2011	A, B, C	132 293	428.5	132 722	1.8	100	Yes	Yes	Yes	Yes	35	100	9
	2012	A, B, C	149 469	2 305	151 774	2	98	Yes	Yes	Yes	Yes	20	100	12
	2013	A, B, C	110 216	123 165	233 381	3	47	Yes	Yes	Yes	Yes	25	95	10
Israel	2011	B, D	—	—	—	—	—	—	—	—	—	—	—	—
	2012	B, D	47 070	0	47 070	6.2	100	No	Yes	No	No	0	45	0
	2013	B, D	42 530	0	42 530	5.5	100	No	Yes	No	No	0	45	0
Italy	2011	B	558 920	189 062	747 982	12.3	75	Yes	Yes	Yes	Yes	55	81	53
	2012	—	—	—	—	—	—	—	—	—	—	—	—	—
	2013	A	553 040	188 919	741 959	12.2	75	Yes	Yes	Yes	Yes	61	74	53
Japan	2011	A, B, D	...	...	996 000 <sup>16</sup>	7.8	...	Yes	Yes	Yes	Yes	59	95	100
	2012	B, D	754 000	202 000	956 000	7.5	79	Yes	Yes	Yes	Yes	60	96	100
	2013 <sup>17</sup>	A, B, D	592 000	355 000	947 000	7.4	63	Yes	Yes	Yes	Yes	59	96	100
Kazakhstan	2011	A, D	34 007	0	34 007	2.1	100	Yes	No	No	No	0	0	0
	2012	A	38 651	0	38 651	2.4	100	Yes	No	No	No	14	0	0
	2013	A	36 472	0	36 472	2.2	100	Yes	No	No	No	14	0	0
Kyrgyzstan	2011	A	8 277	0	8 277	1.5	100	Yes	Yes	No	No	16	...	0
	2012	A	5 573	0	5 573	1	100	Yes	Yes	No	No	1.4	7.5	0
	2013	A	...	...	...	...	...	Yes	Yes	No	No	0.6	1.6	0
Latvia	2011	...	...	...	...	...	...	...	...	...	...	...	...	...
	2012	C	...	...	...	...	...	Yes	Yes	No	No	100	100	...
	2013	B, C, D	3 799	0	3 799	1.9	100	Yes	Yes	No	No	...	...	...
Luxembourg	2011	C	4 845	1 686	6 531	12.6	74	Yes	Yes	No	No	80	80	0
	2012	C	5 581	2 274	7 855	15	71	Yes	Yes	No	No	95	55	0
	2013	C	4 859	1 941	6 800	12.8	71	Yes	Yes	No	No	100	70	0
Malaysia	2011	C	28 312	3 247	31 559	1.1	90	Yes <sup>18</sup>	Yes	Yes	Yes	...	...	...
	2012	C	18 923	2 750	21 673	0.7	87	Yes	Yes	Yes	Yes	41	57	10
	2013	C	28 251	4 210	32 461	1.1	87	Yes	Yes	Yes	No	21	86	27
Mexico	2011 <sup>19</sup>	...	...	...	...	...	...	...	...	...	...	...	...	...
	2012	C	...	...	...	...	...	Yes	Yes	Yes	Yes	...	...	...
	2013	C	1 300 <sup>20</sup>	0	1 300	100	...	...	...	...	...	...	...	...
Morocco	2011	A, C	12 000	0	12 000	0.4	100	Yes	Yes	Yes	Yes	100	100	100
	2012	A, C	12 000	0	12 000	0.4	100	Yes	Yes	Yes	Yes	100	100	100
	2013	C	12 000	0	12 000	0.4	100	Yes	Yes	Yes	Yes	50	80	50
Netherlands	2011	A	135 000	210 000	345 000	20.7	39	Yes	Yes	Yes	Yes	80	70	85
	2012	A	150 000	167 000	317 000	19	47	Yes	Yes	Yes	Yes	85	75	80
	2013	A	134 074	174 821	308 895	18.4	43	Yes	Yes	Yes	Yes	...	...	...
New Zealand	2011	C	35 040	16 020	51 060	11.6	69	Yes	Yes	Yes	Yes	100	100	100
	2012	C	16 876	34 837	51 713	11.6	33	Yes	Yes	Yes	Yes	100	100	100
	2013	C	32 746	16 676	49 422	11	66	Yes	Yes	Yes	Yes	100	100	100

<sup>11</sup> Report states: "No plasma collected in the country is used for fractionation. All products are imported from abroad."

<sup>12</sup> Finland is a member of the European Union, which is open for competition. In Finland, plasma fractionation companies compete with each other. All major companies are present in Finland. Hospitals, or group purchasing organizations of hospitals, usually buy products at the best price. Plasma products made of domestic plasma are not preferred. If calculated based on the amount of plasma required to produce the amount of products needed in Finland, the country is self-sufficient regarding FVIII, FIX, albumin and PCC. The only exceptions are IV and SC immunoglobulins. Finland was in 2011 50% self-sufficient regarding IV and SC immunoglobulins.

<sup>13</sup> Report states: "No plasma collected in the country is used for fractionation. All products are imported from abroad."

<sup>14</sup> Report states: "No plasma collected in the country is used for fractionation. All products are imported from abroad."

<sup>15</sup> Recovered plasma is sent for fractionation in lieu of money, as well as products and services. Apheresis plasma is hardly carried out in the country for plasma fractionation. Albumin and IVIG are produced from plasma collected from blood banks, but they are insufficient for the country's needs and most products are imported.

<sup>16</sup> There are no specific source/plasmapheresis plasma donors. Plasma from apheresis donations and part of whole blood-derived FFP are used as source plasma for fractionation.

<sup>17</sup> Source plasma collected and separated by Japanese Red Cross Society are distributed to both the not-for-profit sector and commercial companies.

<sup>18</sup> No data collected nationally.

<sup>19</sup> Report states: "No plasma collected in the country is used for fractionation. All products are imported from abroad."

<sup>20</sup> This is an estimate. Plasma is delivered on agreement; it is not sold to the manufacturers.

Country	Data year	Volume of plasma used for fractionation, or sold to the manufacturers of PDMP for fractionation					Products manufactured by fractionation of plasma collected in the country				% of self-reliance of PDMP supplies**		
		Recovered plasma (L)	Apheresis plasma (L)	Total (L)	L per 1000 population	% of recovered plasma	Albumin	IVIG	Factor VIII	Factor IX	Albumin	IVIG	Factor VIII
<b>2011<sup>21</sup></b>													
Norway	2012	C, D	52 785	0	52 785	10.6	100	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—	—	—	—	—	—
Poland	2011	B, C, D	73 580	17 751	91 331	2.4	81	Yes	Yes	Yes	Yes	...	...
	2012	B	162 982	29 032	192 014	5	85	No	No	No	No	...	...
	2013	B	209 297	12 134	221 431	5.8	95	No	No	No	No	...	...
Republic of Korea	2011	A, B, C	...	...	...	...	Yes	Yes	Yes	Yes	Yes	...	...
	2012	A, B, D	213 505	180 594	394 099 <sup>22</sup>	8	54	Yes	Yes	Yes	Yes	49	100
	2013 <sup>23</sup>	A, B, D	213 696	268 691	482 387	9.8	44	Yes	Yes	Yes	Yes	58	100
Republic of Moldova	2011	A	3 663	318.9	3 982	1.1	92	Yes	No	No	No	100	0
	2012	...	2 856	465	3 321	0.9	86	Yes	No	No	No	100	0
	2013	A	3 513	390.4	3 904	1.1	90	Yes	No	No	No	100	0
Russian Federation	2011	A, D	123 023	0	123 023	0.9	100	Yes	Yes	Yes	Yes	...	...
	2012	A	168 654	0	168 654	1.2	100	Yes	Yes	Yes	Yes	...	...
	2013	A	148 011	0	148 011	1	100	Yes	Yes	Yes	Yes	...	...
Serbia	2011	A	12 000	650	12 650	1.3	95	Yes	No	No	No	12	0
	2012	A	5 470	670	6 140	0.6	89	Yes	No	No	No	12	0
	2013	A	5 332	633	5 965	0.6	89	Yes	No	No	No	10	0
Singapore	2011	C	16 358	5 401	21 768	4.2	75	Yes	Yes	Yes	No	72	19
	2012	C	14 632	4 396	19 028	3.6	77	Yes	Yes	Yes	No	66	22
	2013	C	17 932	4 592	22 524	4.2	80	Yes	Yes	Yes	No	66	22
Slovakia	2011	C	...	...	...	...	...	...	...	...	...	...	...
	2012	C	23 567	0	23 567	4.3	100	Yes	Yes	Yes	Yes	100	...
	2013 <sup>24</sup>	C	18 314	0	18 314	3.4	100	Yes	Yes	...	...	41	36
Slovenia	2011	A, C	16 669	360	17 029	8.3	98	Yes	Yes	Yes	Yes	70	90
	2012	A, C	15 177	451	15 628	7.6	97	Yes	Yes	Yes	Yes	70	90
	2013	C	17 000	0	17 000	8.2	100	Yes	Yes	Yes	Yes	70	80
South Africa	2011	A, D	180 000 <sup>25</sup>	3 000	183 000	3.5	98	Yes	Yes	Yes	Yes	100	95
	2012	A	198 351	0	198 351	3.8	100	Yes	Yes	Yes	Yes	0	0
	2013	A	203 529	5 147	208 676	4	98	Yes	Yes	Yes	Yes	80	80
Spain <sup>26, 27</sup>	2011	A	366 578	...	366 578	7.9	...	Yes	Yes	Yes	Yes	...	...
	2012	A	368 528	...	368 528	7.9	...	Yes	Yes	Yes	Yes	82	63
	2013	A	370 659	...	370 659	7.9	...	Yes	Yes	Yes	Yes	...	...
Sweden	2011	...	...	...	...	...	...	...	...	...	...	...	...
	2012	B, C, D	98 837	30 103	128 940	13.6	77	...	...	...	...	...	...
	2013	B, D	97 598	24 596	122 194	12.8	80	Yes	Yes	Yes	Yes	...	...
Switzerland	2011	B, C, D	84 641	1 569	86 210	10.9	98	Yes	Yes	Yes	Yes	...	...
	2012	...	76 121	1 786	77 907	9.7	98	...	...	...	...	...	...
	2013	B, D	78 684	1 742	80 426	10	98	...	...	...	...	...	...
Thailand	2011	A, D	10 000	1 200	11 200	0.2	89	Yes	No	No	No	5	...
	2012	A, C, D	57 000	3 000	60 000	0.9	95	Yes	No	No	No	5	...
	2013	A	...	...	...	...	Yes	No	No	No	No	...	...
United States of America	2011	B, C, D	1 193 218	0	1 193 218 <sup>28</sup>	100	Yes	Yes	Yes	Yes	Yes	...	...
	2012	B	...	...	...	...	Yes	Yes	Yes	Yes	Yes	...	...
	2013	B, C, D	...	...	...	...	Yes	Yes	Yes	Yes	Yes	...	...
Uruguay	2011	—	—	—	—	—	—	—	—	—	—	—	—
	2012 <sup>29</sup>	C	...	...	...	...	Yes	Yes	Yes	No	...	...	...
	2013 <sup>30</sup>	C	11 639	0	11 639	3.4	100	Yes	Yes	Yes	No	...	...
Venezuela (Bolivarian Republic of)	2011	A	...	...	...	...	Yes	Yes	Yes	Yes	Yes	...	...
	2012	...	...	...	...	...	...	...	...	...	...	...	...
	2013	—	—	—	—	—	—	—	—	—	—	—	—

<sup>21</sup> Report states: "No plasma collected in the country is used for fractionation. All products are imported from abroad."

<sup>22</sup> In 2012, the Republic of Korea imported 413 072 litres of plasma.

<sup>23</sup> The Korean Red Cross produced half-finished products which were supplied to the commercial sectors.

<sup>24</sup> There is no fractionation company in Slovakia. Slovakia is self-sufficient in albumin. The volume of plasma fractionated on contract is determined by albumin utilization in Slovakia. The rest of PDMP were purchased from PDMP suppliers in the market.

<sup>25</sup> This information was obtained from the National Bioproducts Institute, South Africa. Of the total 180 000 litres of plasma used for fractionation, WPBTS uses 30 000 litres at its own small fractionation facility.

<sup>26</sup> National data.

<sup>27</sup> Volume of plasma used for fractionation include both the recovered and apheresis plasma.

<sup>28</sup> The data for this field originate from the American Red Cross and New York Blood Center, which accounts for approximately 49% of the U.S. blood supply.

<sup>29</sup> Uruguay has a binational agreement for the interchange of plasma and PDMP with the fractionation plant of the National University of Cordoba, which has been functioning for 29 years. The three products that were produced with the collected plasma are not the only products in the country; commercial products were also purchased in the private sector and part of the state services.

<sup>30</sup> Through a binational agreement for the interchange of plasma and PDMP with the fractionation plant of the National University of Cordoba.

<sup>31</sup> Albumin: For patients of the ASSE (Administración de los Servicios de Salud del Estado, Administration of State Health Services), there is 100% coverage. IVIG: in 2013 the interchange programme satisfied all treatment requests of the ASSE patients.

## Annex 11 Policy, governance, quality assurance and monitoring 2013

... Not reported/not available.

Blank: Not required/not applicable.

— No response.

\* 2012 data.

\*\* 2011 data.

Country	Unit within MoH with responsibility for governing blood provision and transfusion activities	National blood policy	Multiyear national strategic plan for blood safety or equivalent	Specific legislation covering the safety and quality of blood and blood products for transfusion	National blood committee (or equivalent)	Published annual report on activities of NBTS/ BTS	Specific government budgetary line item for the NBTS/ BTS	System of cost recovery for NBTS/ BTS	National standards for the collection, testing, processing, storage and distribution of blood and blood components	National guidelines on the appropriate clinical use of blood
Afghanistan	Yes	Yes	No	...	Yes	No	Yes	No	Yes	No
Albania	Yes	No	No	Yes	Yes	No	Yes	No	Yes	Yes
Algeria	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Andorra	—	—	—	—	—	—	—	—	—	—
Angola	Yes	Yes	Yes	Yes	Yes	Yes	Yes	...	Yes	Yes
Antigua and Barbuda**	Yes	No	No	No	No	No	No	...	...	...
Argentina	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Armenia	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No
Australia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Austria	—	—	—	—	—	—	—	—	—	—
Azerbaijan	—	—	—	—	—	—	—	—	—	—
Bahamas	No	Partial	Yes	No	Partial	No	No	No	Yes	No
Bahrain	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Bangladesh	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Barbados*	No	No	No	No	No	No	No	No	Yes	Yes
Belarus**	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes
Belgium	Yes	Yes	...	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Belize	Yes	No	No	No	Yes	No	No	No	Yes	No
Benin	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Bhutan	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes
Bolivia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>2</sup>
Bosnia and Herzegovina	—	—	—	—	—	—	—	—	—	—
Botswana	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Brazil*	Yes	Yes	No	Yes	Yes	...	No	No	Yes	Yes
Brunei Darussalam	No	No	No	No	No	Yes	Yes	No	Yes	No
Bulgaria*	Yes	Yes	...	Yes	Yes	No	Yes	Yes	Yes	Yes
Burkina Faso	No	No	Yes	No	No	Yes	Yes	No	Yes	Yes
Burundi	No	Yes	Yes	Yes	No	...	Yes	Yes	Yes	No
Cambodia	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes
Cameroon	Yes	...	Yes	Yes	No	Yes	Yes	No	No	No
Canada	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cape Verde	Yes	Yes	Yes	Yes	Yes	No	No <sup>3</sup>	No	Yes	No
Central African Republic	Yes	Yes	Yes	No	No	Yes	...	No	Yes	No
Chad	Yes	Yes	No	No	No	Yes	Yes	No	Yes	No
Chile	Yes	Yes	Yes	Partial	Yes	No	Yes	No	Yes	Yes
China	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Colombia	Yes	Yes	No	No	No	Yes	No	Yes <sup>4</sup>	Yes	Yes
Comoros	Yes	Yes	No	Yes	No	...	No	Yes	Yes	No
Congo	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes

<sup>1</sup> In Bolivia the users of the public and private systems are responsible for the low-cost single fees approved by the Ministry of Health; for those in the social security system it is through monthly contributions.

<sup>2</sup> Edition 2006, under revision.

<sup>3</sup> The blood banks are supported by the hospitals and Ministry of Health budget.

<sup>4</sup> In Colombia, an obligatory health insurance plan was established whereby certain procedures are covered by the system. These procedures include the transfusion of blood and its components.

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Cook Islands	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes
Costa Rica	No	No	No	No	No	No	No	No	No	No
Côte d'Ivoire	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Croatia	Yes	...	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Cuba	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Cyprus	...	...	...	Yes	...	No	Yes	No	Yes	No
Czech Republic	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Democratic People's Republic of Korea	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Democratic Republic of the Congo	Yes	Yes	Yes	No	No	Yes	No <sup>5</sup>	Yes	Yes	No
Denmark	Yes	Yes	No	Yes	Yes	Yes	Yes <sup>6</sup>	No	Yes	Yes
Djibouti**	...	...	...	...	...	...	...	...	...	...
Dominica	No	No	No	No	No	No	No	No	Yes	No
Dominican Republic	Yes	Yes	Yes	Yes	Yes	...	Yes	...	...	No
Ecuador	Yes	Yes	No	Yes	No	No	Yes	Yes	No	Yes
Egypt	No	Yes	No	Yes	Yes	...	Yes	Yes	Yes	Yes
El Salvador	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes
Equatorial Guinea	—	—	—	—	—	—	—	—	—	—
Eritrea	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes
Estonia	No	No	No	Yes	Yes	No	No	Yes	Yes	Yes
Ethiopia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Fiji*	No	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
Finland	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes
France	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gabon	No	Yes	No	No	No	Yes	Yes	Yes	Yes	No
Gambia	Yes	Yes	Yes	No	No	No	Yes	No	Yes	No
Georgia	Yes	Yes	...	Yes	Yes	No	Yes	Yes	Yes	Yes
Germany	Yes	Yes	...	Yes	Yes	Yes	No	Yes	Yes	Yes
Ghana	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Greece	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	...	Yes
Grenada	No	No	No	No	No	...	No	...	...	Yes
Guatemala	Yes	Partial	Yes	Yes	Partial	No	Yes	No	Yes	Yes
Guinea	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Guinea-Bissau	Yes	Yes	...	...	Yes	Yes	No	Yes	Yes	Yes
Guyana	Yes	Partial	Partial	No	No	...	Yes	Yes	Yes	Yes <sup>7</sup>
Haiti	...	...	...	...	...	...	...	...	...	...
Honduras	Yes	Partial <sup>8</sup>	No	No	Partial	No	Yes	Yes <sup>9</sup>	Yes	Yes
Hungary*	No	Yes	...	No	Yes	Yes	Yes	Yes	Yes	Yes
Iceland*	Yes	No	No	Yes	Yes	Yes	No	No	Yes	Yes
India	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indonesia	Yes	Yes	No	Yes	Yes	No	Yes <sup>10</sup>	Yes	No	No
Iran (Islamic Republic of)	Yes <sup>11</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Iraq**	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Ireland*	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Israel	No	No	No	No	Yes	Yes	No	Yes	Yes	No
Italy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	...	Yes	Yes
Jamaica	No	Yes	No	No	...	Yes	Yes	Yes <sup>12</sup>	Yes	Yes

<sup>5</sup> There is not a proper budget line for blood transfusion but the NBTS receives some subsidies from the government to purchase reagents, inputs and equipment. There is also the payment of staff salaries.

<sup>6</sup> All blood centre activities are financed by the government through taxes. Blood is free of charge for wards and patients.

<sup>7</sup> Adapted from Caribbean regional standards and internal SOPs.

<sup>8</sup> The policy is undergoing revision pending approval by the authorities.

<sup>9</sup> Each hospital requests a direct payment from the users of blood services. The fee varies from hospital to hospital.

<sup>10</sup> Direct funding from government to the blood services were in the form of reagents for blood screening, premises, equipment and mobile unit vehicles.

<sup>11</sup> The responsibility for governing all activities related to blood and blood components is delegated to the headquarters of IBTO under the supervision of the High Council.

<sup>12</sup> Only partial cost recovery, mainly from private hospitals.

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Japan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Jordan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kazakhstan	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Kenya	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes
Kiribati**	Yes	No	No	No	Yes	No	No	No	Yes	No
Kuwait**	Yes	No	No	No	...	Yes	Yes	No	Yes	No
Kyrgyzstan	Yes	Yes	Yes	Yes	Yes	Yes	...	Yes	Yes	Yes
Lao People's Democratic Republic	Yes	Yes	Yes	No	...	No	No	Yes	Yes	Yes
Latvia	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Lebanon	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No
Lesotho	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes
Liberia	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes
Libya	...	...	No	No	No	No	No	No	No	No
Lithuania*	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Luxembourg	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Madagascar	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Malawi	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes
Malaysia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maldives	Yes	Yes	No	No	No	No	Yes	No	Yes	No
Mali	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No
Malta	—	—	—	—	—	—	—	—	—	—
Marshall Islands**	No	No	No	No	No	No	No	No	Yes	No
Mauritania	No	Yes	No	No	No	Yes	Yes	No	Yes	Yes
Mauritius	Yes	Yes	...	...	...	Yes	No	No	Yes	...
Mexico	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Micronesia (Federated States of)	No	No	No	No	No	No	No	Yes	Yes	No
Monaco	—	—	—	—	—	—	—	—	—	—
Mongolia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Montenegro	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Morocco	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mozambique	Yes	No	No	No	No	Yes	Yes	No	Yes	Yes
Myanmar	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
Namibia	No	Yes	Yes	...	No	Yes	No	Yes	Yes	Yes
Nauru	No	...	No	No	No	...	...	No	No	Yes
Nepal	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Netherlands	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
New Zealand	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Nicaragua	...	Yes	Yes	Yes	Yes	...	Yes	...	...	Yes
Niger	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes
Nigeria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Niue	No	No	No	...	No	No	Yes	No	Yes	Yes
Norway*	Yes	Yes	No	Yes	Yes	...	No	Yes	Yes	...
Oman	Yes	No	Yes	No	No	Yes	Yes	No	No	Yes
Pakistan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Palau	—	—	—	—	—	—	—	—	—	—
Panama	...	...	...	...	...	...	...	...	...	...
Papua New Guinea	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	...
Paraguay	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Peru	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Philippines	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Poland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Portugal	Yes	No	No	Yes	No	Yes	...	...	Yes	Yes
Qatar	Yes	Yes	Yes	Yes	...	...	Yes	...	Yes	Yes

<sup>13</sup> Partial cost recovery (only for processing and screening cost) for private health care facilities, which source their supplies from Ministry of Health blood banks.

<sup>14</sup> Funding is provided by the Ministry of Health.

Country	Unit within MoH with responsibility for governing blood provision and transfusion activities	National blood policy	Multiyear national strategic plan for blood safety or equivalent	Specific legislation covering the safety and quality of blood and blood products for transfusion	National blood committee (or equivalent)	Published annual report on activities of NBTS/ BTS	Specific government budgetary line item for the NBTS/ BTS	System of cost recovery for NBTS/ BTS	National standards for the collection, testing, processing, storage and distribution of blood and blood components	National guidelines on the appropriate clinical use of blood
Republic of Korea	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Republic of Moldova	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Romania	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Russian Federation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rwanda	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Saint Kitts and Nevis	No	No	No	No	Partial	No	No	Yes	No	No
Saint Lucia	No	No	No	No	No	...	No	...	Yes	No
Saint Vincent and the Grenadines	No	No	No	No	No	No	No	No <sup>15</sup>	...	No
Samoa	Yes	No	No	No	Yes	No	No	No	Yes	Yes
San Marino	—	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	No	Yes	Yes	No	No	No	No	No	Yes	Yes
Saudi Arabia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Senegal	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Serbia	...	...	...	...	Yes	...	...	...	...	...
Seychelles	Yes	No	No	No	No	No	Yes	No	Yes	Yes
Sierra Leone	Yes	Yes	Yes	No	No	No	Yes <sup>16</sup>	No	Yes	Yes
Singapore	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Slovakia	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes
Slovenia	Yes	Yes	No	Yes	Yes	Yes	...	Yes	Yes	Yes
Solomon Islands*	Yes	Yes	No	No	No	Yes	No	No	Yes	No
Somalia	Yes	...	...	...	...	...	...	...	...	...
South Africa	Yes	Yes	Yes	Yes	No	Yes <sup>17</sup>	No	Yes	Yes	Yes
South Sudan	No	No	Yes	No	No	No	No	No	No	Yes
Spain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sri Lanka	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes
Sudan	Yes	...	...	...	Yes	No	Yes	No	No	Yes
Suriname	Yes	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	No
Swaziland*	Yes	No	Yes	No	No	No	Yes	No	Yes	Yes
Sweden	...	...	...	Yes <sup>18</sup>	Yes	Yes	...	...	Yes	No <sup>19</sup>
Switzerland	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	...
Syrian Arab Republic	—	—	—	—	—	—	—	—	—	—
Tajikistan	Yes	Yes	Yes	No	No	No	Yes	No	Yes	No
Thailand	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
The former Yugoslav Republic of Macedonia	No	No	No	Yes	No	No	...	Yes	Yes	...
Timor-Leste	Yes	Yes	Yes	...	...	Yes	Yes	No	...	Yes
Togo	Yes	Yes	...	Yes	Yes	Yes	Yes	Yes	Yes	No
Tonga	—	—	—	—	—	—	—	—	—	—
Trinidad and Tobago	No	No	No	No	No	No	No	No	No	...
Tunisia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>20</sup>	Yes	Yes
Turkey	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Turkmenistan	—	—	—	—	—	—	—	—	—	—
Tuvalu	Yes	No	No	No	No	No	Yes <sup>21</sup>	No	No	No

<sup>15</sup> Patients are billed a minimal fee for blood requested.

<sup>16</sup> The National AIDS Secretariat (NAS) provides salaries for seven NBTS staff and also provides some consumables and screening kits. Stock-out of blood bags and other consumables can occur occasionally. There is a budget line but it is not easily accessible.

<sup>17</sup> Both SANBS and WPBTS publish formal annual reports detailing activities and financial statements.

<sup>18</sup> County councils are the funding and governing bodies for HBBs/BEEs in Sweden. The HBBs/BEEs in Sweden co-operate in an alliance and have regular communication with the competent authorities.

<sup>19</sup> No national guidelines but some regional guidelines exist.

<sup>20</sup> CNTS is not financed by the state; it is self-financed through charging fees for the use of blood products and the its laboratory services , but the state is involved in the payment of staff and the purchase of equipment.

<sup>21</sup> Government budget is for the whole laboratory, not specific for blood transfusion service.

Country	Unit within MoH with responsibility for governing blood provision and transfusion activities	National blood policy	Multiyear national strategic plan for blood safety or equivalent	Specific legislation covering the safety and quality of blood and blood products for transfusion	National blood committee (or equivalent)	Published annual report on activities of NBTS/ BTS	Specific government budgetary line item for the NBTS/ BTS	System of cost recovery for NBTS/ BTS	National standards for the collection, testing, processing, storage and distribution of blood and blood components	National guidelines on the appropriate clinical use of blood
Uganda	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
Ukraine	—	—	—	—	—	—	—	—	—	—
United Arab Emirates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
United Kingdom of Great Britain and Northern Ireland	...	Yes	Yes	Yes	Yes	Yes	...	No	Yes	Yes
United Republic of Tanzania	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes
United States of America	No	No	No	Yes	Yes	...	No	Yes	Yes	Yes
Uruguay	...	...	...	...	...	...	...	...	...	...
Uzbekistan	—	—	—	—	—	—	—	—	—	—
Vanuatu	No	Yes	No	No	No	No	Yes	No	Yes	Yes
Venezuela (Bolivarian Republic of)*	Partial	No	...	Yes	Partial	...	Yes	...	Yes	Partial
Viet Nam	No	No	No	Yes	Yes	No	No	Yes	Yes	No
Yemen*	No	No	No	No	No	Yes	Yes	No	Yes	Yes
Zambia	Yes <sup>22</sup>	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Zimbabwe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

<sup>22</sup> The Zambia National Blood Transfusion Service (ZNBTS) is the only entity in the country mandated to collect blood from voluntary blood donors and process the donated units for final distribution to user hospitals. The ZNBTS runs a nationally coordinated system as a statutory board under the Ministry of Health in Zambia.

## Annex 11 Policy, governance, quality assurance and monitoring 2013 (continued)

Country	Programme of continuing education for personnel involved in blood transfusion	Educational programmes that offer a nationally recognized university degree or diploma in blood transfusion	National haemovigilance system	Collection of data on donor-related adverse events	Collection of data on recipient-related adverse events	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited
Afghanistan	Yes	No	No			No	No	No	
Albania	Yes	Yes	No			Yes	No	No	
Algeria	Yes	Yes	No			Yes	Yes	No	
Andorra	—	—	—	—	—	—	—	—	—
Angola	Yes	Yes	No			Yes	Yes	No	
Antigua and Barbuda**	...	No	No			No	Yes		
Argentina	Yes	Yes <sup>23</sup>	No			Yes	Yes	Yes <sup>24</sup>	
Armenia	Yes	Yes	No			No	Yes	No	
Australia	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	82
Austria	—	—	—	—	—	—	—	—	—
Azerbaijan	—	—	—	—	—	—	—	—	—
Bahamas	No	No	No			No	No	No	
Bahrain	Yes	No	No			No	Yes	No	
Bangladesh	Yes	Yes	No			Yes	Yes	No	
Barbados*	No	No	No			No	No	No	
Belarus**	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Belgium	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>25</sup>	2
Belize	No	No	No			Yes	No	No	
Benin	No	No	No			Yes	No	No	
Bhutan	Yes	No	Yes	Yes	Yes	Yes	Yes	No	
Bolivia	Yes	Yes <sup>26</sup>	Yes	Yes	Yes	Yes	...	Yes	
Bosnia and Herzegovina	—	—	—	—	—	—	—	—	—
Botswana	Yes	No	No			No	No	No	
Brazil*	No	Yes	Yes	No	Yes	Yes	Yes	...	
Brunei Darussalam	Yes	No	No			No	No	No	
Bulgaria*	Yes	Yes	Yes	Yes	Yes	Yes	...	Yes	29
Burkina Faso	Yes	No	Yes	Yes	Yes	No	No	No	
Burundi	No	No	No			Yes	Yes	No	
Cambodia	Yes	No	No			Yes	Yes	No	
Cameroon	No	No	No			No	No	No	
Canada	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Cape Verde	No	No	No			Yes	Yes	No	
Central African Republic	No	No	No			Yes	Yes	No	
Chad	No	No	No			No	No	...	
Chile	Yes	Yes	No <sup>27</sup>			Yes	Yes	Yes <sup>28</sup>	
China	Yes	Yes	No			Yes	Yes	...	
Colombia	Yes	Yes	Partial			Yes	Yes	Yes <sup>29</sup>	2
Comoros	No	No	No			No	Yes	No	
Congo	No	No	No			No	No	No	
Cook Islands	Yes	No	Yes	Yes	Yes	Yes	No	No	
Costa Rica	No	Yes <sup>30</sup>	No			Partial <sup>31</sup>	Yes	No	

<sup>23</sup> AAHI (Argentinian Association of Hemotherapy and Immunohematology). Provincial ministries – private and public universities.

<sup>24</sup> AAHI (Argentinian Association of Hemotherapy and Immunohematology).

<sup>25</sup> ISO 9001:2008 and ISO 15189.

<sup>26</sup> International Master in Transfusion Medicine Quality Management.

<sup>27</sup> A national haemovigilance system as such does not exist. There is a national information system – REM (monthly statistical registry) – where the information reports on adverse reactions to donation (RAD) have been collected since 2013.

<sup>28</sup> Accreditation of health providers since 2009. All blood services providing services as health care providers.

<sup>29</sup> Two blood banks accredited by AABB (granted by the Medical Laboratory of the Americas).

<sup>30</sup> The postgraduate programme is offered by the University of Costa Rica with speciality in immunohematology and blood banks.

<sup>31</sup> Service licensing. Only structural standards are verified to grant an operating licence every two years.

Country	Programme of continuing education for personnel involved in blood transfusion	Educational programmes that offer a nationally recognized university degree or diploma in blood transfusion	National haemovigilance system	Collection of data on donor-related adverse events	Collection of data on recipient-related adverse events	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited
Côte d'Ivoire	Yes	No	Yes	Yes	Yes	Yes	Yes	No	
Croatia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
Cuba	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Cyprus	Yes	...	Yes	Yes	Yes	Yes	No	No	
Czech Republic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>32</sup>	
Democratic People's Republic of Korea	Yes	Yes	Yes			Yes	Yes	No	
Democratic Republic of the Congo	Yes	No	Yes	Yes	Yes	No	No	No	
Denmark	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>33</sup>	5
Djibouti**	...	...	...	...	...	...	...	...	...
Dominica	Partial	No	No			No	No	No	
Dominican Republic	No	...	...			Yes	...	No	
Ecuador	No	Yes	No			No	Yes	No	
Egypt	Yes	Yes	No			Yes	Yes	Yes <sup>34</sup>	1
El Salvador	Yes	No	No			Partial	Yes	No	
Equatorial Guinea	—	—	—	—	—	—	—	—	—
Eritrea	Yes	No	No			Yes	Yes	No	
Estonia	No	Yes	Yes	Yes	Yes	Yes	Yes	No	
Ethiopia	No	No	No			No	No	No	
Fiji*	No	No	No			No	No	No	
Finland	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>35</sup>	1
France	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>36</sup>	
Gabon	Yes	No	No			No	No	No	
Gambia	No	No	No			No	No	No	
Georgia	No	Yes	No			No	Yes	...	
Germany	Yes	Yes	Yes	Yes	Yes	Yes	Yes	...	
Ghana	Yes	Yes	Yes <sup>37</sup>	Yes	Yes	No	No <sup>38</sup>	No	
Greece	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	40
Grenada	No	...	...			...	Yes	...	
Guatemala	Yes	No	No			Yes	Yes	No	
Guinea	No	No	No			No	No	No	
Guinea-Bissau	No	No	No			Yes	Yes	No	
Guyana	Yes	No	No			No	Partial <sup>39</sup>	No	
Haiti	...	...	No			...	...	...	
Honduras	Partial	No	No			Partial	No	Yes <sup>40</sup>	2
Hungary*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
Iceland*	No	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>41</sup>	1
India	Yes	Yes	No <sup>42</sup>			Yes	Yes	Yes <sup>43</sup>	60
Indonesia	Yes	Yes	No			No	No	No	
Iran (Islamic Republic of)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>44</sup>	91

<sup>32</sup> Accreditation is not obligatory but around 90% of BTS have some kind of accreditation (ISO or other standards).

<sup>33</sup> Five of five blood centres are accredited according to the Danish Quality Model for Hospitals; one of five is accredited according to ISO 15189.

<sup>34</sup> AABB (accredited with conditional status).

<sup>35</sup> EFI, FINAS (ILAC), FACT.

<sup>36</sup> EFS received national certification ISO 9001:2008 (Bureau Véritas) in 2012. It has been renewed every year since.

<sup>37</sup> There are facility-based systems for collection of data on donor-related and recipient-related adverse events. A national haemovigilance system is now being established.

<sup>38</sup> The process is currently ongoing. The national blood regulatory authority in Ghana, which is the Food and Drugs Authority (FDA), is working together with the blood service in developing the necessary documents for licensing and accreditation of blood establishments.

<sup>39</sup> Only the laboratory section can be licensed since there is no competent body to license blood banking.

<sup>40</sup> AABB accredited.

<sup>41</sup> ISO 9001:2008.

<sup>42</sup> National haemovigilance programme is under pilot study for reporting of recipient data.

<sup>43</sup> The Quality Council of India is the apex body for accreditation of various sectors. The National Accreditation Board for Hospitals and Health Care Providers (NABH) has a special programme for accreditations of blood banks.

<sup>44</sup> According to a parliamentary law, the Iranian Blood Transfusion Organization (IBTO) is supervised for all programmes and activities by the High Council. Evaluation and inspection by headquarters and permission of the High Council are mandatory before centres can start activities. The activities of centres are inspected regularly by headquarters.

Country	Programme of continuing education for personnel involved in blood transfusion	Educational programmes that offer a nationally recognized university degree or diploma in blood transfusion	National haemovigilance system	Collection of data on donor-related adverse events	Collection of data on recipient-related adverse events	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited
Iraq**	Yes	No	No			...	...		
Ireland*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2
Israel	No	No	No			No	No	Yes <sup>45</sup>	
Italy	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
Jamaica	Partial	No	No			No	No	No	
Japan	...	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>46</sup>	54
Jordan	Yes	No	Yes	Yes	Yes	Yes	No	No	
Kazakhstan	Yes	Yes	...			Yes	Yes	No	
Kenya	No	Yes	No			No	No	No	
Kiribati*	No	No	No			No	No	No	
Kuwait**	Yes	Yes	No			Yes	Yes		
Kyrgyzstan	Yes	No	Yes			Yes	Yes	No	
Lao People's Democratic Republic	Yes	No	No			Yes	Yes	No	
Latvia	Yes	Yes	...			Yes	Yes	Yes	10
Lebanon	Yes	No	No			Yes	Yes	Yes <sup>47</sup>	52
Lesotho	No	No	No			No	No	No	
Liberia	No	...	Yes	Yes	Yes	No	No	No	
Libya	Yes	No	No			No	...	No	
Lithuania*	...	...	Yes	Yes	Yes	Yes	Yes	Yes	4
Luxembourg	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>48</sup>	1
Madagascar	No	Yes	No			Yes	Yes	...	
Malawi	Yes	No	Yes	Yes	Yes	No	Yes	No	
Malaysia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>50</sup>	7
Maldives	No	No	No			No	No	No	
Mali	Yes	No	No			No	No	No	
Malta	—	—	—	—	—	—	—	—	—
Marshall Islands**	No	No	No			No	No		
Mauritania	No	No	No			No	No	No	
Mauritius	Yes	No	Yes	Yes	Yes	No	No	Yes <sup>51</sup>	1
Mexico	Yes	Yes	No			Yes	Yes	Yes <sup>52</sup>	
Micronesia (Federated States of)	Yes	No	No			No	No	No	
Monaco	—	—	—	—	—	—	—	—	—
Mongolia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	27
Montenegro	Yes	Yes	No			No	No	No	
Morocco	Yes	No	Yes	Yes	Yes	Yes <sup>53</sup>	Yes	No	
Mozambique	Yes	No	No			No	No	No	
Myanmar	Yes	No	No			Yes	No	No	
Namibia	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>54</sup>	1
Nauru**	...	No	No			No	No		
Nepal	Yes	No	No			Yes	Yes	No	
Netherlands	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
New Zealand	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>55</sup>	6
Nicaragua	Yes	...	...			...	...	Yes <sup>56</sup>	
Niger	Yes	No	No			No <sup>57</sup>	Yes	No	

<sup>45</sup> ISO 9000:2008.

<sup>46</sup> The Japanese Red Cross Society (JRCS) is licensed by the government to collect blood, and is the only entity in Japan that collects donated blood. Every blood centre (blood collection room) in the JRCS needs permission from the Minister of Health, Labour and Welfare.

<sup>47</sup> Ministry of public health accreditation.

<sup>48</sup> ISO 9001 and ISO 15189.

<sup>49</sup> Medical Practice Division of Ministry of Health undertakes the licensing for private health care facilities.

<sup>50</sup> Department of Standards, Malaysia.

<sup>51</sup> Mauritius is ISO 9001:2008 certified by the Mauritius Standards Bureau.

<sup>52</sup> Mexican Accreditation Body (Entidad Mexicana de Acreditación).

<sup>53</sup> The blood centres are inspected by the national centre, and each year an audit of all centres is conducted.

<sup>54</sup> AfSBT.

<sup>55</sup> Accredited by MedSafe, the New Zealand medicines regulatory authority.

<sup>56</sup> Certification ISO 9001:2008

<sup>57</sup> Supervision scheduled for the end of the year to inspect the regional and peripheral levels.

Country	Programme of continuing education for personnel involved in blood transfusion	Educational programmes that offer a nationally recognized university degree or diploma in blood transfusion	National haemovigilance system	Collection of data on donor-related adverse events	Collection of data on recipient-related adverse events	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited
Nigeria	Yes	Yes	No			No	No	No	
Niue	No	No	No			No	No	No	
Norway*	Yes	No	Yes	Yes	Yes	Yes	Yes	No	
Oman	No	No	No			No	No	No	
Pakistan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
Palau	—	—	—	—	—	—	—	—	—
Panama	...	...	...	...	...	...	...	...	...
Papua New Guinea		Yes	No			Yes	No	No	
Paraguay	Yes	Yes	No			Yes	Yes	No	
Peru	No	Yes	No			Yes	Yes	No	
Philippines	Yes	No	...			Yes	Yes	...	
Poland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>58</sup>	23
Portugal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>59</sup>	
Qatar	Yes	No	...			Yes	Yes	Yes <sup>60</sup>	1
Republic of Korea	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>61</sup>	116
Republic of Moldova	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	3
Romania	Yes	No	Yes	Yes	Yes	Yes	Yes	...	
Russian Federation	Yes	Yes	Yes			Yes	Yes	...	
Rwanda	Yes	Yes	Yes	Yes	Yes	No	No	No	
Saint Kitts and Nevis	No	No	No			No	No	No	
Saint Lucia	No	...	No			...	...	No	
Saint Vincent and the Grenadines	No	No	No			No	No	No	
Samoa	Yes	Yes <sup>62</sup>	No			No	No	No	
San Marino	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	No	No	No			No	No	...	
Saudi Arabia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
Senegal	Yes	Yes	No			Yes	Yes <sup>63</sup>	No	
Serbia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>64</sup>	
Seychelles	No	No	No			No	No	No	
Sierra Leone	No	No	No			No	No	No	
Singapore	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>65</sup>	1
Slovakia	Yes	Yes	Yes	No	Yes	...	Yes	Yes <sup>66</sup>	45
Slovenia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
Solomon Islands*	No	No	No			No	No	No	
Somalia	No	No	No			No	No	No	
South Africa	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>67</sup>	11
South Sudan	No	No	No			No	No	No	
Spain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	20
Sri Lanka	Yes	Yes	Yes	Yes	Yes	No	No	Yes <sup>68</sup>	1
Sudan	No	No	No			No	No	No	
Suriname	No	...	No			No	Yes	No	
Swaziland*	Yes	No	No			No	No	No	

<sup>58</sup> According to article 14 of the Polish Blood Transfusion Act of 22 August 1997 ([http://nck.bip.eur.pl/public/get\\_file\\_contents.php?id=229523](http://nck.bip.eur.pl/public/get_file_contents.php?id=229523)).

<sup>59</sup> ISO 9001:2008.

<sup>60</sup> College of American Pathologists.

<sup>61</sup> Blood centre approval by Korean CDC, and Blood Laboratory Centre ISO accreditation.

<sup>62</sup> The Pacific Paramedical Training Centre (PPTC) provides distance learning for a Diploma in Medical Laboratory Technology. The two-year course covers blood transfusion science.

<sup>63</sup> Any new transfusion structure must receive prior authorization of the Ministry of Health through the National Blood Transfusion Centre, which is the operator but also the guarantor of all new blood transfusion facilities. The regulatory function is now being established with the Department of Pharmacy and Medicine.

<sup>64</sup> Two laboratories of the BTIS have SRPS ISO/IEC 17025, and one is in accordance with EFL. The Novi Sad Blood Transfusion Institute HLA laboratory has European Federation of Immunogenetics (EFL) accreditation.

<sup>65</sup> AABB international accreditation.

<sup>66</sup> Blood transfusion services are accredited according to European Commission blood directives.

<sup>67</sup> SANAS (South African National Accreditation System).

<sup>68</sup> National Blood Centre is accredited for ISO 1589:2012.

Country	Programme of continuing education for personnel involved in blood transfusion	Educational programmes that offer a nationally recognized university degree or diploma in blood transfusion	National haemovigilance system	Collection of data on donor-related adverse events	Collection of data on recipient-related adverse events	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited
Sweden	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>69</sup>	23
Switzerland	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>70</sup>	
Syrian Arab Republic	—	—	—	—	—	—	—	—	—
Tajikistan	Yes	Yes	Yes	Yes		Yes	Yes	Yes	5
Thailand	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes <sup>71</sup>	
The former Yugoslav Republic of Macedonia	...	Yes	No			No	No	No	
Timor-Leste	No	No	Yes	Yes	Yes	Yes	Yes	No	
Togo	...	No	...			No	Yes	No	
Tonga	—	—	—	—	—	—	—	—	—
Trinidad and Tobago	No	...	No			No	...	No	
Tunisia	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>72</sup>	1
Turkey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes <sup>73</sup>	
Turkmenistan	—	—	—	—	—	—	—	—	—
Tuvalu	No	No	No			No	No	No	
Uganda	Yes	No	Yes	No	No	Yes	No	No	
Ukraine	—	—	—	—	—	—	—	—	—
United Arab Emirates	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes <sup>74</sup>	3
United Kingdom of Great Britain and Northern Ireland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
United Republic of Tanzania	No	No	No			No	No	No	
United States of America	Yes	Yes	Yes <sup>75</sup>	Yes	Yes	...	Yes	Yes <sup>76</sup>	
Uruguay	...	Yes	...			...	...	...	
Uzbekistan	—	—	—	—	—	—	—	—	—
Vanuatu	Yes	...	No			Yes	No	No	
Venezuela (Bolivarian Republic of)*	...	Yes	...			...	...	...	
Viet Nam	No	Yes	...			No	No	No	
Yemen*	No	No	No			No	No	No	
Zambia	Yes	No	No			No	No	No	
Zimbabwe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	

<sup>69</sup> Technical accreditation according to ISO/IEC 17025 or ISO/IEC 15189.

<sup>70</sup> GMP ISO 17025, ISO 9001.

<sup>71</sup> ISO 9001, 15189, 15190.

<sup>72</sup> Since 2004, the CNTS is certified ISO 9001, version 2000. A renewal audit takes place every year.

<sup>73</sup> 9001:2008, Joint Commission International (JCI) clinical laboratory accreditation.

<sup>74</sup> AABB, clinical laboratory accreditation standard (JCI), CAP (College of American Pathologists).

<sup>75</sup> The haemovigilance system in the United States is voluntary.

<sup>76</sup> Some transfusion services are accredited by the Joint Commission or by the AABB.

## Annex 12

## International agencies that provided financial or technical support to the NBTS/BTS during the period 2011–2013<sup>1</sup>

Country	Name(s) of the international agency/organization/institution
Afghanistan	AFD (Agence Française de Développement), WHO
Albania	CDC (Centers for Disease Control), ESTM (European School of Transfusion Medicine), EFS (Etablissement Français du Sang), WHO
Angola	Portuguese Blood Institute, CDC
Argentina	World Bank (External Financing Programs), EFS (Etablissement Français du Sang), Blood Program of Catalonia, GCIAMT (Grupo Cooperativo Iberoamericano de Medicina Transfusional), PAHO/WHO
Armenia	Global Fund
Bangladesh	World Bank, WHO, OFID (OPEC Fund for International Development), CIDA (Canadian International Development Agency), DFID (United Kingdom Department for International Development)
Belize	PAHO/WHO
Benin	Agence Belge de Développement, APEFE (Association pour la Promotion de l'Education et de la Formation à l'Etranger), WBI (Wallonie-Bruxelles International), Bavarian Red Cross, WHO
Bhutan	OFID, WHO
Bolivia	PAHO/WHO, GCIAMT
Botswana	PEPFAR (The U.S. President's Emergency Plan for AIDS Relief), CDC (through PEPFAR)
Burkina Faso	Luxembourg's Development Cooperation, WHO, UNICEF, Global Fund, UNFPA, EFS
Burundi	WHO
Cambodia	Global Fund, PEPFAR, CDC, WHO, American Red Cross Blood Services, Australian Red Cross
Cameroon	CDC, PEPFAR, Safe Blood for Africa Foundation, WHO
Chad	WHO, Global Fund
Chile	PAHO/WHO
Colombia	PAHO/WHO
Comoros	WHO
Congo	WHO
Cook Islands	Global Fund, Australian Red Cross, Pacific Paramedical Training Centre
Côte d'Ivoire	PEPFAR, WHO, Supply Chain Management System (SCMS)/CDC (Retro-Cl: Retrovirus Côte d'Ivoire project)
Croatia	WHO, TAIEX (Technical Assistance and Information Exchange instrument of the European Commission), EBA (European Blood Alliance), European Union through IPA (Instrument for the Pre-Accession Assistance)
Democratic People's Republic of Korea	WHO, IFRC
Democratic Republic of the Congo	World Bank, Global Fund, PEPFAR, MSF, European Union, WHO, Safe Blood for Africa foundation, CDC
Ecuador	PAHO/WHO
Egypt	Swiss Red Cross, Misr el Zheer charity organization
El Salvador	PAHO/WHO, Brazilian Cooperation Agency, ANVISA (Brazilian Health Regulatory Agency), JICA (Japan International Cooperation Agency)
Eritrea	Swiss Red Cross, Global Fund
Ethiopia	United States Government, PEPFAR through CDC, WHO
Fiji	WHO, Australian Red Cross, Australian Aid
Gabon	WHO
Gambia	WHO

<sup>1</sup> As reported by the countries.

Country	Name(s) of the international agency/organization/institution
Georgia	Global Fund
Ghana	WHO, CDC, PEPFAR, NDF (Nordic Development Fund), UNFPA, Rotary Club Ghana, Freemasons, European Union, Safe Blood for Africa
Guatemala	JICA, PAHO/WHO, AVIS (Associazione Volontari Italiani del Sangue)
Guinea	WHO, World Bank
Guinea-Bissau	WHO, Global Fund, UNFPA, Red Cross Guinea-Bissau
Guyana	PEPFAR, CDC, PAHO/WHO
Haiti	CDC, PEPFAR
Honduras	Red Cross, Brazilian Health Ministry, ANVISA (Brazilian Health Regulatory Agency)
India	Christian Medical Association of India with the support of CDC, WHO India
Indonesia	Australian Red Cross, WHO
Israel	MDA (non-profit organization Magen David Adom)
Jamaica	CDC, PAHO/WHO
Jordan	WHO
Kazakhstan	CDC
Kenya	PEPFAR, CDC, United States Government, Global Communities (formerly CHF International)
Kiribati	WHO, Global Fund, , UNICEF, Pacific Paramedic Training Centre, Australian Red Cross Blood Service
Kyrgyzstan	KfW Development Bank, CDC, WHO, Global Fund, AIHA (American International Health Alliance)
Lao People's Democratic Republic	Global Fund, German Red Cross, U.S. Embassy, Japanese Red Cross Society Blood Services, USPACOM (United States Pacific Command)
Lebanon	EFS
Lesotho	PEPFAR, WHO, AABB (American Association of Blood Banks)
Liberia	Global Fund, WHO, ACCEL (Academic Consortium Combating Ebola in Liberia), WHO Liberia
Lithuania	European Blood Alliance
Madagascar	WHO, AfDB (African Development Bank)
Malawi	CDC, Global Fund through National AIDS Commission of Malawi, AABB, NHSBT (NHS Blood and Transplant)
Maldives	WHO
Mali	UNFPA, UNICEF, CDC/PEPFAR, Global Fund
Mauritius	WHO
Micronesia (Federated States of)	IFRC, AusAID (Australian Aid), U.S. Sector Grant, Australian Red Cross
Mongolia	Global Fund
Montenegro	European Union through the European Union IPA 2010, Blood Transfusion in Montenegro
Mozambique	CDC/PEPFAR, Advancing Transfusion and Cellular Therapies Worldwide, AABB
Myanmar	JICA, Thai Red Cross, NRL Australia, SIF (Singapore International Foundation)
Namibia	PEPFAR, CDC
Nepal	WHO/OFID, Japanese Red Cross, Red Cross Luxembourg, Global Fund, NRL Australia, UNDP GAP (Global Advisory Panel on Corporate Governance and Risk Management of Blood Services in Red Cross and Red Crescent Societies), DFID (Department for International Development, United Kingdom), KOICA (Korea International Cooperation Agency), and others for short-term projects
Niger	AFD
Nigeria	PEPFAR through CDC's Department of Health and Human Services, Safe Blood for Africa Foundation, WHO
Pakistan	German Government through KfW provides financial support, German Government through GIZ and WHO provides technical support, BMZ (Federal Ministry for Economic Cooperation and Development, Germany), ISBT (International Society of Blood Transfusion)
Panama	PAHO/WHO
Papua New Guinea	WHO, PEPFAR
Paraguay	PAHO/WHO

<b>Country</b>	<b>Name(s) of the international agency/organization/institution</b>
Peru	PAHO/WHO
Poland	ISBT
Republic of Moldova	Global Fund, CEB (Council of Europe Development Bank), Government of Japan through the World Bank, nongovernmental organization Global Healing (USA)
Rwanda	PEPFAR, CDC, Global Fund, AABB
Saint Kitts and Nevis	PAHO/WHO
Saint Lucia	PAHO/WHO
Samoa	WHO, Global Fund, Pacific Paramedical Training Centre, WHO, EFS
Seychelles	WHO
Sierra Leone	Global Fund
Slovakia	European Commission
Solomon Islands	Australian Red Cross, WHO
Somalia	IFRC, Global Fund, WHO, COOPI (Cooperazione Internazionale), Medical Emergency Relief International (Merlin)
South Africa	AABB
South Sudan	UNDP for construction of buildings and procurement of equipment, WHO, CDC
Sri Lanka	WHO, SAATM (Asian Association of Transfusion Medicine), ISBT
Sudan	Global Fund, WHO, UNDP WHO Sudan through Global Fund resources for AIDS prevention programme
Suriname	IFRC, PAHO/WHO
Swaziland	Global Fund, CDC Cooperative Agreement, AABB
Tajikistan	WHO, CDC, Global Fund
Timor-Leste	WHO, Global Fund
Togo	AFD, EFS Alsace
Turkey	German Red Cross
Tuvalu	Global Fund, SPC (the Pacific Community)
Uganda	PEPFAR, AfsBT (Africa Society for Blood Transfusion)
United Republic of Tanzania	CDC through PEPFAR, AABB, MSH (Management Sciences for Health)
Vanuatu	WHO, SPC, Global Fund, AusAID, Australian Red Cross, Butterfly Trust
Zambia	PEPFAR, CDC
Zimbabwe	PEPFAR, Swiss Red Cross, European Union, UNICEF

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