GLOBAL STATUS REPORT ON BLOOD SAFETY AND AVAILABILITY 2021

World Health Organization

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PREFACE

The Global Database on Blood Safety (GDBS) reports important data from many countries on a range of indicators covering the transfusion chain from donor to recipient, as a basis for more informed discussion on the provision and governance of blood transfusion services. The GDBS reports also provide important input for formulating and updating World Health Organization (WHO) global blood safety strategies. The WHO Action Framework to Advance Universal Access to Safe, Effective and Quality-Assured Blood Products 2020–2023 aims to provide strategic direction to global efforts to address present barriers to the safety and availability of blood components and products. Recommendations included setting up effective surveillance, haemovigilance and pharmacovigilance, supported by comprehensive and accurate data collection systems, to facilitate monitoring and evaluation of national blood systems.

Key data and information for each Member State were listed in annexes to the previous edition of the report, which was published in 2016. Countries, development agencies and researchers found this disaggregated country data and information useful. In this 2021 report, data from the last four years have been added and listed in the annexes. With the increased availability of data for key comparable indicators over multiple years, it is now possible to conduct trend analyses, including for global and regional trends in blood collections and transfusion.

This 2021 report continues to recognize that inadequate and unsustainable financing of blood services is a major factor that impedes efforts to improve blood safety in developing countries. Governments should ensure adequate, sustainable financing for national or regional blood programmes. The financing mechanisms for blood services should be integrated within the financial structure of national health care systems. Countries with significant external donor funding support should take proactive measures to mobilize domestic sources and reduce dependence on external funding, to ensure the quality and sustainability of blood transfusion services.

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. Despite progress over the past decade, it is clear that the goal of universal access to safe blood and blood products has not been achieved in many countries. The sufficiency and safety of blood and blood products and their equitable access at national and global levels will thus require further scrutiny and examination.

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LIST OF ABBREVIATIONS AND ACRONYMS

Ab	antibodies
Ag	antigens
EQAS	External Quality Assessment Scheme
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
IQR	interquartile range
IVIg	intravenous immunoglobulin
NAT	nucleic acid amplification testing
NBTS	national blood transfusion service
PDMP	plasma-derived medicinal product
RNA	ribonucleic acid
SARA	Service Availability and Readiness Assessment
TTI	transfusion-transmissible infection
VNRD	voluntary non-remunerated donation
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

The Global Database on Blood Safety (GDBS) aims to provide an overview of how countries and blood transfusion services are meeting expectations of blood supply, safety and use. A safe, equitable, sustainable and secure supply of blood for transfusion remains a key need for all countries. Transfusion of blood, when available, is lifesaving supportive care, for example in patients presenting with major bleeding due to trauma or postpartum, children suffering from severe anaemia due to malaria and malnutrition, people with inherited disorders of haemoglobin, or people with bone marrow failure. However, blood for transfusion is also a potentially scarce resource with significant risks as a biological material, including transfusion-transmitted infections.

The GDBS data provide a framework for exploring the balance between needs, availability, risks and use of blood for transfusion. It addresses some of the challenges of variable global access to a safe and secure supply of blood. Alongside data on blood collection, this report also presents information on the processes for establishing governance and appropriate organization for national blood supply and transfusion systems; haemovigilance to monitor risks to donors and patients; and appropriate managerial mechanisms, such as hospital transfusion committees, in hospitals.

As before, the GDBS requests and analyses data from ministries of health of World Health Organization (WHO) Member States. The terminologies used in the survey questionnaire were given standardized definitions to promote consistent reporting. Where possible, efforts were made to validate the data reported to WHO with WHO regional and country offices. Countries were contacted for clarification or correction when discrepancies or unusual patterns were observed. Efforts were also made to validate GDBS data by comparing them with data available from other published sources. However, not all the data provided by all countries could be systematically verified. In particular, answers to the questions on the existence of policies, programmes or mechanisms could be affected by individual interpretation of the questions asked.

The findings allow countries to understand how their own responses and targets apply alongside other countries. Core findings in the report inform the implementing of those measures of blood safety, availability and accessibility that should be within the remit of governments and ministries of health. The results should support changes required to achieve safe blood supply through various levers, such as regulation, oversight, citizen and community engagement, and adequate funding. The report also provides an opportunity for WHO and other organizations to suggest appropriate guidance.

Prior GDBS reports have highlighted marked disparities in measures of security of supply of blood between countries, including differences between resource-rich and resource-poor country settings. Understanding the requirements for a safe and sufficient blood supply is challenging. Although overall clinical rates of blood use vary considerably between countries – whether high, medium or low resource – optimal rates for a specific country are usually not known. In some countries where there are limited supplies and concerns about blood shortages, the GDBS report provides key comparative data to assist ministries of health in planning and goal setting to enable a move towards more equitable access to a safe and sufficient blood supply.

Supply and availability of blood is linked with safe and appropriate informed use at the patient level. These issues of use and transfusion risks are addressed as secondary objectives of the GDBS report in selected chapters covering blood safety, for example through haemovigilance systems, or the establishment of hospital transfusion committees to oversee transfusion activities at hospitals. Ensuring appropriate use of blood requires education and engagement with the community of health care professionals and the medical profession.

It is important to recognize that we now have more understanding of the evidence base for appropriate blood transfusion through the conduct of high-quality research, including randomized trials. A recent Cochrane review of red cell transfusion thresholds identified 48 randomized trials to inform optimal transfusion practice (*1*). Clinicians should ensure that blood transfusion is limited to situations or cases where no appropriate transfusion alternatives are available and there is supporting evidence that the benefit of blood transfusion outweighs the risks. Patient blood management describes an evidence-informed policy for providing the best transfusion and clinical care, including the judicious use of blood components and full consideration of alternatives such as tranexamic acid (*2*).

Potential limitations in the GDSB report are acknowledged, including varying amounts of missing data and the challenges of data verification. To an extent, these problems can be assessed by longitudinal changes in reports over time, and this new report is accompanied by an additional trend analysis for a number of measures. A further limitation is that the scope of the report is restricted to whole blood or blood components, while increasing emphasis in transfusion medicine is now being placed on alternatives to transfusion, such as appropriate use of iron or tranexamic acid, typically as part of patient blood management strategies. The way such strategies are applied in all national settings will need to be addressed in later reports. A further gap highlighted by the WHO report is a lack of good descriptive data on blood use across a broad range of transfusion-giving hospitals in all countries, and this will be proposed as an objective for WHO-sponsored activities over the next few years.

CHAPTER 2

ORGANIZATION AND MANAGEMENT OF NATIONAL BLOOD TRANSFUSION SERVICES

2.1 Policy and governance

This report is based on data that were reported by 171 of 194 Member States to the WHO GDBS. Data included for analysis were primarily for 2018, as reported by 108 countries. To give a more complete overview of the global situation, data for 2017 from 40 countries, and for 2015 from 23 countries, were used where 2018 data were not available.[1] These 171 countries account for a total population of 7.2 billion, representing 98.03% of the global population. Annex 1 presents a list of the 171 responding countries to GDBS 2018 (African Region 43 of 47, Region of the Americas 33 of 35, South-East Asia Region 10 of 11, European Region 42 of 53, Eastern Mediterranean Region 18 of 21, and Western Pacific Region 25 of 27).

A total of 136 countries (80%) had a unit within the ministry of health (or other government department) with responsibility for governing all activities related to provision and transfusion of blood and blood products (Table 1). In addition, 125 countries (73%) had a national blood policy, and 101 countries (59%) had a multiyear national strategic plan for blood safety. In 113 countries (66%), there was specific legislation or other legal instruments covering the safety and quality of blood and blood products for transfusion. In 100 countries (58%), a national blood committee (or equivalent) assisted the ministry of health in formulating policy and plans, setting standards and advising on key issues. In 93 countries (54%), an annual report of activities of the national blood programmes was published.

Table 1. Policy and governance results: responses by countries, 2018

Provision	Yes	No	No information
Unit within the ministry of health responsible for blood transfusion	136	28	7
National blood policy	125	39	7
Multiyear strategic plan for blood safety	101	57	13
Specific legislation covering safety and quality of blood and blood products	113	45	13
National blood committee	100	62	9
Published annual report	93	58	20

[1] In the subsequent sections of this report, for the purposes of simplicity, "GDBS 2018 data" is used to describe the data from all 171 countries surveyed.

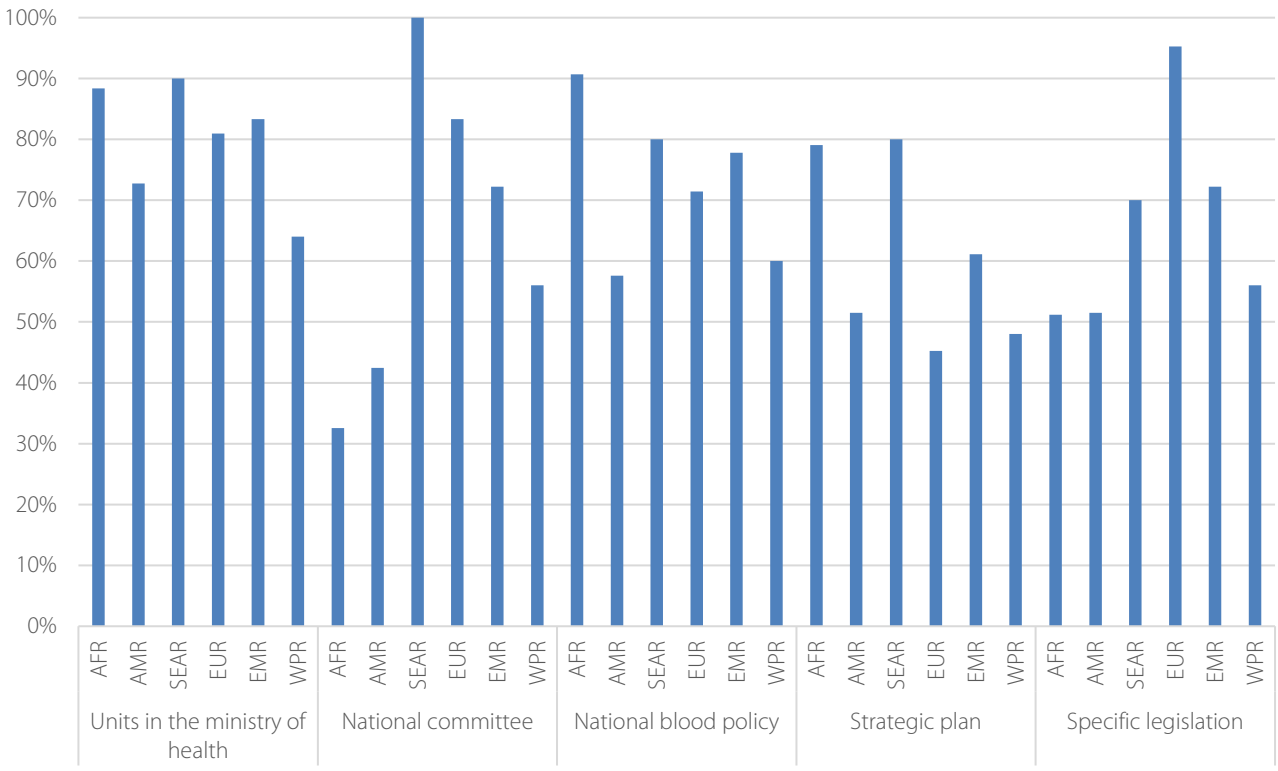
A number of responding countries did not provide answers to these fundamental policy questions. Countries that provided a "no" answer may be those with effective blood transfusion services but with different policy and governance arrangements in place, or those where there was a lack of effective policy and governance, which could have an adverse impact on transfusion capacity and safety. It is important to distinguish between these two scenarios. Follow-up of these responses may be appropriate to determine if questions or definitions should be modified in future questionnaires to ensure that all effective policy and governance models are accommodated and reported accordingly.

The lack of specific legislation covering the safety and quality of blood and blood products for transfusion in many (34%) countries is of concern. Registration, licensing, regulation and inspection of blood services, all of which are essential to ensuring safety, quality and availability of blood, require an appropriate legislative framework to operate effectively.

Across the WHO regions (ranked by percentage), 19 (58%) countries in the Americas, 15 (60%) in the Western Pacific, 30 (71%) in Europe, 14 (78%) in the Eastern Mediterranean, eight (80%) in South-East Asia, and 39 (91%) in Africa reported having a national blood policy. Similarly, 19 (45%) countries in Europe, 12 (48%) in the Western Pacific, 17 (52%) in the Americas, 11 (61%) in the Eastern Mediterranean, 34 (79%) in Africa, and eight (80%) in South-East Asia reported having a multiyear strategic plan for blood safety in 2018 (Figure 1).

A total of 113 countries (66%) 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), 22 (51%) countries in Africa, 17 (52%) in the Americas, 14 (56%) in the Western Pacific, seven (70%) in South-East Asia, 13 (72%) in the Eastern Mediterranean, and 40 (95%) in Europe reported having such legislation (Figure 1).

Figure 1. Governance mechanisms for blood transfusion by WHO region, 2018



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

2.2 Finance

A total of 116 countries (68%) reported that funding of transfusion services is provided by government budget or cost recovery. Table 2 shows more details of the funding models.

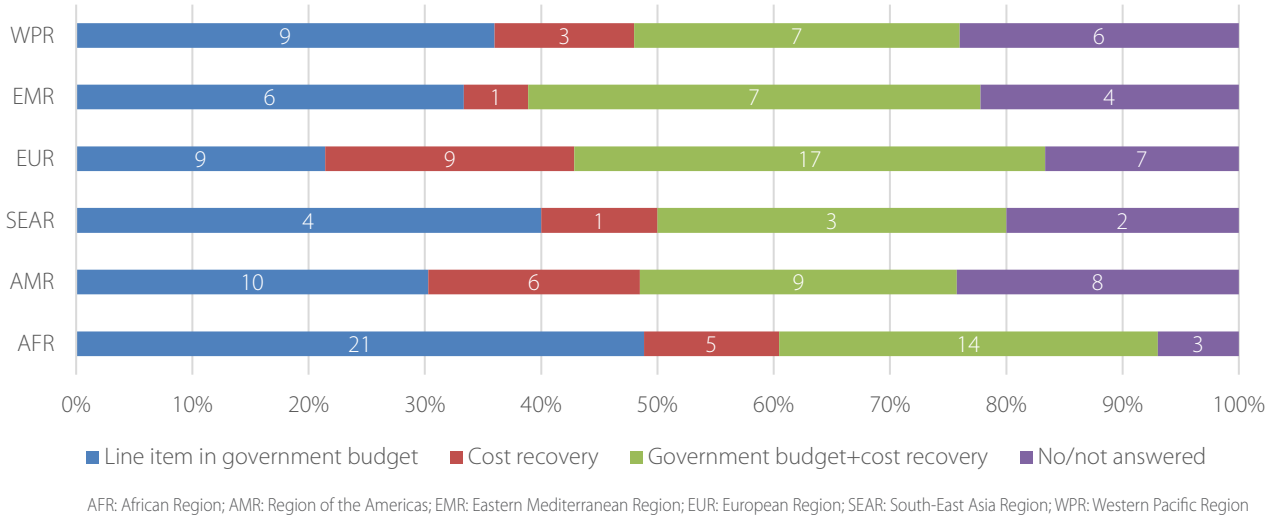
Table 2. Funding models for responding countries

Funding models	Number	%
Government budget + cost recovery system	57	33.3
Government budget has a specific line item for blood transfusion services	59	34.5
Cost recovery system for blood transfusion services	25	14.6
None of these mechanisms	26	15.2
No response for both questions	4	2.4

These figures show little change from the last report, and it is of concern that 26 countries (15%) have neither a government budget nor a cost recovery system in place for the blood transfusion service. Also of concern is the number of countries that did not provide a response to these questions.

Across WHO regions, 62% of countries (26 of 42) in Europe reported financing the blood services through a cost recovery scheme, either partially or entirely. In Africa, government budget allocations were the main mechanism for blood service financing: 49% of countries (21 of 43) financed the blood services solely through government budget allocation (Figure 2). Cost recovery reported might either be from the patient or from the hospital (that is, at no charge to the patient).

Figure 2. Systems of blood service financing



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Fifty-six countries reported receiving financial support from international agencies or other organizations for blood services. Seventy-four countries reported receiving technical support from international agencies or other organizations for blood services. Further information is provided in Table 3.

Table 3. International financial and technical support

Financial support from international agencies or other organizations for blood services	Technical support from international agencies or other organizations for blood services	Number
Yes	Yes	44
Yes	No	12
No	Yes	30

Countries receiving financial support included 25 (accounting for 58% of the reporting countries) in Africa, five (15%) in the Americas, six (60%) in South-East Asia, three (7%) in Europe, four (22%) in the Eastern Mediterranean, and five (20%) in the Western Pacific.

Countries receiving technical support included 19 (44%) countries in Africa, 19 (58%) in the Americas, seven (70%) in South-East Asia, seven (17%) in Europe, five (28%) in the Eastern Mediterranean, and six (24%) in the Western Pacific.

These figures indicate that, in comparison to 2013 data, international support and cooperation for blood safety, in particular for countries in Africa, has been reduced. International support and cooperation had played important roles in developing effective national blood systems and ensuring blood safety (3, 4). The trend of decreasing international support since the last report is of concern, as many resource-limited countries would still need such support.

Eighty-four countries provided data on the total funding for the operation of the blood centres covered by the report. 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 4). 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.

Table 4. Total funding per collection by World Bank economic group, 2018

Income group	Total funding per collection (US$) (median, interquartile range)
High (n=24)	296 (172–382)
Upper middle (n=18)	102 (54–206)
Lower middle (n=21)	31 (21–81)
Low (n=21)	20 (12–41)

2.3 Inspection and licensing

A total of 101 countries (59%) had a system of regular inspection of blood transfusion services by the national regulatory agency or another entity. Similarly, 101 countries (59%) had a system of licensing of the national blood transfusion service (NBTS) or other blood transfusion services by the national regulatory agency or another entity. Fifty-seven countries (33%) had an accreditation system for NBTS or other blood transfusion services (Table 5).

Table 5. Inspection and licensing results for responding countries

	Yes	No	No information
Is there a system of regular inspection(s) of the NBTS/blood transfusion service(s) by the national regulatory agency or another entity?	101	61	9
Is there a system of licensing of the NBTS/blood transfusion service(s) by the national regulatory agency or another entity?	101	63	7
Are NBTS/blood transfusion service(s) accredited?	57	105	9

Effective governance depends upon mechanisms to identify and control the number of organizations permitted to act as blood transfusion services, and appropriate oversight of these organizations by an independent body reporting to the ministry of health. The WHO aide-memoire for ministries of health on "Developing a national blood system" states: "Regulatory mechanisms should be established for the control, inspection and licensing of blood transfusion services to enforce blood product standards and monitor product safety" (5). The number of countries that lack systems to license and inspect blood transfusion services continues to be a serious concern.

Across the WHO regions (ranked by percentage), a system of inspection was reported in 16 (37%) countries in Africa, 12 (48%) in the Western Pacific, 18 (55%) in the Americas, 12 (67%) in the Eastern Mediterranean, seven (70%) in South-East Asia, and 36 (86%) in Europe.

A system of licensing was reported in 17 (40%) countries in Africa, four (40%) in South-East Asia, 10 (40%) in the Western Pacific, nine (50%) in the Eastern Mediterranean, 25 (76%) in the Americas, and 36 (86%) in Europe.

Accreditation of blood transfusion services was reported in six (14%) countries in Africa, eight (24%) in the Americas, three (30%) in South-East Asia, nine (36%) in the Western Pacific, eight (44%) in the Eastern Mediterranean, and 23 (55%) in Europe.

CHAPTER 3

COLLECTION OF BLOOD AND BLOOD COMPONENTS

3.1 Global overview of blood collection

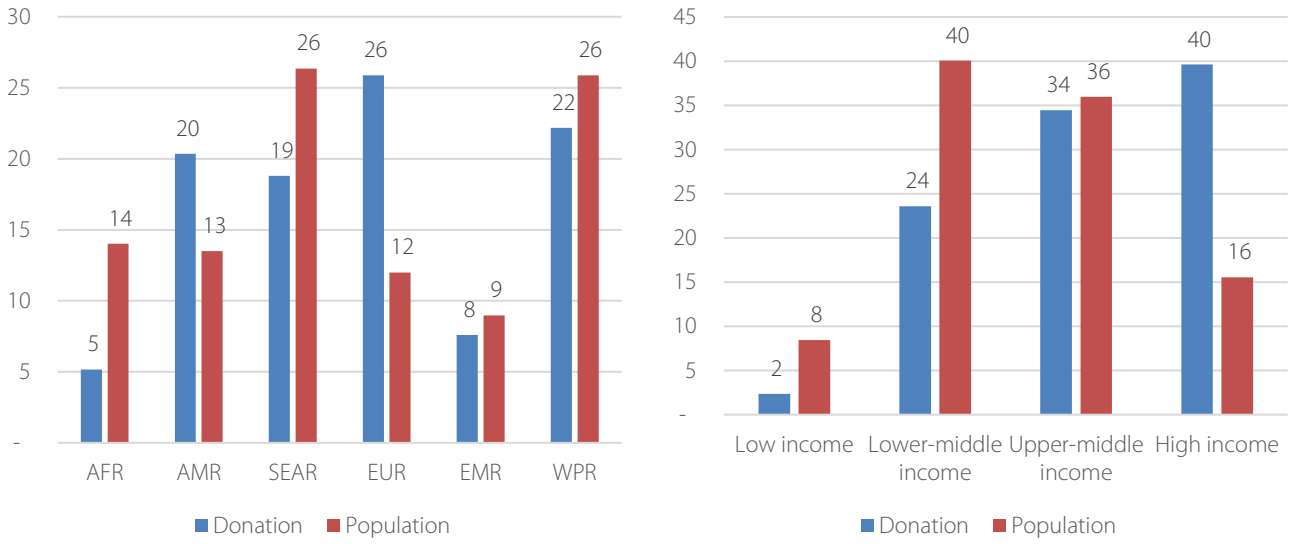
It is estimated that 118.5 million blood donations were made in the 171 countries during the reporting period. Of these, 106.1 million were whole blood donations, and 12.4 million were apheresis donations (Table 6). These donations were collected from all types of blood donors: voluntary non-remunerated, family or replacement, and paid. This estimation has taken into consideration the partial data provided by a few countries. Annex 1 provides a note on how the estimation of global collection was performed.

Table 6. Estimated blood donations by WHO region, 2018

Region	Estimated whole blood donations (millions)	Estimated apheresis donations (millions)	Total (millions)	% of global population
Africa	6.1	0.03	6.1	14%
Americas	21.6	2.5	24.1	13%
South-East Asia	21.6	0.7	22.3	26%
Europe	24.8	5.9	30.7	12%
Eastern Mediterranean	8.8	0.2	9.0	9%
Western Pacific	23.2	3.1	26.3	26%
Global (rounded totals)	106.1	12.4	118.5	100%

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, 43 countries in the WHO African Region collected a total of about 6.1 million blood donations; these accounted for only about 5% of global donations, although these countries are home to around 14% of the global population. In the European Region, the number of reported donations represented 26% of the global total, though the region is inhabited by only 12% of the global population. Similarly, countries in the high-income group collected 40% of the global donations, though their populations only account for 16% of the global population. Countries in the low-income and lower-middle-income groups collected 2% and 24% of the global donations, respectively, though their populations represent 8% and 40% of the global population, respectively (Figure 3).

Figure 3. Distribution (percentage) of population and blood donations by WHO region and World Bank income group, 2018

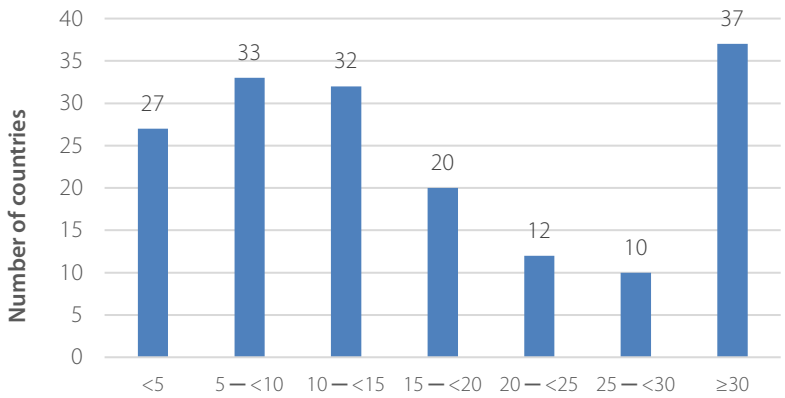


AFR: African Region; AMR: Region of the Americas; EMR: Eastern Mediterranean Region; EUR: European Region; SEAR: South-East Asia Region; WPR: Western Pacific Region

There were wide variations in blood donation rates among countries, ranging from 0.6 to 53.0 per 1000 population. The whole blood donation rate (median) was 31.5 donations per 1000 population per year (range 10.9–53.0) in high-income countries, 16.4 (range 4.6–47.6) in upper-middle-income countries, 6.6 (range 1.9–25.0) in lower-middle-income countries, and 5.0 (range 0.6–10.9) in low-income countries. Across WHO regions, the donation rates ranged as follows: 0.6 to 35.3 (median 5.4) in Africa,[2] 2.7 to 36.8 (median 14.6) in the Americas, 1.9 to 25.3 (median 10.6) in South-East Asia, 4.4 to 53.0 (median 32.1) in Europe, 0.6 to 25.3 (median 14.3) in the Eastern Mediterranean, and 3.4 to 47.6 (median 16.1) in the Western Pacific.

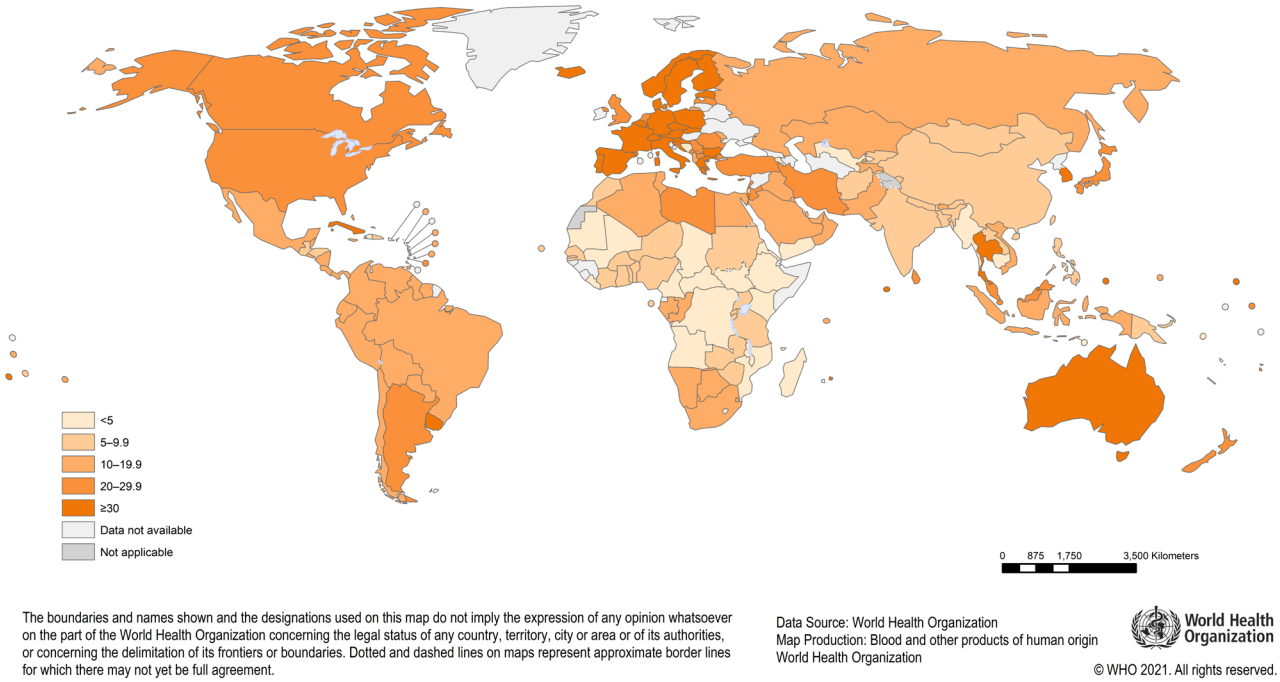
Sixty countries reported collecting less than 10 whole blood donations per 1000 population per year in 2018 (Figure 4). Of these, 34 countries are in the WHO African Region, four in the Region of the Americas, five in the South-East Asia Region, four in the European Region, four in the Eastern Mediterranean Region, and nine in the Western Pacific Region (Figure 5). Given that seven countries that reported collecting less than 10 whole blood donations per 1000 population in 2013 did not respond to GDBS 2018, these figures have changed little since the last report.

Figure 4. Distribution of countries by number of whole blood donations per 1000 population, 2018



[2] Mauritius is an outlier in the African Region, with a donation rate of 35.3 per 1000 population.

Figure 5. Whole blood donations per 1000 population, 2018

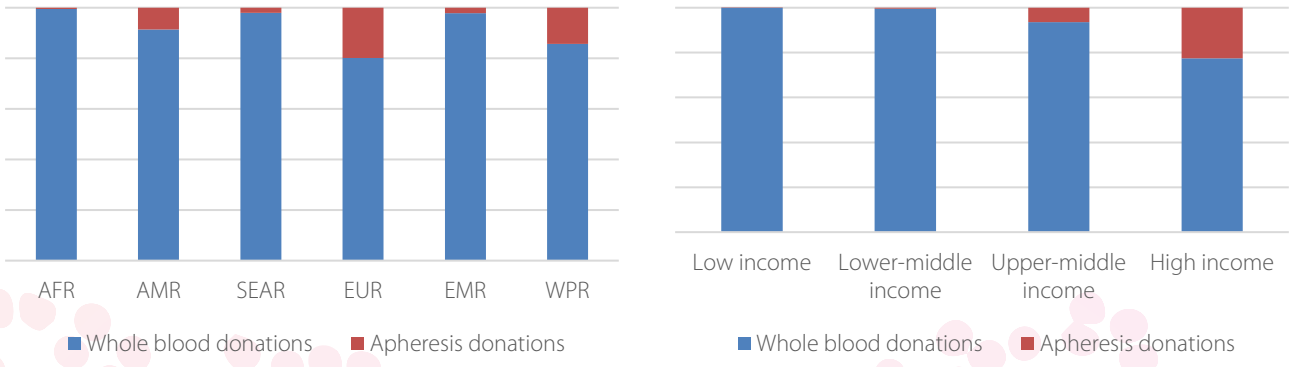


3.2 Whole blood collection and apheresis collection

From section 3.2 on, in analysing the types of blood donations, processing, testing, discarding, and clinical use, the data as reported by countries, including partial data reported by countries (see Annex 1 for explanatory note), rather than the estimated number based on the data coverage percentage, were directly used for aggregation and analysis. Where appropriate, analysis by WHO region and World Bank income group was also conducted.

Ninety of the 171 responding countries reported collecting blood both as whole blood donations and through apheresis procedures. Of the 107 million total donations reported to the GDBS worldwide in 2018, 89% (95.2 million) were donated as whole blood, and 11% (11.9 million) were collected through apheresis procedures. In high-income countries, 22.6% of all donations were collected through apheresis, compared to 6.5% in upper-middle-income countries, and 0.5% 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 20.0%, 14.4%, and 8.7% (respectively) of the total donations were collected through apheresis procedures (Figure 6).

Figure 6. Method of collection of blood donations by WHO region and World Bank income group, 2018



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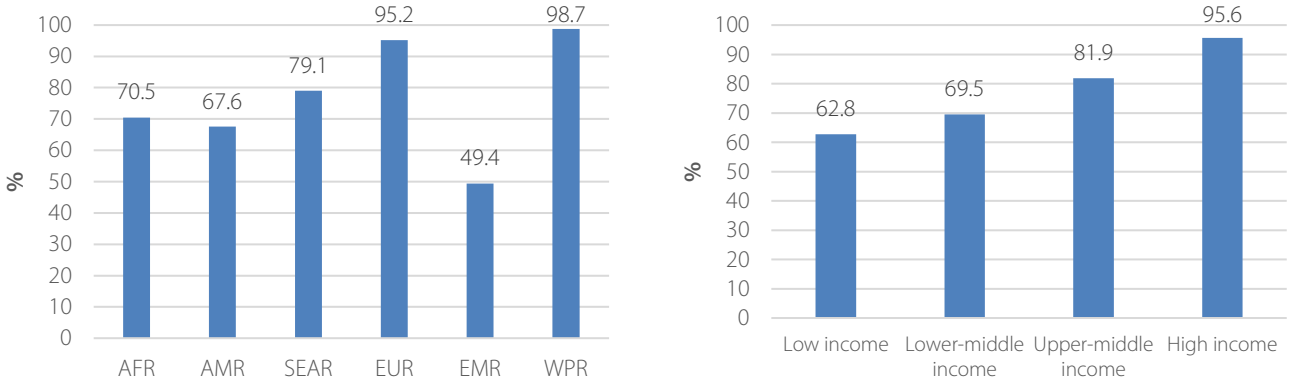
3.3 Types of blood donations

Overall, of the total 95.2 million whole blood donations reported, 78.8 million (82.8%) were reported as voluntary non-remunerated donations, 15.1 million (15.9%) as family or replacement donations, and 164 000 (0.2%) as paid blood donations. The categories of the other 1.2% (1 167 800) of donations were unknown.

In 2018, the proportion of voluntary non-remunerated whole blood donations in high-income, upper-middle-income, lower-middle-income, and low-income groups were 95.6%, 81.9%, 69.5%, and 62.8%, respectively. Higher-income groups in general had a higher proportion of blood collected from voluntary non-remunerated blood donors in surveyed countries (Figure 7).

When analysed by WHO region, the proportion of voluntary non-remunerated whole blood donations varied from 49.4% in the Eastern Mediterranean Region to as high as 95.2% in the European Region and 98.7% in the Western Pacific Region. The proportion of voluntary non-remunerated whole blood donations in the African Region, Region of the Americas, and South-East Asia Region was 70.5%, 67.6%, and 79.1%, respectively (Figure 7).

Figure 7. Proportions of voluntary non-remunerated whole blood donations by WHO region and World Bank income group, 2018



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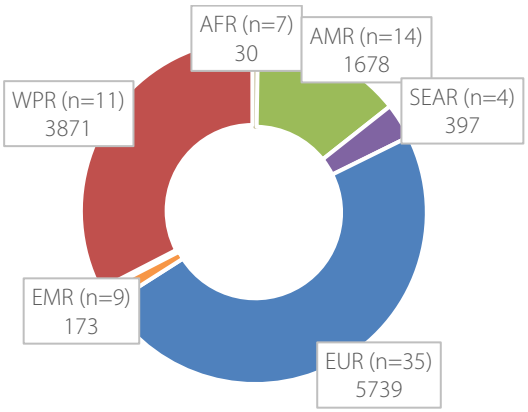
Globally, 88.7% (10 542 000) of 11.9 million apheresis donations for clinical transfusion were given by voluntary non-remunerated donors, 0.6% (70 590) by family or replacement donors, and 1.0% (123 400) by paid donors. It is possible, however, that the data for some European countries may reflect the inclusion of some plasma donations for fractionation. The categories of the other 9.7% (1 151 300) of donations were unknown. In the European Region, 81.1% of the 5 739 200 apheresis donations were from voluntary non-remunerated donors, 0.3% from family or replacement donors, 1.5% from paid donors, and 17.1% with the type of donations unknown. In the Western Pacific Region, the majority of the collections reported were from voluntary non-remunerated donors, totalling 3 822 430 (98.7%). A total of 1 530 400 (91.2%) apheresis donations were collected from voluntary non-remunerated donors in the Region of the Americas, 0.4% from family or replacement donors, and 8.4% with the type of donations unknown. In the Eastern Mediterranean Region, 68.0% of the total 172 700 apheresis donations were from voluntary non-remunerated blood donors, 18.7% from family or replacement donors, 1.2% from paid donors, and 12.1% with the type of donations unknown (Figure 8).

Figure 8. Total number of apheresis donations (thousands) and distribution of donation types by WHO region



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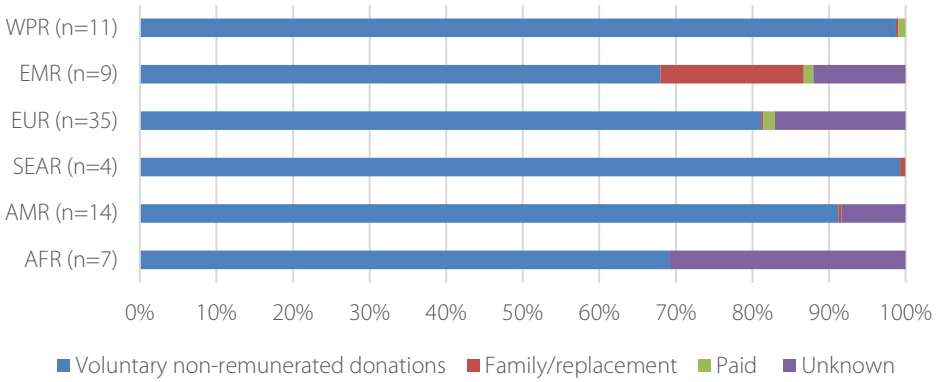
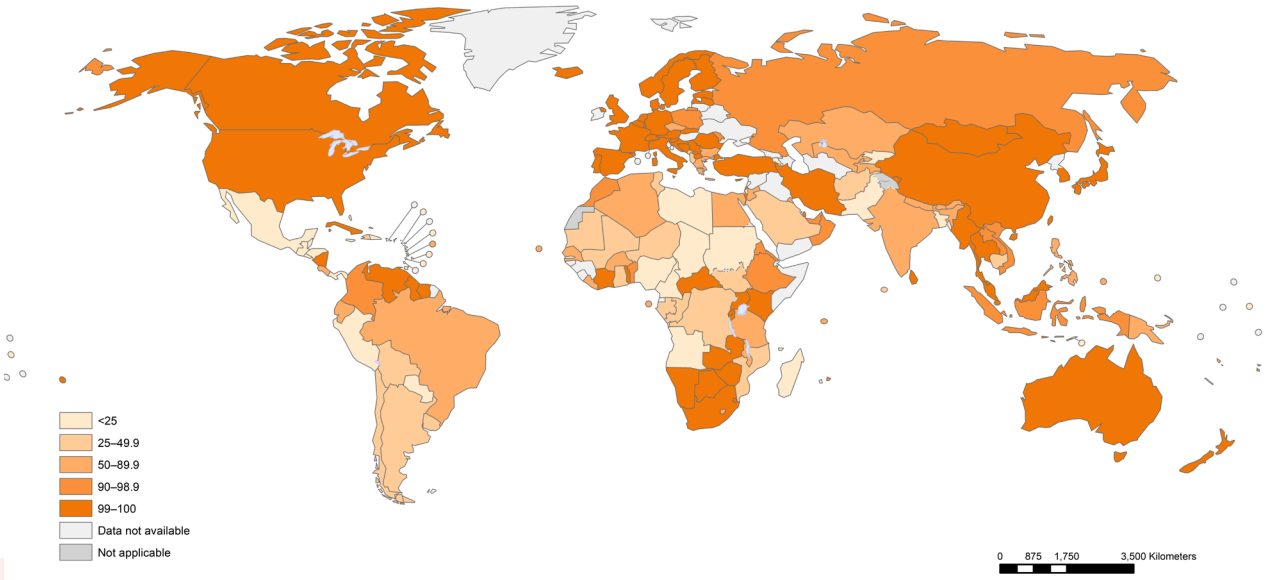


Figure 9 shows the geographical distribution by country of the proportion of voluntary non-remunerated blood donations (both whole blood and apheresis donations).

Figure 9. Proportion of voluntary non-remunerated donations (whole blood and apheresis donations combined) by country, 2018



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.

Data Source: World Health Organization
Map Production: Blood and other products of human origin
World Health Organization

World Health Organization

Overall, 79 countries collected more than 90% of their blood supply from voluntary non-remunerated blood donations: 31 in the European Region, 17 in the African Region, 13 in the Western Pacific Region, eight in the Region of the Americas, six in the Eastern Mediterranean Region, and four in the South-East Asia Region. Sixty-four countries reported collecting 100% or over 99% of their blood supply from voluntary non-remunerated donations. Fifty-four countries (16 in Africa, 21 in the Americas, three in South-East Asia, four in Europe, six in the Eastern Mediterranean, and four in the Western Pacific) remained considerably dependent on family or replacement and paid blood donors, with these donations accounting for more than 50% of their blood supplies in 2018.

3.4 Trends in whole blood collections in the world, 2008–2018

To assess the global trends in whole blood collections over the 10-year period, whole blood collection data from a total of 119 countries (Africa 35, Americas 27, South-East Asia six, Europe 27, Eastern Mediterranean 10, Western Pacific 14), which were either reported to the GDBS by the countries for the years 2008, 2010, 2012, 2014, 2016 and 2018 or estimated when data for specific years were missing using the data for the years immediately before or after the year with missing data,[3] were compiled and analysed.

Overall, an increase of 10.7 million blood donations from voluntary non-remunerated donors between 2008 and 2018 was observed in the 119 countries for which data for both years are available. An increase of 12.3 million total collections from all types of blood donors was observed between 2008 and 2018 (Table 7).
By WHO region, except for Europe, in which a marginal increase was observed from 2008 to 2012 and then a marginal decrease from 2012 to 2018, all WHO regions registered trends of increases in total whole blood collections from all types of blood donors and donations collected from voluntary non-remunerated donors (Figure 10). Data from countries in North America have been excluded from the analysis in the Region of the Americas, so the results only reflect the blood collection trends in 27 Latin American and Caribbean countries.

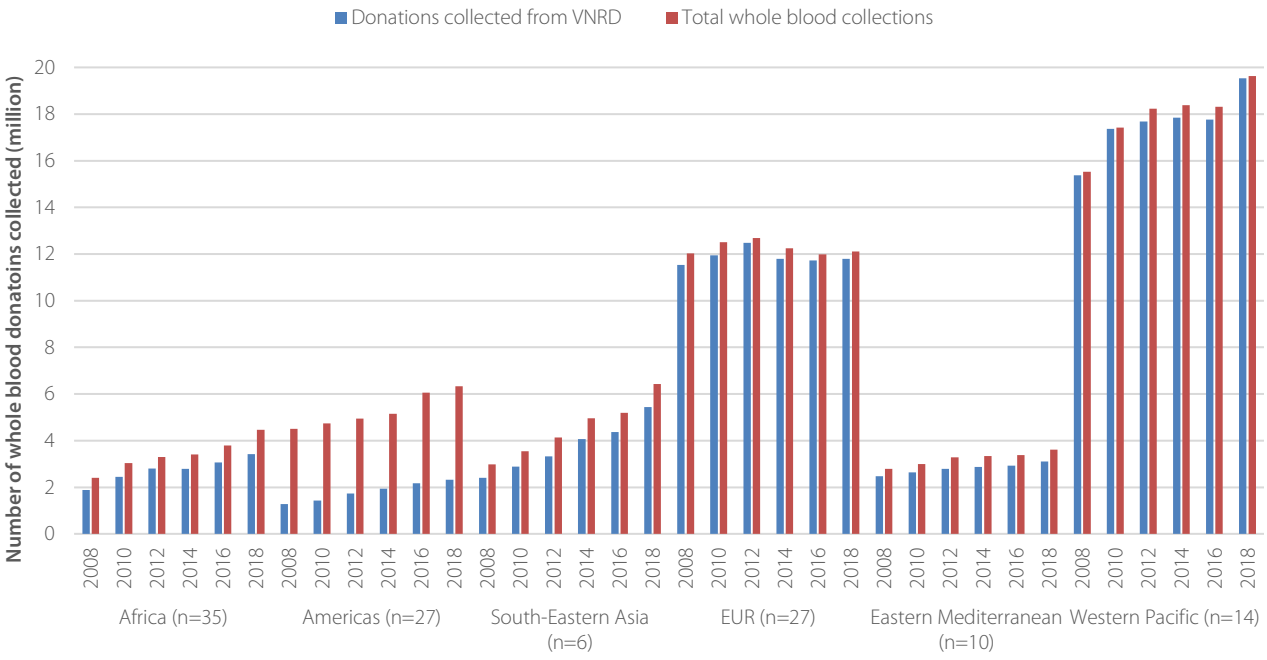
[3] For the method to assign values for missing data, please see the explanatory note in Annex 1.

Table 7. Voluntary non-remunerated donation (VNRD) and total whole blood collection in 119 countries (millions) by WHO region, 2008–2018

Region	Donation type	2008	2010	2012	2014	2016	2018
Africa (n=35)	VNRD	1.89	2.45	2.80	2.79	3.07	3.42
	Total donations	2.41	3.03	3.29	3.41	3.79	4.46
Americas (n=27)[a]	VNRD	1.28	1.43	1.73	1.94	2.17	2.32
	Total donations	4.51	4.74	4.95	5.15	6.06	6.33
South-East Asia (n=6)[b]	VNRD	2.40	2.88	3.33	4.06	4.37	5.45
	Total donations	2.98	3.55	4.13	4.95	5.19	6.43
Europe (n=27)	VNRD	11.53	11.95	12.48	11.79	11.73	11.79
	Total donations	12.03	12.51	12.69	12.24	11.99	12.10
Eastern Mediterranean (n=10)[c]	VNRD	2.48	2.64	2.80	2.88	2.93	3.11
	Total donations	2.79	3.00	3.28	3.34	3.38	3.61
Western Pacific (n=14)	VNRD	15.38	17.37	17.68	17.84	17.76	19.53
	Total donations	15.52	17.42	18.23	18.38	18.32	19.63
Total (n=119)	VNRD	34.96	38.73	40.82	41.30	42.03	45.62
	Total donations	40.24	44.25	46.57	47.48	48.73	52.56

Notes:
[a] The 27 countries in the Region of the Americas did not include Canada and the United States of America.
[b] The six countries included in the South-East Asia Region did not included India, which reports collection of a very large number of blood donations every year.
[c] Ten countries (of the 18 countries responding to GDBS 2018) in the Eastern Mediterranean Region are countries with a higher proportion of blood donations collected from voluntary non-remunerated donors.

Figure 10. Total whole blood collections and voluntary non-remunerated donations (millions) by WHO region, 2008–2018



In addition, average annual rates of change in total whole blood collections and voluntary non-remunerated donations between 2008 and 2018 were calculated and trends for individual countries were assessed (Table 8).

The median annual rate of change in total whole blood collections in the African Region was 7%, ranging from –4% to 60%, with the lower and upper quartiles at 5% and 15%. This means that in the majority (75%) of countries in the Region, total whole blood collections increased at annual rates of 5% to 60%.

Similarly, the majority of countries in the Region of the Americas reported that total whole blood collections increased at annual rates of 2% to 15%. The majority of the countries in the Eastern Mediterranean Region reported that total whole blood collections increased at annual rates of 2% to 30%.

In the European Region, half of the countries reported a decrease in total whole collections between 2008 and 2018, with annual rates of decrease at –7% to –1%. In contrast, 10 countries reported an increase in total whole blood collections and voluntary non-remunerated donations: Albania, Bulgaria, Croatia, Kyrgyzstan, Montenegro, North Macedonia, Poland, Romania, Slovakia and Tajikistan.

In the South-East Asia Region, an increase in total whole blood collections and voluntary non-remunerated donations was reported by all six countries that were included for analysis.

In the Western Pacific Region, 11 of 14 countries reported that total whole blood collections increased between 2008 and 2018 at annual rates ranging from 1% to 14%. In contrast, three countries in the Region reported a decrease.

Sixty per cent (21 of 35) of countries in the African Region, 82% (23 of 28) in the Region of the Americas, and 83% (five of six) in the South-East Asia Region reported that voluntary non-remunerated donations increased at an annual rate greater than 10%, suggesting that the increase in total whole blood collections in the regions were mainly driven by an increase in the number of voluntary non-remunerated donations. However, some of the increases in rates reported could be due to zero or small baseline numbers reported in 2008, so any increase in absolute numbers would lead to the calculation of a high rate of increase.

Table 8. Annual rate of change of whole blood collections (total and voluntary non-remunerated donation, VNRD) by WHO region, 2008–2018 (median and range, %)

Region	Type	Median	Range		Interquartile range	
			Min.	Max.	Lower	Upper
Africa (n=35)	VNRD	16	1	251	8	42
	Total	7	–4	60	5	15
Americas (n=27)	VNRD	52	–2	594	15	125
	Total	3	–2	15	2	6
South-East Asia (n=6)	VNRD	15	6	71	12	19
	Total	11	2	14	6	13
Europe (n=27)	VNRD	0.3	–4	525	–2	15
	Total	–1	–7	17	–2	3
Eastern Mediterranean (n= 10)	VNRD	9	2	37	5	15
	Total	5	–3	30	2	7
Western Pacific (n=14)	VNRD	7	–3	72	3	16
	Total	5	–3	14	2	7

Note: Formula to calculate the average annual change rate (%) is: [(donation number in 2018 – donation number in 2008)/(donation number in 2008) x 100%]/10.

3.5 Blood donor profile

3.5.1 Donor sex and age profile

Data from 113 countries on the sex profile of blood donors show that, overall, 33% of blood donations were given by female donors; of these, 15 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 9). However, substantial variations exist among countries within the region. For example, of 14 countries in the Eastern Mediterranean reporting data on the sex distribution of blood donations, 10 reported that less than 10% of donations were given by female donors. The other four countries – United Arab Emirates, Egypt, Tunisia and Oman – reported percentages of 31%, 19%, 16% and 10%, respectively.

Table 9. Blood donations from female donors by WHO region (median and range, %)

Region	Median	Range
Africa (n=26)	22	8–54
Americas (n=20)	40	23–63
South-East Asia (n=7)	27	3–55
Europe (n=26)	38	9–57
Eastern Mediterranean (n= 14)	6	0.4–31
Western Pacific (n=20)	30	8–59

A total of 81 countries (Africa 21, Americas 16, South-East Asia four, Europe 16, Eastern Mediterranean 11, Western Pacific 13) reported data on the number of donations given by donors of different age groups (Figure 11). Globally, 45% of donations were given by donors aged 25 to 44 years. Donors of the age groups 45 to 64 years and 18 to 24 years contributed 24% and 25% of the total donations, respectively. Of the total donations, 4% 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: 38% of blood donations were given by donors aged 24 years or younger in low-income countries, 47% in lower-middle-income countries, 28% in upper-middle-income countries, and 25% in high-income countries (Figure 12). 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.

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

Figure 11. Contributions to donations by donors of different age groups in selected countries, 2018

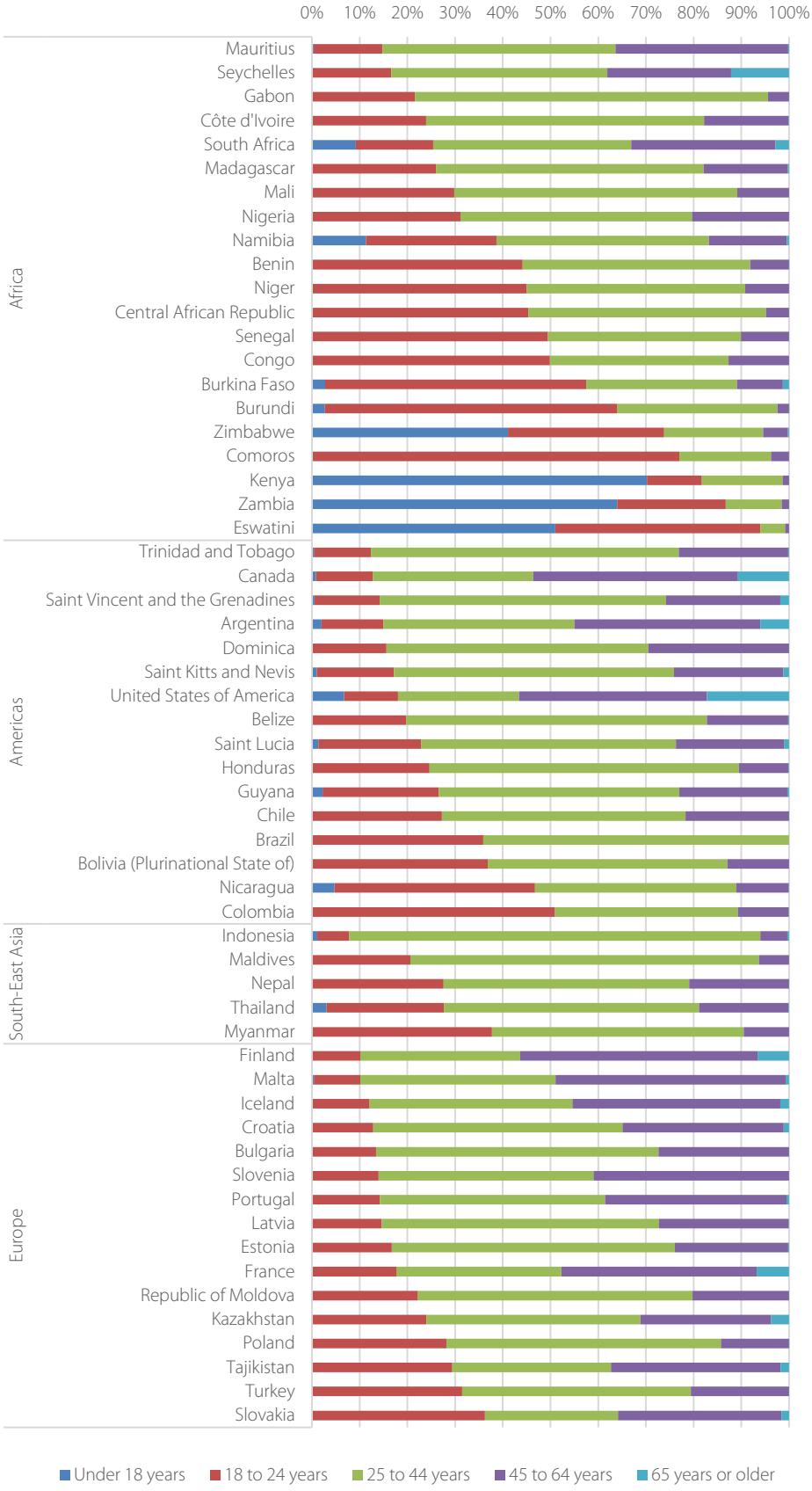


Figure 11. Contributions to donations by donors of different age groups in selected countries, 2018 (cont.)

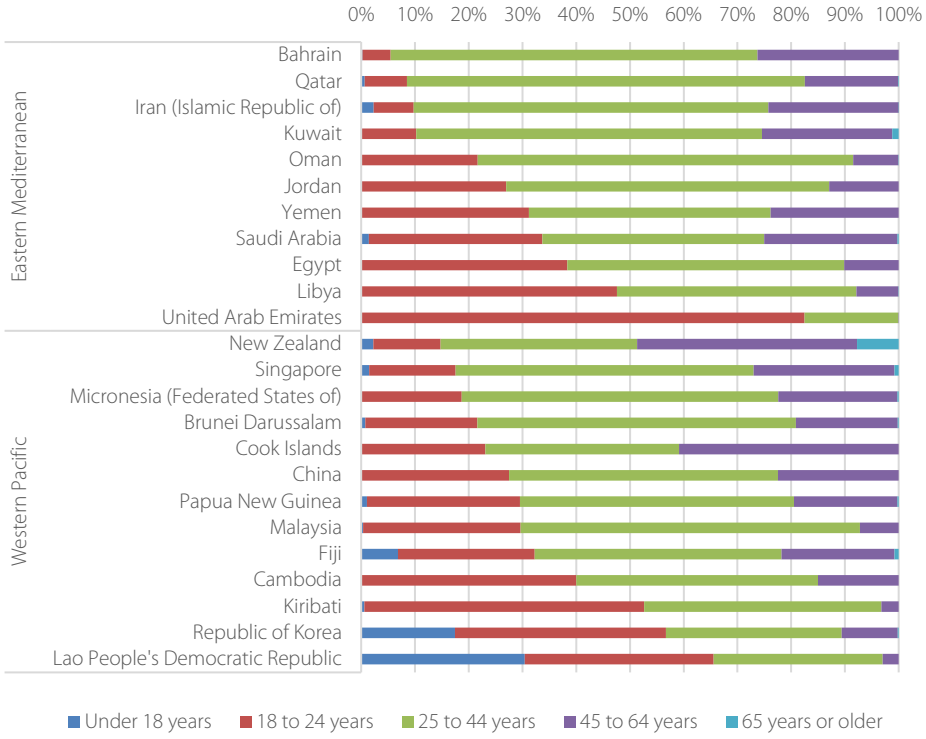
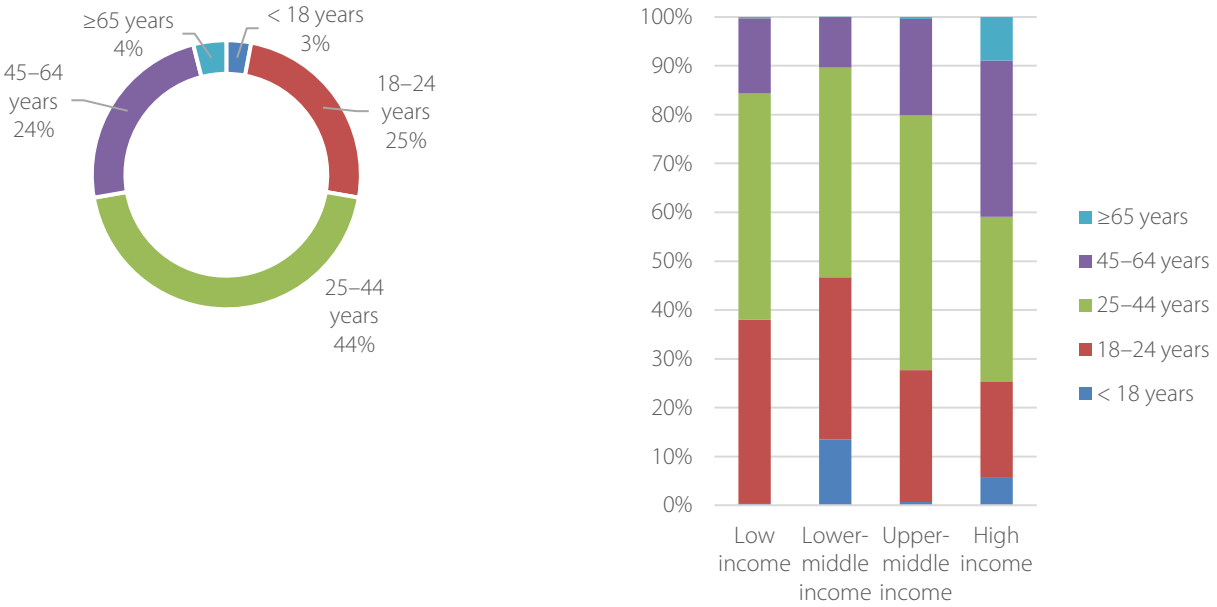


Figure 12. Contribution to donations by donors of different age groups and by World Bank income group, 2018



3.5.2 Repeat donors and first-time donors

A total of 91 countries (Africa seven, Americas 16, South-East Asia six, Europe 35, Eastern Mediterranean 9, Western Pacific 18) 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 59%). Table 10 shows the proportions of donations given by repeat voluntary non-remunerated blood donors, by WHO region.

Table 10. Donations given by repeat voluntary non-remunerated blood donors by WHO region (median and range, %)

Region	Median	Range	Interquartile range
Africa (n=7)	38	30–76	–
Americas (n=16)	20	0.3–87	16–54
South-East Asia (n=6)	57	5–86	31–63
Europe (n=35)	90	0.1–100	68–93
Eastern Mediterranean (n=9)	37	1–88	18–45
Western Pacific (n=18)	56	2–96	32–83

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 2018 were provided by 57 countries – one low-income country, nine lower-middle-income countries, 13 upper-middle-income countries, and 34 high-income countries – accounting for 67.6 million whole blood donations. Overall, each donor donated 1.48 (median) whole blood donations on average in 2018 with the range from 1.01 to 2.12. Many countries 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. 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.

3.5.3 Donor deferral

Data on deferral from blood donation were provided by 130 countries (Africa 35, Americas 25, South-East Asia seven, Europe 31, Eastern Mediterranean 13, Western Pacific 19). The total deferral rates (the percentage of deferrals among all blood donor presentations) varied widely among countries, from less than 1% to over 67%. The median rate of total deferral was 13%.

Only 110 countries (low income 20, lower-middle income 30, upper-middle income 24, high income 36) provided number of deferrals by reason. Figure 13 shows the relationship between the countries' income and the average percentage of deferrals by low weight, low haemoglobin, high-risk behaviour, and travel history. Along with increased income, the deferral rate for low weight decreased, and that for travel history increased. This may reflect different health or nutrition status and human behaviour in populations in the countries in different income groups.

Figure 13. Donor deferral rate (%) by reason in countries in different income groups

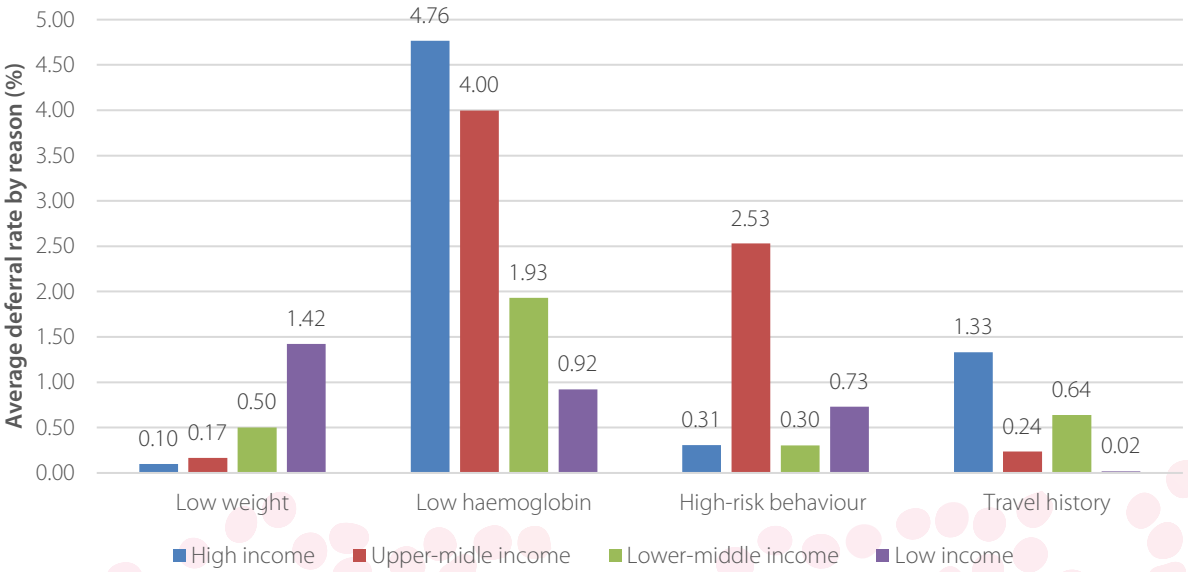


Table 11 shows the median and interquartile range of the total deferral rate, by WHO region. Variations in deferral rates could be due to absence of donor selection criteria or appropriate donor selection procedures, or different donor registration practices. It is important to note, however, that there may be underreporting of the total number of deferrals or deferrals 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 they are useful for countries in monitoring implementation of their donor selection guidelines, and in identifying needs for improvement in donor education.

Table 11. Donor deferral rate by WHO region (median and interquartile range, %)

Region	Median	Interquartile range
Africa (n=35)	6.3	2.8–13.1
Americas (n=25)	20.3	15.1–27.7
South-East Asia (n=7)	11.5	4.5–11.6
Europe (n=31)	11.3	6.7–13.7
Eastern Mediterranean (n=13)	14.9	9.2–16.4
Western Pacific (n=19)	13.2	10.2–21.0

CHAPTER 4

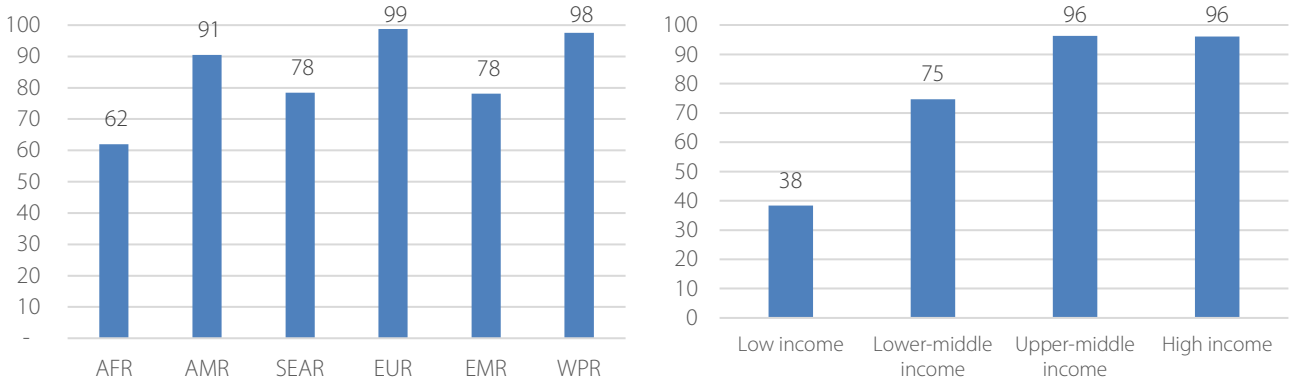
PROCESSING OF WHOLE BLOOD DONATIONS INTO COMPONENTS

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.

Based on data reported to the GDBS by 157 countries, 89% of whole blood donations collected globally were processed into components: 96% in high-income countries, 96% in upper-middle-income countries, 75% in lower-middle-income countries, and 38% in low-income countries.

Across the WHO regions, the percentages for processing blood into components were 62% in the African Region, 91% in the Region of the Americas, 78% in the South-East Asia Region, 99% in the European Region, 78% in the Eastern Mediterranean Region, and 98% in the Western Pacific Region (Figure 14).

Figure 14. Whole blood donations processed into components by WHO region and World Bank income group, 2018 (%)



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

Table 12 shows the number of countries processing blood donations into components in different percentage groupings, by WHO region. In almost all countries in Europe (37/39), over 90% of whole blood donations were separated into components. In other WHO regions, between 42% (18/43 in Africa) and 71% (22/31 in the Americas) of countries reported that over 90% of whole blood donations were separated into components. Around 44% (19/43) of countries in Africa, 20% (2/10) of countries in South-East Asia, 15% (3/20) of countries in the Western Pacific, and 6.5% (2/31) of countries in the Americas reported that less than 50% of whole blood donations were separated into components.

In comparison with previous reporting based on GDBS 2013, an increase in the proportions of whole blood processed into components was observed in the South-East Asia Region and Eastern Mediterranean Region. South-East Asia also reported that more countries were able to process a higher percentage of whole blood into components. The African Region reported a slight decrease. The other three regions (the Americas, Europe and the Western Pacific) reported high (greater than 90%) proportions of whole blood donations processed into components in both 2013 and 2018.

Table 12. Proportion of blood donations processed into components: number of countries in each percentage grouping by WHO region, 2018

Region	< 25%	25–49.9%	50–74.9%	75–89.9%	90–100%
Africa (n=43)	15	4	3	3	18
Americas (n=31)	0	2	0	6	22
South-East Asia (n=10)	0	2	1	2	5
Europe (n=39)	0	0	0	2	37
Eastern Mediterranean (n=14)	0	2	0	4	8
Western Pacific (n=20)	1	2	0	5	12

CHAPTER 5

LABORATORY SCREENING OF BLOOD DONATIONS

5.1 Laboratory screening policy

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

5.1.1 Human immunodeficiency virus, 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 171 responding countries, 166 reported having a policy of screening all blood donations for human immunodeficiency virus (HIV). Five countries did not answer the questions. Overall, 21 countries reported testing for HIV-1/2 antibodies (Ab), while 90 countries reported testing for HIV-1/2 antibodies and antigens (Ab+Ag). A total of 55 countries reported testing for HIV ribonucleic acid (RNA) using nucleic acid amplification testing (NAT) in addition to serological testing for all blood donations or selected donations (Table 13).

Of the 171 responding countries, 166 reported having a policy of screening all blood donations for hepatitis B virus (HBV). Five countries did not answer the questions on HBV testing policy. All 166 countries reported having a policy of testing all blood donations for hepatitis B surface antigen (HBsAg). A total of 26 countries reported having a policy of testing all blood donations for anti-HBc in addition to testing for HBsAg; four countries reported selective testing for anti-HBc in addition to testing for HBsAg. Fifty-five countries reported using NAT for HBV in addition to serological testing for all blood donations or selected donations (Table 14).

Of the 171 responding countries, a total of 164 countries reported having a policy of serological testing of all blood for hepatitis C virus (HCV), with 126 countries having a policy of testing all blood for HCV antibodies, and 38 countries testing for HCV Ab+Ag. Fifty-four countries reported also having a policy of NAT in addition to the serological testing for all blood donations or selected donations. Seven countries did not answer the questions in this section (Table 15).

Table 13. Distribution of blood laboratory screening policies for HIV-1/2 by WHO region

Region	Ab	Ab+Ag	Ab + NAT[a]	Ab+Ag + NAT[b]	Unanswered
Africa (n=43)[c]	6	33	0	2	2
Americas (n=33)	1	24	3	4	1
South-East Asia (n=10)	4	2	0	4	0
Europe (n=42)	1	14	11	16	0
Eastern Mediterranean (n=18)	0	11	1	6	0
Western Pacific (n=25)	9	6	4	4	2
Global (n=171)	21	90	19	36	5

[a] Cuba reported policy of selective NAT testing.
[b] Albania, Colombia, Indonesia, Malaysia, Myanmar, Pakistan, and Sri Lanka reported policies of selective NAT testing.
[c] The data collection form used for the collection of the 2018 data for the African Region did not include this information. Information collected in earlier years (2015 or 2014) was used for the analysis.

Table 14. Distribution of blood laboratory screening policies for HBV by WHO region

Region	HBsAg	HBsAg + anti-HBc (routine)	HBsAg + anti-HBc (selective)	HBsAg + NAT[a]	HBsAg + anti-HB[c] (routine) + NAT[b]	HBsAg + anti-HB[c] (selective) + NAT	Unanswered
Africa (n=43)[c]	33	5	0	0	1	1	2
Americas (n=33)	13	9	3	1	5	1	1
South-East Asia (n=10)	4	2	0	3	1	0	0
Europe (n=42)	10	5	1	16	6	4	0
Eastern Mediterranean (n=18)	6	4	0	1	7	0	0
Western Pacific (n=25)	14	1	0	6	1	1	2
Global (n=171)	80	26	4	27	21	7	5

[a] Albania, Cuba, Indonesia, Malaysia, and Myanmar reported policies of selective NAT testing.
[b] Colombia, Lebanon, Pakistan, and Sri Lanka reported policies of selective NAT testing.
[c] The data collection form used for the collection of the 2018 data for the African Region did not include this information. Information collected in earlier years (2015 or 2014) was used for the analysis.

Table 15. Distribution of blood laboratory screening policies for HCV by WHO region

Region	HCV Ab	HCV Ab+Ag	HCV Ab + NAT[a]	HCV Ab+Ag + NAT[b]	Unanswered
Africa (n=43)[c]	31	8	1	1	2
Americas (n=33)	17	7	5	2	2
South-East Asia (n=10)	5	1	3	1	0
Europe (n=42)	10	5	23	3	1
Eastern Mediterranean (n=18)	7	4	3	4	0
Western Pacific (n=25)	13	2	8	0	2
Global (n=171)	83	27	43	11	7

[a] Albania, Colombia, Cuba, Indonesia, Malaysia, Myanmar, and Pakistan reported policies of selective NAT testing.
[b] Sri Lanka reported policy of selective NAT testing.
[c] The data collection form used for the collection of the 2018 data for the African Region did not include this information. Information collected in earlier years (2015 or 2014) was used for the analysis.

5.1.2 Syphilis

Two European countries (Denmark, Iceland) reported implementing a policy of not routinely performing syphilis testing for blood donations. Another European country (Norway) reported implementing a policy of syphilis testing

for selective donations, Three countries (two in Africa, one in Western Pacific) did not answer the questions on syphilis testing policy. All other 165 responding countries had a policy of performing syphilis testing for all donations.

5.1.3 Chagas

Twenty countries in the Region of the Americas reported having a policy of testing all blood donations for Trypanosoma cruzi. Twelve countries reported implementing selective testing for T. cruzi for donors who had travelled to at-risk areas or who had defined risk factors (Table 16).

Table 16. Testing for Chagas disease

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

5.1.4 Human T-lymphotropic virus

Thirty-five countries reported having the policy of testing all blood donations for human T-lymphotropic virus (HTLV-1/2) antibody. Fifteen countries reported implementing selective testing for donors from specific geographical locations, new donors or donors who had not been tested before (Table 17).

Table 17. Testing for HTLV-1/2

Africa	Americas	Europe	Eastern Mediterranean	Western Pacific
Seychelles	Argentina	France*	Iran (Islamic Republic of)*	Australia
Benin*	Bahamas	Greece	Kuwait	China*
	Barbados	Israel	Oman	Japan
	Brazil	Luxembourg*	Qatar	New Zealand*
	Canada	Netherlands*	Saudi Arabia	Republic of Korea*
	Chile	Norway*	United Arab Emirates	Viet Nam*
	Colombia	Portugal*		
	Costa Rica	Romania		
	Dominica	Spain*		
	Ecuador*	Sweden*		
	Guyana	United Kingdom*		
	Haiti			
	Honduras			
	Jamaica			
	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)			

* Selective testing.

5.1.5 Malaria

Fifty-one countries reported having a policy of testing for malaria, of which 20 countries (five in Africa, four in the Americas, four in South-East Asia, two in Europe, three in the Eastern Mediterranean, and two in the Western Pacific) required such testing for all donations. The malaria screening policy in these 51 countries is listed in Table 18.

Table 18. Malaria testing policy in 51 countries

Region	Testing for all donations (microscopy)	Selective testing (microscopy)	Selective testing (antibody testing)
Africa	Angola Eswatini[b] Madagascar[b] Malawi Sao Tome and Principe[b]	Botswana[b] Gambia[a]	
Americas	Belize Brazil[a] Guyana Suriname	Colombia Mexico	
South-East Asia	Bangladesh[a] Bhutan India[a] Sri Lanka	Indonesia[b] Myanmar[b] Nepal[a]	
Europe	Tajikistan Uzbekistan	Finland[a] Iceland[b] Norway[b] Sweden[b]	Belgium Greece Italy Luxembourg Netherlands Portugal Spain Switzerland United Kingdom
Eastern Mediterranean	Pakistan[a] Saudi Arabia Yemen[b]	Bahrain	Kuwait Qatar[c] United Arab Emirates
Western Pacific	Philippines[a] Vanuatu	Fiji[a] Malaysia Viet Nam	Australia New Zealand Republic of Korea Singapore

[a] Microscopy or antigen testing.
[b] Antigen testing.
[c] Selective testing for antigen and antibody.

5.1.6 Other transfusion-transmissible infections

Fourteen countries (Austria, Canada, Cyprus, Germany, Greece, Italy, Luxembourg, Poland, Romania, Singapore, Spain, Switzerland, United Kingdom, United States of America) reported a West Nile virus testing policy. Canada and the United States of America tested all donations for West Nile virus RNA, while other countries tested selected donations. The United States of America also reported a Zika virus testing policy. Four countries (Finland, Japan, Luxembourg, Switzerland) reported a human parvovirus B19 testing policy for all donations. Switzerland indicated that the policy was implemented as required by the fractionation industry. Luxembourg and Switzerland also reported a testing policy for hepatitis A virus. France, Japan and Luxembourg reported a selective testing policy for hepatitis E virus; Switzerland reported the implementation of NAT testing for hepatitis E virus for all donations since October 2018. Three countries (Argentina, Armenia, Mexico) reported testing all donations for Brucella infection. Reports of testing under the category "other transfusion-transmissible infections" to the GDBS may not be exhaustive; countries that have implemented specific blood testing may not provide the information to WHO due to the unspecific nature of the GDBS questions.

5.2 Coverage and quality of laboratory screening of blood donations

Based on GDBS data, 10 countries (five in Africa, three in the Western Pacific, one in the Americas, and one in the Eastern Mediterranean) reported not being able to test 100% of the blood collected for one or more of the four transfusion-transmissible infections (TTIs) – HIV, HBV, HCV and syphilis – as required by the national testing policy. Three countries (two in Africa and one in the Western Pacific) reported not being able to test all donations for HIV. The percentage of donations tested in these countries ranged from 94.6% to 98.1%. Five countries (four in Africa and one in the Western Pacific) reported not being able to test all donations for HBV, with the percentage of donations tested in these countries ranging from 92.5% to 99.9%. Six countries (four in Africa and two in the Western Pacific) reported not being able to test all donations for HCV. The percentage of donations tested ranged from 88.8% to 99.7%. Two countries (one in the Americas and one in the Western Pacific) reported not testing donated blood for HCV. Seven countries (five in Africa, one in the Eastern Mediterranean, and one in the Western Pacific) reported not being able to test all donations for syphilis. The percentages of donations tested ranged from 55.5% to 98.5%. Six countries (three in the Eastern Mediterranean, three in the Western Pacific) were not able to provide data on the coverage of one or more screening tests for the four key infectious markers of HIV, HBV, HCV and syphilis.

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 107 countries on the percentage of blood donations that were screened in facilities that met these quality assurance criteria. Overall, 98% of the donations reported by these countries were screened following these basic quality-assured procedures. In high-income and upper-middle-income countries, 99.8% and 99.9%, respectively, of the donations were screened following basic quality-assured procedures, compared to 82.8% and 76.2% in lower-middle-income countries and low-income countries, respectively.

To supplement the assessment of the quality of testing, data on the status of the participation of blood screening laboratories in the External Quality Assessment Scheme (EQAS) for the testing of TTIs were analysed. Data on the status of EQAS participation of 4365 laboratories were reported by 126 countries (high income 37, upper-middle income 36, lower-middle income 36, low income 17). Globally, 68% of blood screening laboratories participated in EQAS for the testing of TTIs (88%, 75%, 50% and 68% in high-, upper-middle, lower-middle, and low-income countries, respectively) (Table 19).

Care should be taken in interpreting the data provided for these two indicators. These results only reflect the status of countries that answered this question, rather than global status. There is evidence that countries lacking certain quality elements (for example, full participation of screening laboratories in EQAS) are more likely to skip the GDBS questions on quality-assured testing. The countries with no data or no response could be even worse with regard to quality assurance. The coverage of quality-assured testing for TTIs has been identified as a key global indicator for monitoring important global disease control programmes (6, 7). Countries are encouraged to implement all elements of the quality system in their blood screening laboratories and provide accurate information for these indicators.

Table 19. Proportion of blood screening laboratories that participate in EQAS for testing of TTIs by World Bank income group

Income group	No. of blood screening laboratories	No. of laboratories participating in EQAS	Percentage
Low (n=17)	491	335	68
Lower middle (n=36)	1 384	697	50
Upper middle (n=36)	2 096	1 575	75
High (n=37)	394	346	88

According to the GDBS for 2018, 40 of 140 countries[4] (22 in Africa, 11 in the Western Pacific, four in South-East Asia, two in the Eastern Mediterranean and one in Europe) reported that all donations (13 countries) or a percentage of donations were tested using rapid tests. Five Pacific island nations (Cook Islands, Federated States of Micronesia, Kiribati, Samoa, Tonga) in the Western Pacific Region reported that all blood donations were tested using rapid tests. Annual numbers of blood samples in these countries are small, ranging from 300 to 3000. The use of rapid, simple, single-use devices is generally not recommended for blood screening. They may, however, be considered for use in situations, often in remote or poorly supported areas, where the blood service is not yet developed or blood is needed urgently but banked blood is not available. High-quality testing devices should be selected and the testing performed in a quality-assured manner.

5.3 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 are directly related to the safety of the blood supply, because they have an impact on the residual risk of distributed blood components for transfusion, and also on the risk due to errors in blood quarantine and release (even though test-positive donations should be 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 20 shows the proportion of blood donations with positive or reactive[5] 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.

[4] The GDBS survey on the use of rapid tests does not include countries in the Region of the Americas, except Canada and the United States of America.

[5] 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. The prevalence data presented in this report are a mix of both repeat reactive results in the blood centre and confirmed positive results.

Table 20. Proportions of blood donations with positive/reactive results on screening tests by income group

Income group	Proportion of blood donations with positive/reactive results (median and interquartile range, %)			
	HIV	HBV	HCV	Syphilis
High income	0.002 (<0.001–0.01)	0.02 (0.005–0.12)	0.007 (0.002–0.06)	0.02 (0.003–0.12)
Upper-middle income	0.10 (0.03–0.23)	0.29 (0.13–0.62)	0.19 (0.07–0.36)	0.35 (0.13–1.10)
Lower-middle income	0.19 (0.04–0.62)	1.70 (0.70–4.74)	0.38 (0.12–0.99)	0.69 (0.19–1.38)
Low income	0.70 (0.28–1.60)	2.81 (2.00–6.02)	1.00 (0.50–1.67)	0.90 (0.60–1.81)

Forty-eight countries (25 in the Americas, twelve in Europe, five in the Western Pacific, five in the Eastern Mediterranean, and one in Africa) reported HTLV-1/2 testing results. Twenty-five countries (22 in the Americas, two in Europe and one in the Western Pacific) reported testing results for Chagas disease. The testing results of HTLV-1/2 and Chagas disease in these countries, including the selective testing results in some countries, can be found in Annex 5.

CHAPTER 6

DISCARD OF BLOOD

Information on wastage or discarded blood donations was provided by 138 countries (41 high income, 36 upper-middle income, 37 lower-middle income, and 24 low income). Reactivity for markers of TTIs, outdated stock, and incomplete collection were among the main reasons for discard (Figure 15); 28% of donations were discarded with the reasons not specified. The median total discard rate was 9.6% in low-income countries, 8.0% in lower-middle-income countries, 6.7% in upper-middle-income countries, and 4.1% in high-income countries (Table 21). TTI was the most common reason for discard in low-income countries, with a median discard rate of 5.8%. Discard rates due to reactivity for markers of TTIs for lower-middle-income, upper-middle-income, and high-income countries were 4.4%, 1.9%, and 0.5%, respectively (Table 22).

Figure 15. Distribution of discards of blood donations by reason, 2018

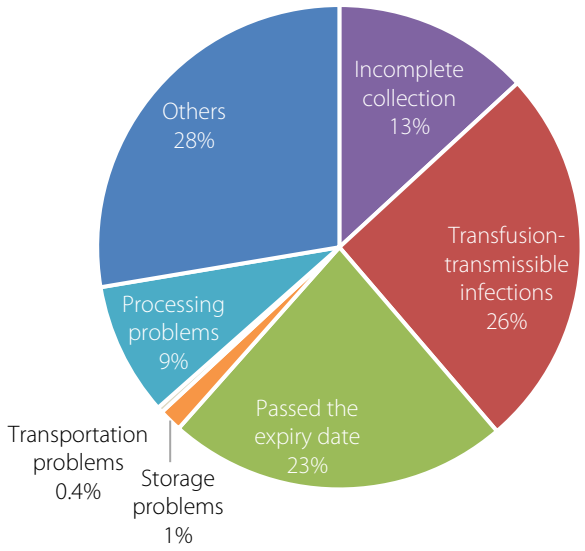


Table 21. Percentage (median and interquartile range) of total whole blood donations discarded by World Bank income group

Income group	Median	Interquartile range (%)
Low (n=24)	9.6	4.3–14.8
Lower middle (n=37)	8.0	5.9–11.6
Upper middle (n=36)	6.7	3.1–8.7
High (n=41)	4.1	2.9–7.4

Table 22. Percentage (median and range) of donations discarded due to reactivity for markers of TTIs by World Bank income group

Income group	Median	Interquartile range (%)
Low income (n=24)	5.8	2.7–10.9
Lower-middle income (n=36)	4.4	2.8–6.8
Upper-middle income (n=33)	1.9	0.9–3.7
High income (n=29)	0.5	0.3–1.7

CHAPTER 7

CLINICAL USE OF BLOOD

7.1 Assessing the need and demand for blood

WHO has developed the following definitions to evaluate the differences between need for, demand for, and use of blood.

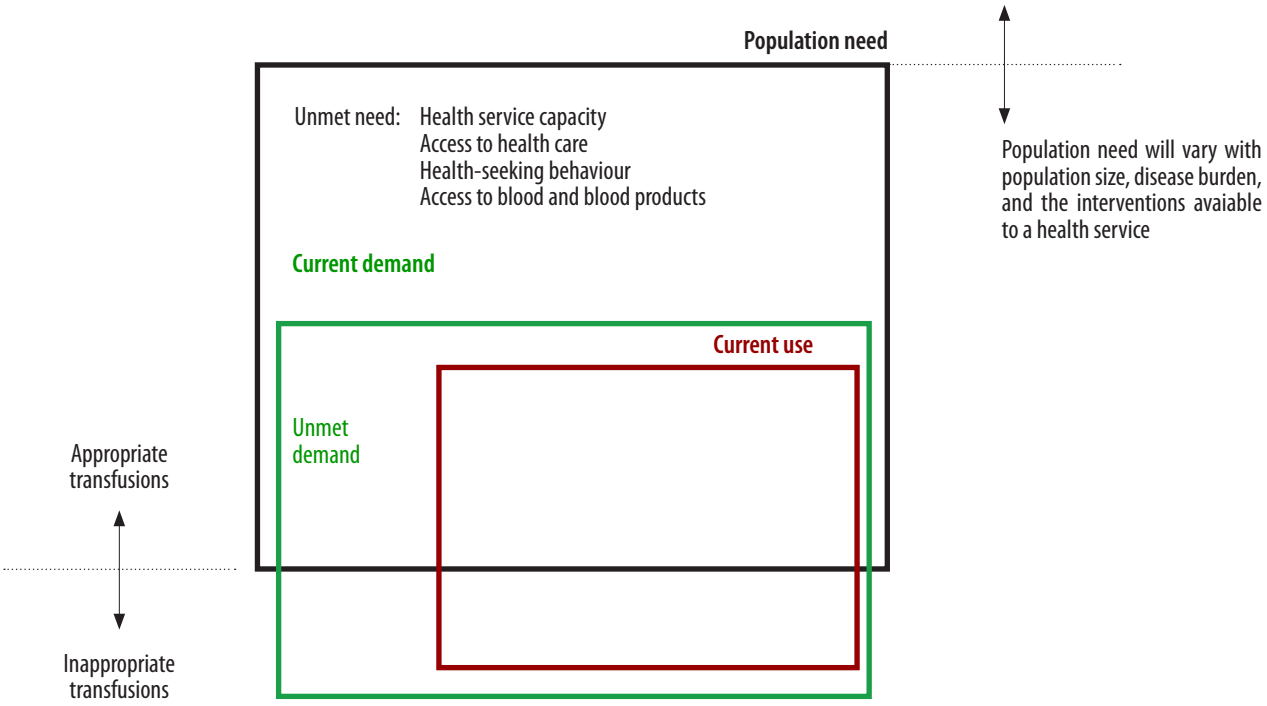
Need: An estimation of the amount of blood needed to meet the transfusion requirements of the patient population according to current policies, clinical guidelines and best practices.

Demand: The amount of blood that would be transfused if all prescriptions for blood were met. Demand may reflect appropriate or inappropriate indications and practices.

Use: The actual amount of blood currently transfused; use may be appropriate or inappropriate.

These definitions, along with Figure 16, summarize current concepts on trying to measure the need for, demand for, and use of blood. Many factors influence the requirements for blood to meet the health care needs of a population, as with all other treatment modalities. These include income levels, current status and rate of development of the health care system, and accessibility of health care facilities to the public. The need for, demand for, and use of blood in a country could be affected by geography, population migration, and epidemiology of diseases for which blood is needed.

Figure 16. Paradigm of need for, demand for, and use of blood



Source: WHO (*8*).

In all countries, there is a need to monitor and balance the supply of blood for requirements. Even in countries with mature and developed blood transfusion services, requirements for blood are not always met, and a range of initiatives are implemented to maintain or increase blood donations. All blood transfusion services and operators, to varying degrees, invest considerable time and resources in predicting demand for blood and adjusting donations. Shortages of blood, whether real or potential, have impacted all countries at differing times, including more recently during the COVID-19 pandemic. In the early stages of the pandemic there were major concerns about lack of availability of blood for transfusion. Strategies and recommendations for responding to potential blood shortages must be incorporated into resilience planning for blood supply by countries and blood service operators (*9*).

Blood transfusion services in developed countries may apply different approaches to assessing change in demand for blood, including use of detailed historical blood supply data to predict incremental increases in demand (time series analysis). A further approach to estimating current demand is to use real-time blood bank data on blood requests. A potential disadvantage of this approach is that the number of blood transfusion requests received by blood banks (and the amount of blood requested) may not be an accurate reflection of true demand or need. This is more likely to be the case where the blood supply has actually been, or has been perceived to be, insufficient (*8*).

Demographic change is likely to be one of the main drivers of long-term increases in blood requirements in developed countries (*10, 11*). It can be modelled by describing current blood use by age, and by applying the results to predictions of future population size and structure (*12*). The development of new medical interventions may also impact future blood requirements in developing countries, but these are harder to predict and may in fact serve to reduce the need for blood transfusion as well as potentially increase it.

There is no simple formula to provide reliable or useful estimates of the need and demand for blood in a national health system. A national assessment of blood requirements would usually be necessary for short-term or long-term national blood programme planning. For example, using a survey of a representative sample of hospitals, Drammeh et al. (*13*) estimated that approximately 6.2 blood donations per 1000 population are needed in the United Republic of Tanzania. This number is only slightly more than half of the 10 per 1000 population value that is used as a rough

estimation for developing countries. Mammen et al. (*14*) estimated that, based on the population, 26.2 million units (95% CI 17.9–38.0) of whole blood collection would need to be collected annually. This is equivalent to a donation rate of approximately 19.4 donations per 1000 population. A different approach was used for the study, which included the determination of diseases and conditions requiring transfusion, estimation of the population at risk through a comprehensive literature review, and estimation of the percentage of people with diseases and conditions requiring transfusion and transfusion needed through the Delphi method. The study also identified a gap between need and demand (estimated at 13 million units), and highlighted the importance of addressing the multifactorial causes that lead to the existence of the gap (*14*).

7.2 Patients who received blood transfusion

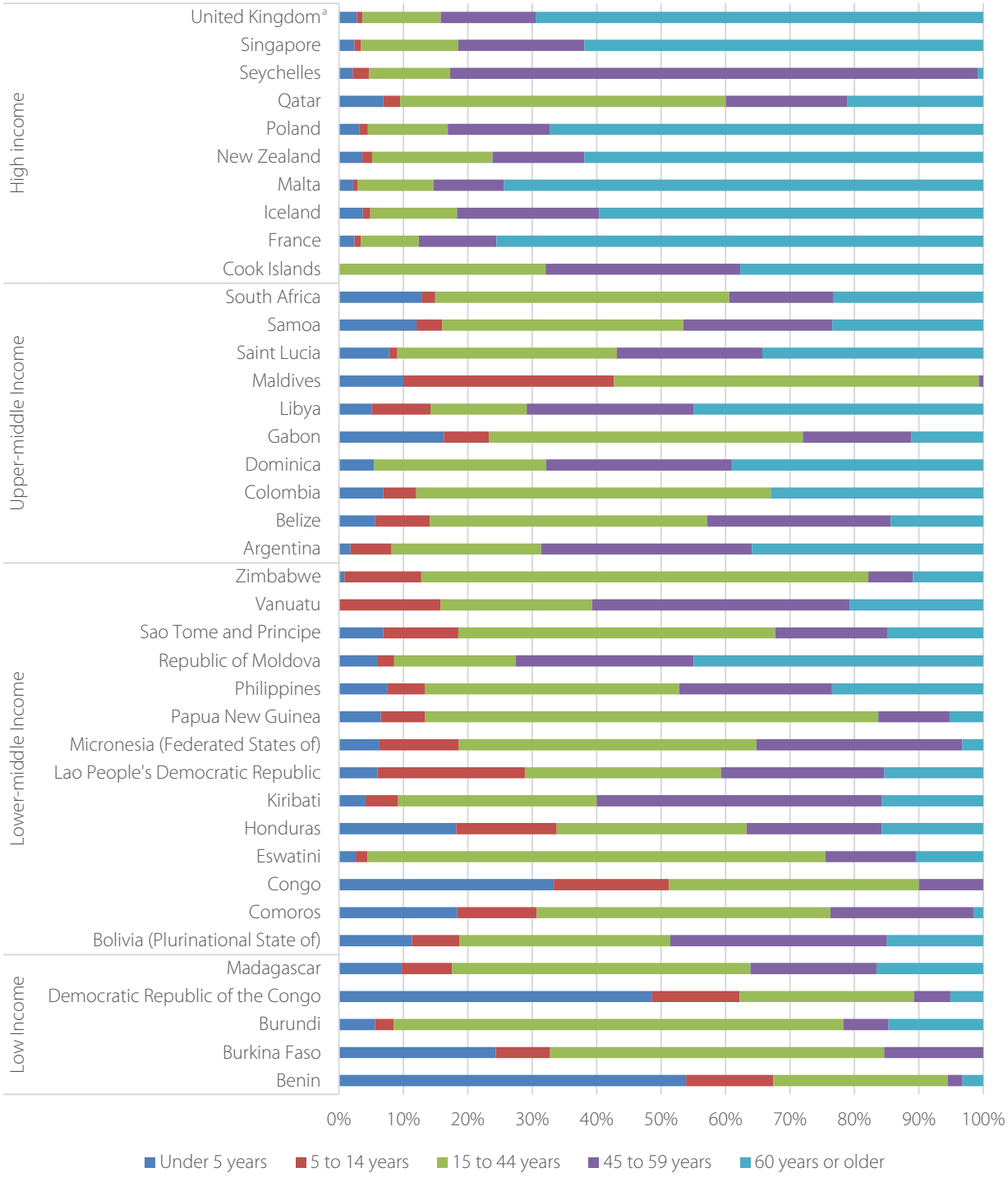
There is evidence of significant differences in patterns of blood use between high-, middle-, and low-income countries. In high-income countries, transfusion is most commonly used for supportive care in cardiovascular and transplant surgery, massive trauma, and therapy for solid and haematological malignancies. In low- and middle-income countries, on the other hand, it is more often used to treat pregnancy-related complications and severe childhood anaemia (*15*).

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 76 % of all transfusions. In low-income countries, up to 54% of all transfusions are for children aged under 5 years, usually followed by females aged between 15 and 45 years. Figure 17 provides examples of the age distribution of patients transfused in countries of different income groups.

2018 data on distribution of units of blood transfused in different clinical departments in hospitals or other transfusion-performing health facilities from 19 countries in the African Region revealed that among 2 248 721 blood units transfused, 466 625 (21%) were transfused to patients in paediatrics departments, and 427 289 (19%) were transfused to patients in obstetrics and gynaecology departments. In five of the 19 countries, more than 30% of blood was transfused to paediatric patients: Democratic Republic of the Congo 60%, Benin 58%, Burkina Faso 39%, Congo 33%, and Comoros 31%. Five countries reported that more than 30% of blood was transfused to gynaecological and obstetric patients: Burkina Faso 61%, Cameroon 55%, Comoros 40%, Eswatini 32%, and Burundi 32%. Blood use for trauma and major bleeding varied considerably, although generally at lower rates than for patients in paediatrics and obstetrics and gynaecology departments. The same data from the WHO African Region suggest that rates of usage in emergency and resuscitation departments in some countries approaches 23% to 34% (Madagascar 23%, Gabon 26%, Sao Tome and Principe 28%, and Cabo Verde 34%).

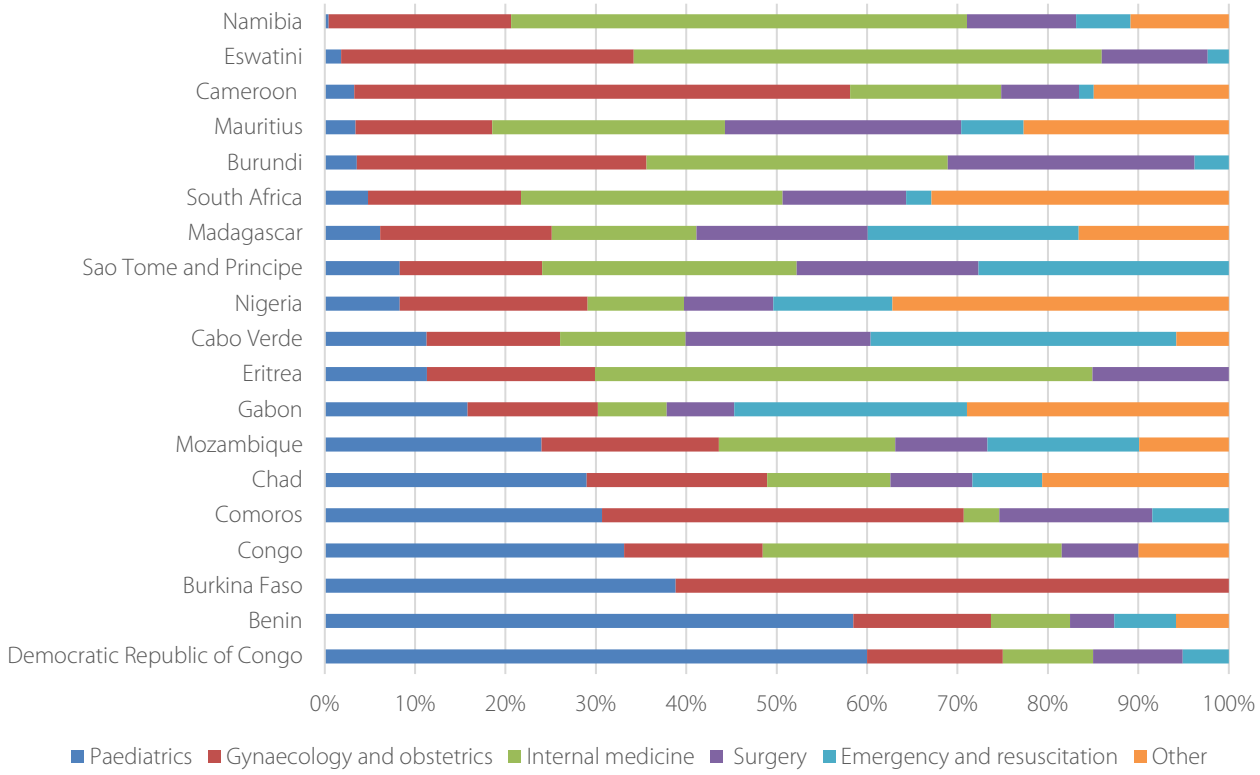
Although these data indicate that children and women are the recipients who are most frequently transfused in low-income countries, it should be noted that these results are dependent on the accuracy of coding – for example, it is possible that blood use in emergency departments is covered by surgery departments in some countries (Figure 18).

Figure 17. Age distribution of patients who received transfusion in selected countries



Note a. Based on subnational data provided by Scottish National Blood Transfusion Service.

Figure 18. Distribution of blood units transfused in different clinical departments in selected countries in Africa



7.3 Blood and blood components transfused

Not all countries responding to the GDBS were able to provide information on the units of blood and blood components transfused. Many countries provided the numbers of units that were issued to hospitals or other transfusion-performing facilities.[6] A total of 144 countries (high income 43, upper-middle income 40, lower-middle income 39, low income 22) provided data to GDBS 2018 on units of blood transfused, or, when they were not available, the units of blood components issued. Nine countries provided insufficient data for the coverage percentage to be quantified. Table 23 lists the units of blood products transfused in 135 of the total 144 countries, together with the population size of these reporting countries. These data are used to estimate the rate of blood and blood component transfusion in countries in different economic groups and WHO regions.

[6] For the purpose of simplicity, in the subsequent text, "units transfused" is used instead of "units transfused or issued". It is assumed that blood products issued were transfused with minimal loss.

Table 23. Populations, blood donations and transfusion of blood products in 135 countries by World Bank income group

Income group	Blood products (thousands)							Population (millions)
	WB products	Red cells	WB-derived PLT	AP-PLT	FFP	FP	CRYO	
High income (n=43)	18	23 263	1 790	1 926	4 359	308	494	744
Upper-middle income (n=39)	275	26 712	1 309	2 411	6 225	71	873	2 526
Lower-middle income (n=34)	2 823	5 712	285	402	902	572	211	1 073
Low income (n=19)	1 057	756	65	0	137	1	3	395
Total (n=135)	4 173	56 443	3 449	4 739	11 623	952	1 581	4 738

WB = whole blood
PLT = platelets
FFP = fresh frozen plasma
FP = frozen plasma
AP = apheresis
CRYO = cryoprecipitate

A median rate of 28.8 units of red cell products (including whole blood and red cells transfused) per 1000 population (interquartile range (IQR) 21.5–37.2) was reported by high-income countries, whereas the transfusion rate was 12.7 units (IQR 8.7–19.4) in upper-middle-income countries, 5.5 units (IQR 3.2–10.3) in lower-middle-income countries, and 4.3 units (IQR 2.6–6.0) in low-income countries (Table 24). Across WHO regions, the median rate of red cell products transfused per 1000 population was 4.8 units (IQR 3.1–8.9) in Africa, 11.4 units (IQR 7.6–13.3) in the Americas, 9.7 units (IQR 5.2–12.4) in South-East Asia, 29.3 units (23.0–37.0) in Europe, 11.3 units (IQR 7.3–20.6) in the Eastern Mediterranean, and 14.0 units (IQR 6.3–20.0) in the Western Pacific.

Table 24. Units of red cell products transfused per 1000 population by World Bank income group

Income group	Median	Interquartile range (IQR)
Low income (n=19)	4.3	2.6–6.0
Lower-middle income (n=34)	5.5	3.2–10.3
Upper-middle income (n=39)	12.7	8.7–19.4
High income (n=43)	28.8	21.5–37.2
All (n=135)	12.3	5.6–24.9

Note: Seven countries in the low-income group (five in Africa) reported red cell product units (whole blood plus red cells) higher than the number of whole blood collection reported. Based on communication with the programme managers in the countries, this is because paediatric units derived from an adult unit of whole blood were counted as multiple units when reported to WHO. Paediatric units in some countries in this group are frequently supplied and transfused. The transfusion rate estimated based on these data could thus be an overestimate for countries belonging to the group.

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, 0.2%, 16%, and 47% of blood, respectively, was transfused as whole blood (Table 25). 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 25. Proportion (median and interquartile range, %) of whole blood transfusions among all red cell transfusions by World Bank income group

Income group	Median	Interquartile range
Low income (n=19)	47	3.8–94.8
Lower-middle income (n=34)	16	0.5–55.7
Upper-middle income (n=39)	0.2	0–1.7
High income (n=43)	0	0–0.04

Transfusion rates of other blood components can be calculated in a similar way. A median rate of 4.2 units of platelets transfused (in units of the dosage equivalent to adult dose) per 1000 population (IQR 3.0–4.9) was reported by high-income countries, whereas the transfusion rate was 1.3 units (IQR 0.6–2.5) in upper-middle-income countries, 0.3 units (IQR 0.1–0.8) in lower-middle-income countries, and 0.2 units (IQR 0.1–0.3) in low-income countries (Table 26). Across WHO regions, the median rate of platelet transfusion per 1000 population was 0.2 units (IQR 0.1–0.4) in Africa, 1.1 units (IQR 0.5–2.2) in the Americas, 0.4 units (IQR 0.2–2.3) in South-East Asia, 4.2 units (2.9–4.9) in Europe, 1.7 units (IQR 1.4–2.4) in the Eastern Mediterranean, and 1.3 units (IQR 0.9–3.8) in the Western Pacific.

Table 26. Units of platelet transfused per 1000 population by World Bank income group

Income group	Median	Interquartile range (IQR)
Low income (n=12)	0.2	0.1–0.3
Lower-middle income (n=31)	0.3	0.1–0.8
Upper-middle income (n=37)	1.3	0.6–2.5
High income (n=43)	4.2	3.0–4.9
All (n=123)	1.3	0.4–3.5

Platelets can be prepared from whole blood (whole blood-derived platelets) or can be prepared through apheresis procedures (apheresis platelets). Based on the data reported by countries, globally, the ratio of whole blood-derived platelets (in units of the dosage equivalent to adult dose) to apheresis platelets was 42:58. The ratios in high-income, upper-middle-income and lower-middle-income countries was 48:52, 35:65 and 43:57, respectively, and in 12 low-income countries, the 100% of the platelets transfused are whole blood-derived.

Regarding plasma transfusions, a median rate of 5.4 units of plasma (including fresh frozen plasma and frozen plasma) per 1000 population (IQR 3.4–8.1) was reported by high-income countries, whereas the transfusion rate was 4.6 units (IQR 2.4–7.7) in upper-middle-income countries, 0.5 units (IQR 0.2–2.7) in lower-middle-income countries, and 0.2 units (IQR 0.1–0.5) in low-income countries (Table 27). Across WHO regions, the median rate of plasma transfusion per 1000 population was 0.4 units (IQR 0.2–0.9) in Africa, 2.8 units (IQR 2.3–4.4) in the Americas, 0.8 units (IQR 0.5–3.4) in South-East Asia, 7.5 units (IQR 4.4–11.2) in Europe, 3.5 units (IQR 1.8–9.6) in the Eastern Mediterranean, and 3.5 units (IQR 0.5–6.1) in the Western Pacific.

Table 27. Units of plasma transfused per 1000 population by World Bank income group

Income group	Median (range)	Interquartile range (IQR)
Low income (n=15)	0.2	0.1–0.5
Lower-middle income (n=30)	0.5	0.2–2.7
Upper-middle income (n=33)	4.6	2.4–7.7
High income (n=43)	5.4	3.4–8.1
All (n=121)	3.0	0.5–7.2

Note: All units were converted to units of the dosage equivalent to adult dose if reported in individual units (individual units divided by 5).

7.4 Change in blood and blood components transfusion between 2013 and 2018

Of the 144 countries that provided blood transfusion data in 2018, 112 countries (Africa 30, Americas 16, South-East Asia nine, Europe 31, Eastern Mediterranean eight, Western Pacific 18) also provided transfusion data in 2013. The analysis of the data for both years revealed the changes in blood components transfusion between 2013 and 2018.

Red cell products transfused (whole blood and red cells) in 112 countries increased by 5% between 2013 and 2018. By WHO region, the Eastern Mediterranean Region and the South-East Asia Region reported that red cell products transfused between 2013 and 2018 increased by 33% and 24%, respectively. The increase rates in Africa, the Western Pacific and the Americas were 16%, 9% and 4%, respectively. In Europe, red cell products transfused decreased by 5% during the period.

In 2018, overall, the proportion of whole blood transfusions among all red cells transfused was 7.7%, a slight increase from 7.0% in 2013. By WHO region, the proportion was 28.3% in Africa, 0.3% in the Americas, 27.3% in South-East Asia, 0.4% in Europe, 27.9% in the Eastern Mediterranean, and 2.1% in the Western Pacific. South-East Asia reported a reduction in the proportion of whole blood transfusion from 32.2% in 2013 to 27.3% in 2018. The Americas and the Western Pacific reported low percentages of whole blood transfusion in both years, and a slight reduction between 2013 and 2018. In the Eastern Mediterranean, the proportion of whole blood transfusion increased from 22.3% in 2013 to 27.9% in 2018. However, this was based on data from only seven countries and might not reflect the actual regional trend. Africa reported a minimal increase in the proportion during the period (Table 28).

Table 28. Units (millions) of red cell products transfused by WHO region, 2013 and 2018

Region	All red cell products transfused			% whole blood transfusion	
	2013	2018	% diff.	2013	2018
Africa (n=30)	3.32	3.85	16%	28.0%	28.3%
Americas (n=16)	3.40	3.55	4%	1.2%	0.3%
South-East Asia (n=9)	4.50	5.60	24%	32.2%	27.3%
Europe (n=31)	20.92	19.79	–5%	0.6%	0.4%
Eastern Mediterranean (n=8)	3.14	4.18	33%	22.3%	27.9%
Western Pacific (n=18)	17.18	18.69	9%	2.9%	2.1%
Total (n=112)	52.90	55.7	5%	7.0%	7.7%

Note: Percentage change (% diff.) is calculated as (units in 2018 – units in 2013)/(units in 2013)*100%.

Overall, in 112 countries, total platelets transfused (including both whole blood-derived platelets and apheresis platelets, both in units of the dosage equivalent to adult dose) changed little between 2013 and 2018. Across WHO regions, except for Europe, which reported a 27% decrease, all other regions reported an increase, with increase rates ranging from 15% in the Americas to 57% in Africa (Table 29). In four WHO regions (the Americas, South-East Asia, the Eastern Mediterranean, and the Western Pacific), it was observed that apheresis platelets increased at a faster rate than that of whole blood-derived platelets. Data collection in Africa did not differentiate between the two types of platelets. Europe reported that whole blood-derived platelets decreased by 43% and apheresis platelets transfused increased by 27% between 2013 and 2018.

Table 29. Units (thousands) of platelets transfused by WHO region, 2013 and 2018

Region	Platelets (whole blood derived)			Apheresis platelets (apheresis)			Platelets (total)		
	2013	2018	% diff.	2013	2018	% diff.	2013	2018	% diff.
Africa (n=30)	–	–	–	–	–	–	111	174	57%
Americas (n=16)	269	295	9%	123	155	26%	392	450	15%
South-East Asia (n=9)	202	257	27%	31	41	32%	233	298	28%
Europe (n=31)	2 812	1 590	–43%	860	1 094	27%	3 672	2 684	–27%
Eastern Mediterranean (n=8)	238	275	16%	16	39	144%	254	314	24%
Western Pacific (n=18)	530	576	9%	2 174	2 919	34%	2 704	3 495	29%
Total (n=112)	4 051	2 993	–26%	3 204	4 248	33%	7 366	7 415	0.7%

Note: All units were converted to units of the dosage equivalent to adult dosage if reported in individual units.
Percentage change (% diff.) is calculated as (units in 2018 – units in 2013)/(units in 2013)*100%.
– Data not available.

Plasma transfused (including fresh frozen plasma and frozen plasma) in 112 countries did not change between 2013 and 2018. Across WHO regions, except Europe, which reported a 6% decrease, all other regions reported an increase at rates ranging from 2% in the Western Pacific to 20% in Africa.

Cryoprecipitate transfused increased by 17% in 112 countries between 2013 and 2018. Across WHO regions, the Americas, Europe, Africa and the Eastern Mediterranean reported an increase at rates of 10%, 32%, 46% and 73%, respectively. The Western Pacific and South-East Asia reported a decrease at rates of 10% and 4%, respectively (Table 30).

Table 30. Units (thousands) of plasma products transfused by WHO region, 2013 and 2018

Region	Plasma			Cryoprecipitate		
	2013	2018	% diff.	2013	2018	% diff.
Africa (n=30)	351	421	20%	37	54	46%
Americas (n=16)	1 023	1 109	8%	190	209	10%
South-East Asia (n=9)	544	562	3%	233	224	–4%
Europe (n=31)	6 400	6 021	–6%	143	189	32%
Eastern Mediterranean (n=8)	1 071	1 178	10%	167	289	73%
Western Pacific (n=18)	2 239	2 278	2%	233	211	–9%
Total (n=112)	11 628	11 569	–0.5%	1 003	1 176	17%

Note: Percentage change (% diff.) is calculated as (units in 2018 – units in 2013)/(units in 2013)*100%.

Many industrialized countries have reported a decline in blood collection and transfusion in the past decade (*16–20*). Evidence suggests that this trend is at least in part contributable to the adoption by clinicians of restrictive transfusion policies and the implementation of patient blood management programmes (*21–23*).

A general increasing trend in collection and transfusion were observed in other countries, including most of the low- and middle-income countries and some high-income countries. Possible contributory factors include the expansion of health services in countries to achieve more equitable coverage (*24, 25*); the efforts by national governments and development partners to develop the national blood systems in priority countries (*26, 27*); and the growth of population.

Despite progress in low- and middle-income countries, significant disparity of blood supply and transfusion among countries in the world still exists. Key collection and transfusion indicators in countries at different economic development levels reported in this and previous status reports have highlighted this ongoing disparity.

7.5 Strategies to improve evidence-based transfusion practice and monitor safe and appropriate blood transfusion

Although many factors operate to explain the considerable variations in transfusion practice among countries (and within countries), one key factor is variable uptake and implementation of best practice, informed by high-quality research.

There is an expanding body of literature, informed by high-quality randomized trials, to provide clearer recommendations on which patients benefit from transfusions. A 2016 update of earlier Cochrane systematic reviews on the use of red blood cell transfusions was further revised in a 2021 update (*1*). The 2021 review identified and reported on a total of 48 randomized trials of red cell transfusion, involving data from 21 433 participants, across a range of clinical contexts (for example, orthopaedic, cardiac, or vascular surgery; critical care; acute blood loss, including gastrointestinal bleeding; acute coronary syndrome; and cancer). Other randomized trials have evaluated both the timing of transfusion administration and transfusion volume in African children with severe anaemia (*28, 29*).

There is now strong evidence for avoiding unnecessary transfusions with allogeneic red cells in most patients at haemoglobin thresholds between 7.0 and 8.0 grams per decilitre. Strategies to implement this research would minimize risk of exposure to unnecessary blood for transfusion, which is particularly important given variability in practices of laboratory screening for potential TTIs in many countries.

Evidence-based guidelines are important tools in the education of those ordering blood components and are prerequisites for establishing systems for the appropriate clinical use of blood, such as clinical audit. In 2018, 128 countries reported the existence of national guidelines on the clinical use of blood. Across WHO regions, 32 (74%) countries in the African Region, 23 (70%) in the Region of the Americas, 9 (90%) in the South-East Asia Region, 33 (79%) in the European Region, 12 (67%) in the Eastern Mediterranean Region, and 19 (76%) in the Western Pacific Region reported the existence of national guidelines on the clinical use of blood.

GDBS data reported by 92 countries (33 high-income countries, 29 upper-middle-income countries, 21 lower-middle-income countries and nine low-income countries) indicated that hospital transfusion committees were present in 48% of hospitals performing transfusion. Across World Bank economic groups, the percentage was 25% in low-income countries, 31% in lower-middle-income countries, 35% in upper-middle-income countries and 62% in high-income countries.

Data reported by 90 countries indicated that systems for reporting adverse transfusion events were present in 55% of hospitals in all the countries: 74% in hospitals in high-income countries, 35% in upper-middle-income countries, 22% in lower-middle-income countries and 18% in low-income countries.

Many countries did not answer 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 is needed, 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.

7.6 The risks of undertransfusion: unmet demand for blood in resource-limited countries

The above discussion has focused on appropriate transfusions, and the need to avoid unnecessary transfusions. It is critical, however, to recognize the risks of undertransfusion or delayed transfusion.

A number of studies have highlighted the burden of severe anaemia in young children, often due to malaria. Mortality rates are significant, and deaths may occur within a few hours of arrival in hospital, indicating the importance of access to timely blood transfusion support, which is often not available (30–32). Failure to recognize the presence of severe anaemia resulted in lack of transfusion in some cases (*33*).

The prevention and treatment of postpartum haemorrhage requires a multiplicity of interventions, including timely blood transfusion (*34*). The WOMAN trial report published by Picetti et al. (*35*) assessed the clinical and contextual factors surrounding the deaths of 483 women (of the 20 060 patients assessed in the trial) following postpartum haemorrhage in developing countries. It found that lack of timely transfusion or insufficient transfusion are still factors that lead to maternal deaths (*35*). An earlier review by Bates et al. (*36*) estimated that that overall 26% (ranging from 16% to 71%) of maternal haemorrhage deaths were due to lack of blood for transfusion.

Both the WHO Thirteenth General Programme of Work and specific global programmes, such as the Human Reproduction Programme based at WHO headquarters, identify the need to ensure universal health coverage as a key strategy (*37*). Universal health coverage requires ensuring access to essential health services. It is important that countries and development partners agree to collect data on indicators to monitor progress towards achieving universal health coverage and to evaluate the quality and effectiveness of their care processes (*38, 39*). One of these monitoring systems is the WHO annual monitoring system for Service Availability and Readiness Assessment (SARA). The system has been implemented in many low- and middle-income countries to regularly assess basic and comprehensive service availability and readiness, including uninterrupted safe blood supply, at the facility level (*40–42*).

Currently, there are very limited data or studies available on unmet need for blood transfusion in low- and middle-income countries. More publications on the clinical impact of lack of available blood for transfusion in low- and middle-income countries are needed. It is also important to establish data collection mechanisms to systematically monitor and eventually correct the situation. The expansion of the scope of haemovigilance should be considered to include monitoring unmet need through a structured reporting system (*43*).

CHAPTER 8

HAEMOVIGILANCE

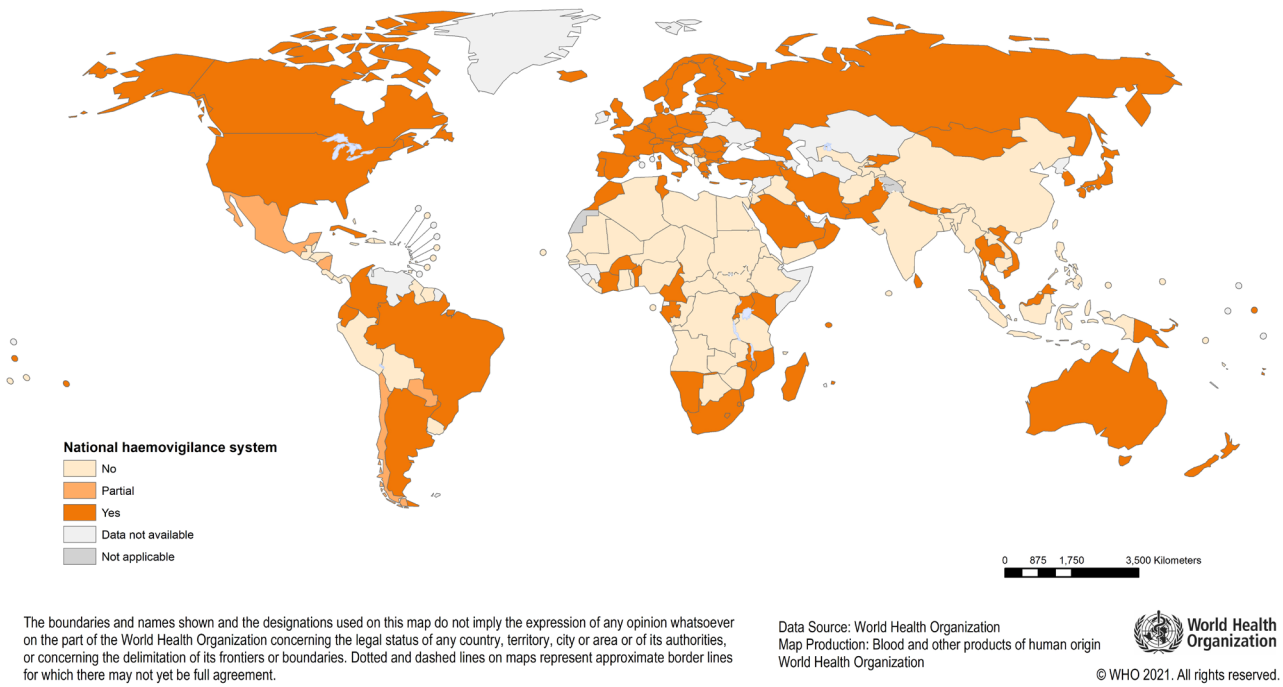
An important component of a blood safety system is the establishment of haemovigilance, which is a set of surveillance procedures covering the entire transfusion chain. It includes efforts to monitor and evaluate adverse events associated with the blood supply and transfusion service, and to use the findings to improve blood safety and transfusion outcomes. Haemovigilance programmes have drawn attention to the importance of many poorly documented and potentially preventable adverse events, including incorrect blood component transfused, transfusion-related acute lung injury and bacterial contamination of platelets. Well functioning haemovigilance systems indicate how safety should be improved, and also document the success of the various measures put in place to improve transfusion safety. In many developed countries, such as the countries of the European Union, there is a legal requirement to report serious adverse reactions and events to the regulatory agency. More recently, the scope of haemovigilance has been expanded to include adverse events in blood donors, thus helping to improve safety for the donor as well as the patient.

There is growing recognition of the need to identify and document adverse events associated with lack of availability of, or access to, blood transfusion to meet appropriate demand. Mechanisms need to be developed to facilitate the capture of information on such events, particularly as they are likely to have a disproportionate impact in low-income countries.

GDBS 2018 indicates that 49% (84 of 171) countries reported having a national haemovigilance system. Across WHO regions, Europe had the highest percentage, with 81% (34 of 42) of reporting countries having such a system. The percentages of countries that reported having national haemovigilance systems in other WHO regions were 52% (13 of 25) for the Western Pacific, 50% (nine of 18) for the Eastern Mediterranean, 40% (four of 10) for South-East Asia, 40% (17 of 43) for Africa, and 21% (seven[7] of 33) for the Americas (Figure 19).

[7] This does not include four countries in the Region of the Americas that answered the question as "partial".

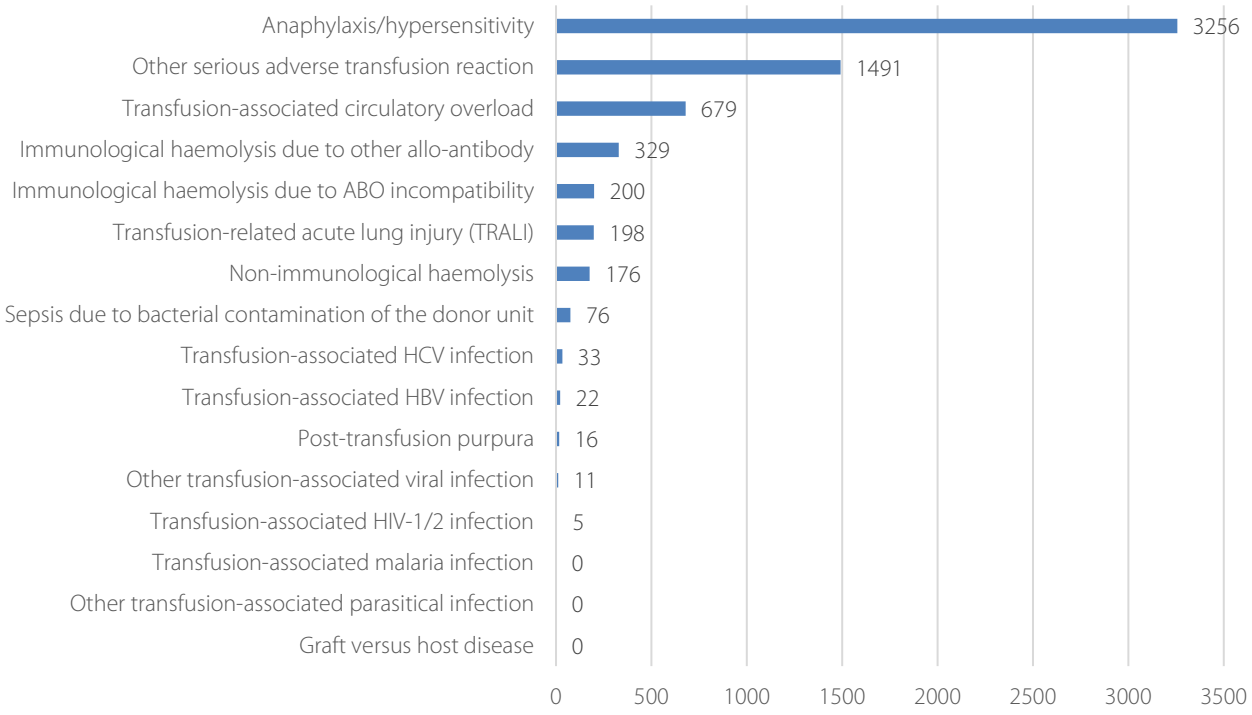
Figure 19. Distribution of countries reporting the existence of national haemovigilance systems, 2018



A total of 62 countries (five in Africa, seven in the Americas, three in South-East Asia, 31 in Europe, four in the Eastern Mediterranean, and 12 in the Western Pacific) reported haemovigilance data from clinical transfusion. Of those 62 countries, 37 were high-income countries, and there were no low-income countries. Haemovigilance data are important to low-income countries in order to guide distribution of their limited resources. However, qualified data are nearly always absent in these low-income countries.

The cases of serious adverse reaction reported are shown in Figure 20, by category. Anaphylaxis and hypersensitivity (3256 cases), other serious adverse reaction (1491), and transfusion-associated circulatory overload (679 cases) were the three main causes of serious adverse reaction, accounting for 50%, 23% and 10% of the total cases of serious adverse reaction reported, respectively. A total of 1491 cases were reported in the serious adverse reaction category "other". Many countries indicated that the main cases in this category were febrile non-haemolytic transfusion reactions. Since cases of febrile non-haemolytic transfusion reactions are not always serious, the "other" category may represent overreporting of serious adverse reaction cases.

Figure 20. Serious adverse transfusion reactions reported



Given that the total number of blood components issued or transfused in the 62 reporting countries was 53 034 608 units, the incidence of serious adverse reaction relative to the total number of blood components (whole blood + red blood cells + plasma + platelets + cryoprecipitate) issued (or transfused) can be calculated as 12.2 per 100 000 distributed blood components. The incidence of serious adverse reaction in these 62 countries by WHO region is presented in Table 31. The incidence of serious adverse reaction per 100 000 units of blood components transfused in the European Region, which reported both the largest number of case and denominator (components transfused or issued), was 9.7 per 100 000 units of distributed blood components. The incidence rates in the African Region, the Region of the Americas, the South-East Asia Region, the Eastern Mediterranean Region, and the Western Pacific Region were 14.7, 18.5, 51.2, 10.0, and 6.7 per 100 000 units of distributed blood components, respectively. Some of the reported adverse transfusion reactions might include both serious and non-serious transfusion reactions, accounting for higher serious adverse reaction rates in some countries. It may also be possible that not all countries followed the internationally recognized definitions promoted by WHO (*44*). Countries should establish haemovigilance programmes to improve the reporting of adverse events so that recommendations can be made to minimize them at national level. Internationally, the existence of comparable haemovigilance data from more countries will help countries to benchmark transfusion safety with each other and make continual improvement.

Table 31. Incidence of serious adverse reaction (per 100 000 units of components transfused) by WHO region

	Serious adverse reaction	Total number of components transfused/issued	Incidence
Africa (n=5)	214	1 457 280	14.7
Americas (n=7)	1 045	5 654 075	18.5
South-East Asia (n=3)	1 395	2 722 070	51.2
Europe (n=31)	2 634	27 238 559	9.7
Eastern Mediterranean (n=4)	409	4 070 358	10.0
Western Pacific (n=12)	795	11 892 266	6.7
Total (n=62)	6492	53 034 608	12.2

CHAPTER 9

PLASMA USED FOR FRACTIONATION AND THE PROVISION OF PLASMA-DERIVED MEDICINAL PRODUCTS

Plasma-derived medicinal products (PDMPs) are critical in the prevention and treatment of major morbidities associated with a wide range of inherited and acquired medical conditions and diseases. Nevertheless, supplies of essential PDMPs are inadequate in many low- and middle-income countries, leaving many patients with severe congenital and acquired disorders without adequate treatment (*45*). Globally, large volumes of the plasma used for the manufacturing of PDMPs are collected from compensated or paid donors in plasma collection centres operated by commercial plasma fractionators (*46*).

Ensuring a safe, secure, sufficient and ethically obtained supply of PDMPs is an important public health responsibility of every national government. 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.

A major factor limiting the global availability of PDMPs is an inadequate supply of plasma meeting internationally recognized standards for fractionation. The WHO guidance on "Increasing supplies of plasma-derived medicinal products in low- and middle-income countries through fractionation of domestic plasma" provides a strategic framework to assist Member States in increasing their volume of quality plasma for fractionation (*47*).

This global status report continues providing information on progress in countries in making quality-assured plasma available for fractionation of PDMPs to meet the treatment needs of patients.

Of 171 responding countries, 163 reported on the status of PDMPs in their countries. Fifty-six countries reported various arrangements for utilizing plasma collected in the country for fractionation. Of those, 34 countries reported that the plasma was fractionated through domestic or contract fractionation, 10 countries reported selling the plasma to the fractionator and purchasing PDMPs from the market (not necessarily produced through manufacture of the plasma originating in the countries), and 12 countries reported using both of those options. Of 163 countries reporting the status of PDMPs in their countries, 91 reported that all PDMPs were imported, while 16 countries reported that no PDMPs were used during the reporting period. Eight countries did not answer the question.

Data on the volume of plasma sent for fractionation by the blood services in 2018 were obtained from 45 countries, which reported the collection of a total of around 18.8 million litres of plasma for fractionation. A review of modern plasma fractionation by Burnouf (*48*) indicated that between 42 million and 45 million litres of human plasma are

fractionated annually in the world. The lower volume, derived from the WHO GDBS, arises from the fact that the GDBS questionnaire does not cover collection of information on global collection of source plasma from plasma collection centres operated by commercial plasma fractionators.

An analysis by collection method (recovered from whole blood or by apheresis) showed that 31% of the plasma sent for fractionation by blood establishments was from recovered plasma. In Europe, 3.5 million litres of recovered plasma were fractionated, accounting for 52% of the fractionated plasma in the region. In the Western Pacific Region, around 1.3 million litres of recovered plasma were fractionated, accounting for 12% of the total volume of fractionated plasma reported in the region, with the remaining 88% (9.6 million litres) collected through apheresis (Table 32). In comparison with the previous report based on 2013 data (*49*), two countries from the Eastern Mediterranean Region reported a total volume of 346 319 litres, an increase from the total volume of 245 381 litres reported for 2013. Seven countries in the Region of the Americas reported a total volume of 482 036 litres, an increase from 303 000 for 2013.

Table 32. Volume (litres) of plasma for fractionation by collection method and WHO region, 2018

Region	Recovered plasma	Apheresis plasma	Total	% of recovered plasma
Africa (n=2)	306 186	5 760	311 946	98
Americas (n=7)	474 004	8 032	482036	98
South-East Asia (n=2)	126 600	6 819	133 419	95
Europe (n=25)	3 469 402	3 160 695	6 629 997	52
Eastern Mediterranean (n=2)	186 277	160 042	346 319	54
Western Pacific (n=7)	1 279 552	9 588 860	10 868 412	12
Total (n=45)	5 842 021	12 930 108	18 772 129	31

The volume of plasma for fractionation (and processing for PDMPs) per 1000 population varied considerably between countries, ranging from 0.1 to 52.6 litres, with a median of 5.2 litres (IQR 1.4–9.6).

Forty-two countries responded that at least one of four products – albumin, intravenous immunoglobulin (IVIg), factor VIII (excluding recombinant products), and factor IX – were manufactured by fractionation within the country or through contract fractionation. Twenty-three countries reported that all four products were manufactured by fractionation within the country or through contract fractionation, while seven countries reported that three products – albumin, IVIg and factor VIII – and seven countries reported that two products – albumin and IVIg – were thus manufactured. Four countries reported that only albumin and one country reported that only IVIg were manufactured in such a way.

Twenty-four countries provided information on the proportion of products supplied through fractionation (domestic or contract fractionation) of plasma collected in the country (self-reliance rate). Six countries – Australia, Czechia, Denmark, Latvia, New Zealand, and Republic of Moldova – reported that 100% of albumin was provided by fractionation of the plasma collected in the countries, while another eight countries reported that more than 60% of albumin was provided in such a way – Argentina (90%), Mexico (85%), South Africa (80%), Singapore (74%), Italy (72%), Spain (70%), Republic of Korea (69%), and Japan (63%). Five countries – Czechia, Denmark, Latvia, Morocco, and Singapore – reported that 100% of plasma-derived factor VIII products were provided by fractionation of the plasma collected in the countries, while Japan, New Zealand and South Africa reported 95%, 88% and 80% of factor VIII products were provided in such a way, respectively. Six countries – Czechia, Japan, Latvia, Republic of Korea, Slovenia and South Africa – reported 100% of IVIg was provided by fractionation of the plasma collected in the countries. Annex 7 provides information on the proportion of supplies of different PDMPs manufactured through fractionation (domestic or contract fractionation) of the plasma collected in the country.

CHAPTER 10

DISCUSSION AND CONCLUSIONS

This document is primarily based on data collected for 2018, as reported by 171 of 194 Member States of the WHO GDBS. This database provides information on the current global status of major aspects of blood banking and transfusion practices, namely blood availability, blood safety and, to a lesser extent, clinical transfusion practice. Data have been analysed according to reporting countries' geographical location (region) as well as the level of economic development as defined by the World Bank. Although encouraging progress has been seen compared with survey data from earlier time periods in some areas, significant challenges still remain, especially for resource-poor countries.

One area that deserves special attention is the lingering lack of specific legislation covering the safety and quality of blood and blood products for transfusion in many countries. While 95% of European countries reported having such legislation, the proportions were only 51% in Africa, 52% in the Americas, and 56% in the Western Pacific. Governance through a system of inspection and licensing is important for national blood availability and safety. Only 59% of countries had a system of regular inspection and licensing by the national regulatory agency, and only 33% of countries had an accreditation system for blood transfusion services. Building up a system for inspection and licensing should be a priority for countries that do not currently have such programmes. Committed government support in funding, legislation and regulation of national blood services will be fundamental for achieving the progress needed to reach the goal of providing safe and sufficient blood to all patients who need blood transfusion. In this aspect, useful lessons could be learned from the experience in the European Union in ensuring sufficiency and access to safe blood products through implementing a harmonized legislative and regulatory framework across all Member States (50).

In addition to the above overall concerns, specific challenges related to blood availability, blood safety and clinical transfusion practice are discussed in the following subsections.

10.1 Blood availability

The true need for blood products is difficult to measure directly and can be influenced by many factors. Using population blood donation rate as a proxy measure for blood availability, higher-income countries clearly have more blood products available for transfusion. The blood donation rate per 1000 population varies from 0.6 to 53. High-income countries collected 40% of the global donations while their population made up 16% of the global population. However, population-based rates do not take into account availability and accessibility of blood products throughout the country

and significant variability may exist, for example between urban and rural settings. Despite progress that has been made, the transfusion rates of blood components in developing countries are much lower than in developed countries.

Correlated with the disparity of blood availability is the funding level for blood centres. In general, funding per collection was higher in more economically developed countries. Strategies to improve blood collection and distribution in less economically developed countries need to be developed and effectively implemented.

10.2 Blood safety

The starting point of a safe blood supply is a stable population of regular voluntary non-remunerated blood donors. Globally, 82.8% of whole blood donations were collected from voluntary non-remunerated blood donors. This proportion was 95.6% for high-income countries and 62.8% for low-income countries.

Repeat donations carry the least risk of infection. While the whole blood donation from repeat donors ranged from less than 0.1% to 100%, the median rate was 90% for European countries versus 20% to 56% for countries in the other five WHO regions.

Although estimates of residual risk levels for TTIs are not readily available, prevalence rates of TTI markers are correlated with the level of residual risk. For HIV, HBV, HCV and syphilis markers, the prevalence rates for all four infections were lowest in high-income countries and highest in low-income countries.

The higher prevalence rates of TTI markers in low-income countries should be reduced through greater efforts to increase blood collections from more repeat voluntary non-remunerated donors in order to reduce the reliance on family or replacement and paid blood donations.

Systematic screening and testing of donations for TTI markers is an important step in reducing the risk of TTIs. The majority of countries have national policies for screening for major TTIs (HIV, HBV, HCV and syphilis), though there are variations in details of screening policy and screening for additional TTIs (such as Chagas disease, HTLV, malaria and West Nile fever), with a major reason being regional differences in infectious disease epidemiology. The effectiveness of TTI screening can only be guaranteed with well designed and implemented quality assurance systems.

Two major components of a basic quality system are the consistent use of standard operating procedures and participation in external quality assessment. In low-income countries, only 76.2% of donations were screened following basic quality-assured procedures. Investing in establishing quality assurance programmes will be key to improving blood safety globally.

10.3 Clinical transfusion practice

Differences in clinical transfusion patterns between resource-rich and resource-poor countries were reflected in many aspects of transfusion practice. Most blood transfusions in low-income countries are still used for childbirth-related complications and severe childhood anaemia, while in high-income countries transfusions are mostly given to support patients for surgery, critical illness and cancer treatment. The use of fresh frozen plasma is significantly less common in low-income countries than in high-income countries; the same applies to the use of platelet transfusions. Comprehensive data on patterns of blood use in all countries, but specifically low-income countries, is needed to understand issues of demand and supply. One major setting of uncertainty is blood use in acute injury and trauma in low- and middle-income countries, as highlighted in a recent systematic review (*51*).

Safe and effective clinical transfusion practices can be improved by hospital transfusion committees, providing critical local oversight of the transfusion process. GDBS data reported by 92 countries indicated that 48% of hospitals where transfusion was performed reported having a transfusion committee (62% in high-income countries and 25% in low-income countries). The proportion of hospitals that have a reporting system for adverse transfusion reactions was higher for resource-rich countries and lower for resource-poor countries. National haemovigilance programmes have increasingly been implemented, first for systematically monitoring the safety of the entire transfusion process and more recently also for measuring transfusion outcome. In 2018, 81% of countries in Europe had such a system, while the percentage rates were lower for all other regions.

More research to improve the implementation of appropriate evidence-based utilization of blood and the use of alternatives to transfusion will benefit the entire global transfusion community. Even though many resource-poor countries are still focusing on fundamental challenges, including blood availability and safety, security of blood supply remains an important issue for all blood services and operators. Appropriate utilization of blood supported by patient blood management programmes will help to decrease unnecessary blood transfusions and reduce transfusion risk, and improve patient care and outcomes (*52*). Strategies must address fundamental concerns about lack of availability of blood, for example to treat severe life-threatening anaemia in children with malaria or to manage major blood loss in trauma and postpartum bleeding. This applies for all countries and especially low-resource country settings.

10.4 Data

The existence of a data collection and reporting system is an important element of a well managed, nationally coordinated blood transfusion programme. Having adequate national data on blood availability and safety allows a country 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 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, including patterns of use by indication and department, forms the basis for monitoring clinical transfusion practice and provides critical performance measures to influence desirable changes in the prescription and administration of blood and to reduce variations in transfusion practice.
- Information on lack of availability of blood to meet clinically justified need is not routinely collected but is an important measure of the effectiveness of the blood transfusion service. Countries providing partial data should consider instituting standardized systems for data collection and management at national level.
- National blood transfusion services need to provide greater structure and support for information management systems.
- Hospitals need to establish mechanisms for improving data collection for the traceability and utilization of blood and for haemovigilance.

10.5 Conclusions

The issue of adequate blood availability lies at the centre of the various challenges faced by the global blood bank community. With economic development, the currently low- and middle-income countries are expected to experience growth of their national health care systems. Advances in health care – including increased accessibility to health

care for the population and greater availability of treatment options – is likely to bring increased demand for blood transfusion support. An inadequate blood supply can impede the progress of national health care. Different factors will be relevant to explain potential or actual shortages of blood donations in countries, for example due to lack of repeat donations from voluntary non-remunerated donors.

In many resource-poor countries, inadequacy of blood supply often coexists with inadequate funding and less vigorous government legislation and regulation. Safe blood chains depend on an effective TTI screening system with strong quality systems, and effective clinical adverse reaction monitoring mechanisms or national haemovigilance systems. The goal of achieving an adequate and secure blood supply chain is of great significance, not only for the blood banking and transfusion medicine community but also for the overall public health of a nation.

In conclusion, the WHO survey continues to show significant variations in the availability, safety and use of blood and blood components between resource-rich and resource-poor countries. Despite progress in some areas there are still challenges, especially for resource-poor countries, in reaching the goal of providing sufficient, secure and safe blood for all people who need blood transfusion. The following measures will be vital to achieving that aim.

- Improving funding support for blood services, establishing specific legislation, and developing national programmes for providing effective governance of blood collection services will be critical in order to continuously improve global blood availability and safety.
- Building quality assurance programmes for TTI screening of donations will help to reduce residual TTI risks.
- Improving the safety and efficacy of clinical transfusions through the work of national haemovigilance systems and hospital transfusion committees should be a priority for all countries, especially resource-poor countries.
- Investing in improved systems for collecting data on hospital-based blood transfusion, on transfusion safety and on blood utilization will in turn establish the foundations for building an evidence-based approach to safe transfusion medicine practices in the future.

CHAPTER 11

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.

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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 (43/47)

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

Data for Equatorial Guinea, Guinea, Guinea-Bissau and Sierra Leone were not included.

WHO Region of the Americas (33/35)

Argentina, Bahamas, Barbados, Belize, Bolivia (Plurinational State of), Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, 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 for Antigua and Barbuda, and Grenada were not included.

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 report: Supply of blood for transfusion in Latin American and Caribbean countries 2016–2017 (available at https://iris.paho.org/bitstream/handle/10665.2/52966/9789275121719_eng.pdf).

WHO South-East Asia Region (10/11)

Bangladesh, Bhutan, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Timor-Leste.

Data for Democratic People's Republic of Korea were not included.

WHO European Region (42/53)

Albania, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Luxembourg, Malta, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkey, United Kingdom of Great Britain and Northern Ireland, Uzbekistan.

Data for Andorra, Azerbaijan, Belarus, Georgia, Hungary, Ireland, Lithuania, Monaco, San Marino, Turkmenistan and Ukraine were not included.

WHO Eastern Mediterranean Region (18/21)

Afghanistan, Bahrain, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Saudi Arabia, Qatar, Sudan, Tunisia, United Arab Emirates, Yemen.
Data for Djibouti, Somalia and Syrian Arab Republic were not included.

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, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Tonga, Vanuatu, Viet Nam.

Data for Nauru and Tuvalu were not included.

Population data and income group classifications

Data reported for population were extracted from World population prospects: the 2019 revision. New York: Population Division, Department of Economic and Social Affairs, United Nations Secretariat; 2019.

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 (2019). Washington (DC): World Bank; 2019.

Partial data

Thirty-nine countries provided partial data with estimated percentages of the national number of donations covered by the report ranging from 15% to 99%. Of those 39 countries, 19 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: Blood safety and availability (updated June 2020) 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.

Explanatory note for Table 7, Table 8 and Figure 10

Data from the following countries were included in the trend analysis as shown in Table 7, Table 8 and Figure 10.

Africa (35 countries): Algeria, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Comoros, Congo, Côte d'Ivoire, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, South Africa, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

Americas (27 countries and excluding countries in North America): Argentina, Bahamas, Barbados, Belize, Bolivia (Plurinational State of), Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, 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.

South-East Asia (six countries): Bangladesh, Bhutan, Indonesia, Nepal, Sri Lanka, Thailand.

Europe (27 countries): Albania, Armenia, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Iceland, Italy, Kyrgyzstan, Luxembourg, Montenegro, North Macedonia, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Slovakia, Slovenia, Sweden, Switzerland, Tajikistan.

Eastern Mediterranean (10 countries): Afghanistan, Bahrain, Egypt, Iran (Islamic Republic of), Jordan, Morocco, Oman, Qatar, Tunisia, United Arab Emirates.

Western Pacific (14 countries): Brunei Darussalam, Cambodia, China, Cook Islands, Fiji, Japan, Kiribati, Lao People's Democratic Republic, Micronesia (Federated States of), Mongolia, New Zealand, Papua New Guinea, Republic of Korea, Singapore.

Assigning values for missing data for trend analysis

When data in specific years were missing but data immediately before or after the year were available, the following methods were used to assign a value to the missing data (in sequence of preference): (1) the average of the numbers reported in the years immediately before and after the specific year; (2) data immediately before the specific year; or (3) data immediately after the specific year. However, data available in one specific year should not be used to assign values for both immediately before and after that year. In such a case, the country should be excluded in the trend analysis.

Annex 2. Blood centres and data coverage 2014–2018[1]

… Not reported/not available.
— No response.
* Blank cell (in the last column): 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	2014	1	50	51	1	253	254	
	2015	1	50	51	1	50	51	
	2017	1	101	102	1	288	289	
	2018	1	288	289	1	101	102	
Albania	2014	1	30	31	1	30	31	
	2015	1	31	32	1	31	32	
	2017	—	—	—	—	—	—	—
	2018	1	31	32	1	31	32	
Algeria	2014	7	199	206	7	199	206	
	2015	7	199	206	7	199	206	
	2017	—	—	—	—	—	—	—
	2018				20	209	229	
Andorra	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Angola	2014	—	—	—	—	—	—	
	2015	—	—	—	—	—	—	
	2017	—	—	—	—	—	—	—
	2018				0	164	164	
Antigua and Barbuda	2014	—	—	—	—	—	—	—
	2015	—	—	—		—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Argentina	2014	45	209	254	38	175	213	95
	2015	45	209	254	38	175	213	95
	2016	45	209	254	38	175	213	95
	2017	38	149	187	34	129	163	95
Armenia	2014	6	15	21	6	15	21	
	2015	6	15	21	6	15	21	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Australia	2014[2]	82	0	82	82	0	82	
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—

[1] The surveys to collect Global Database on Blood Safety (GDBS) data from Latin America and Caribbean Countries and from countries in other WHO Regions were administered separately. In this report, available key GDBS data from the last four years reported by each Member State were listed in the annexes. Due to the different schedules to administer the surveys, these four years were slightly different for countries covered by the two surveys: 2014, 2015, 2016 and 2017 for Latin America and Caribbean Countries; 2014, 2015, 2017 and 2018 for other countries.

Important notes provided by the Member States were kept in the annexes as footnotes. These notes provided further information on how blood transfusion services/the supply of PDMP were organized and managed in the Member States. They sometimes also provided comments on the coverage of the data that was reported to GDBS.

[2] 2013 data.

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	
Austria	2014	23	8	31	23	7	30	97
	2015	23	8	31	23	8	31	
	2017	23	8	31	22	8	29	93.6
	2018	23	8	31	23	8	31	
Azerbaijan	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Bahamas	2014	0	3	3		0	3	3
	2015	—	—	—	—	—	—	—
	2016	0	3	3		0	3	3
	2017	0	3	3		0	3	3
Bahrain	2014	0	3	3	0	1	1	94
	2015	0	3	3	0	1	1	94
	2017	3	3	3	1	1	1	93
	2018	0	3	3		1	1	90
Bangladesh	2014	108	219	327	25	219	244	84
	2015	108	219	327	25	219	244	84
	2017	39	198	237	3	69	72	88
	2018	54	288	342	3	87	90	90
Barbados	2014	0	1	1	0	1	1	
	2015	—	—	—	—	—	—	—
	2016	0	1	1	0	1	1	
	2017	0	1	1	0	1	1	
Belarus	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Belgium	2014	4	2	6	4	2	6	
	2015	4	2	6	4	2	6	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Belize	2014	1	6	7	1	6	7	
	2015	1	6	7	1	6	7	
	2016	1	6	7	1	6	7	
	2017	1	6	7	1	6	7	
Benin	2014	6	34	40	6	34	40	—
	2015	6	40	46	6	40	46	—
	2017	—	—	—	—	—	—	—
	2018				6	34	40	
Bhutan	2014	0	27	27	0	27	27	
	2015	0	27	27	0	27	27	
	2017	0	27	27	0	27	27	
	2018	0	27	27	0	15	15	90

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	
Bolivia	2014	11	7	18	11	7	18	
	2015	11	7	18	11	7	18	
	2016	11	7	18	11	7	18	
	2017	12	5	17	12	5	17	
Bosnia and Herzegovina	2014	1	17	18	1	17	18	
	2015	1	17	18	1	17	18	
	2017	—	—	—	—	—	—	—
	2018	1	17	18	1	17	18	
Botswana[3]	2014	2	0	2	2	0	2	
	2015	2	0	2	2	0	2	
	2017	2	0	2	2	0	2	
	2018				2	0	2	
Brazil	2014	—	—	—	—	—	—	—
	2015	…	…	544	…	…	544	
	2016	…	…	3 328	…	…	..	
	2017	…	…	3 071	…	…	…	
Brunei Darussalam[4]	2014	0	5	5	0	4	4	80
	2015	0	5	5	0	4	4	80
	2017	0	5	5	0	4	4	90
	2018	0	5	5	0	4	4	90
Bulgaria	2014	6	23	29	6	23	29	
	2015	5	24	29	5	24	29	
	2017	—	—	—	—	—	—	—
	2018	6	23	29	6	23	29	
Burkina Faso	2014	4	39	43	4	39	43	
	2015	4	58	62	4	58	62	
	2017	4	39	43	4	39	43	
	2018				4	39	43	
Burundi	2014	—	—	—	—	—	—	—
	2015	5	2	7	5	2	7	
	2017	—	—	—	—	—	—	—
	2018				5	3	8	
Cabo Verde	2014	0	6	6		0	6	
	2015	0	6	6	0	6	6	
	2017	—	—	—	—	—	—	—
	2018				0	6	6	
Cambodia	2014	1	21	22	1	21	22	80
	2015	1	21	22	1	21	22	80
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Cameroon	2014	0	…	…	0	15	15	
	2015	…	…	…	0	37	37	
	2017	…	…	…	0	49	49	
	2018				0	58	58	

[3] There are two blood centres. Each of the two centres are linked to two collection sites (four blood collection sites in total).

[4] Reported data did not include the data of one hospital-based blood centre (which is a private hospital).

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	
Canada[5]	2014	2	0	2	1	0	1	80
	2015	2	0	2	1	0	1	80
	2017	2	0	2	1	0	1	80
	2018	—	—	—	—	—	—	—
Central African Republic	2014	1	32	33	1	0	1	80
	2015	1	34	35	1	0	1	80
	2017	—	—	—	—	—	—	—
	2018				1	0	1	
Chad	2014	1	58	59	1	58	59	
	2015	1	64	65	1	64	65	
	2017	—	—	—	—	—	—	—
	2018				1	76	77	
Chile	2014	—	—	—	—	—	—	—
	2015	4	74	78	4	74	78	80[6]
	2016	4	74	78	4	74	78	80
	2017	4	74	78	4	74	78	80
China	2014	452	0	452	452	0	452	
	2015	452	0	452	452	0	452	
	2017	452	0	452	452	0	452	
	2018	452	0	452	452	0	452	
Colombia	2014	…	…	…	…	…	…	
	2015	24	59	83	24	59	83	92.4
	2016	25	57	82	25	57	82	98.5
	2017	23	58	81	23	58	81	99.2
Comoros	2014	0	5	5	0	5	5	
	2015	0	5	5	0	5	5	
	2017	—	—	—	—	—	—	—
	2018				1	5	6	
Congo	2014	4	28	32	4	28	32	90
	2015	4	34	38	4	34	38	92
	2017	0	29	29	0	29	29	
	2018				2	34	36	
Cook Islands	2014	0	1	1	0	1	1	
	2015	—	—	—	—	—	—	—
	2017	0	1	1	0	1	1	
	2018	—	—	—	—	—	—	—
Costa Rica	2014	2	32	34	2	31	33	
	2015	2	32	34	2	32	34	
	2016	2	33	35	2	33	35	
	2017	2	33	35	2	33	35	
Côte D'Ivoire	2014	27	0	27	27	0	27	
	2015	27	0	27	27	0	27	
	2017	22	0	22	22	0	22	
	2018				27	24	51	

[5] Canada has two blood suppliers. Hema-Quebec is responsible for the province of Quebec. Canadian Blood Services is responsible for all other provinces and territories.

[6] 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	
Croatia	2014	1	7	8	1	7	8	
	2015	1	7	8	1	7	8	
	2017	1	6	7	1	6	7	
	2018	1	6	7	1	6	7	
Cuba	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2016	…	…	…	…		…	
	2017	…	…	…	…		…	
Cyprus	2014	1	0	1	1	0	1	52.2
	2015	1	0	1	1	0	1	51.5[7]
	2017	—	—	—	—	—	—	—
	2018	4	0	4	4	0	4	
Czechia	2014	8	65	73	8	65	73	
	2015	8	65	73	8	65	73	
	2017	—	—	—	—	—	—	—
	2018	2	66	68	2	66	68	[8]
Democratic People's Republic of Korea	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Democratic Republic of the Congo	2014	15	875	890	15	875	890	83.7
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018				26	850	876	
Denmark	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	0	5	5	0	5	5	[9]
	2018	0	5	5	0	5	5	
Djibouti	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Dominica	2014	0	1	1	0	1	1	
	2015	0	1	1	0	1	1	
	2016	0	1	1	0	1	1	
	2017	0	1	1	0	1	1	
Dominican Republic	2014	25	17	42	25	17	42	
	2015	37	34	71	25	17	42	
	2016	37	34	71	26	15	41	
	2017	37	34	71	10	18	28	

[7] This report covers data from only 1 centre (The Cyprus Blood Establishment), which until 2016 served only the Nicosia District. The other districts (Limassol, Larnaca, Paphos and Famagusta) were served by Blood Banks that belong to the corresponding public hospitals.

[8] Stand-alone blood centres that only collect plasma for fractionation are not included. There are 9 such centres.

[9] The Danish health care system is organised in 5 regions and each region has its own blood centre. The blood centres are characterized by a high level of collaboration. Blood centres are obliged to report to the Danish Patient Safety Authority annually on their activities.

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	
Ecuador	2014	…	…	…	…	…	…	….
	2015	7	15	22	7	15	22	
	2016	8	13	21	8	13	21	
	2017	8	12	20	8	12	20	
Egypt	2014	—	—	—	—	—	—	—
	2015	24	268	292	24	0	24	35
	2017[10]	24	…	…	24	0	24	33
	2018	28	…	…	28	0	28	33
El Salvador	2014	1	28	29	1	28	29	
	2015	1	28	29	1	28	29	92.9
	2016	1	18	19	1	18	19	
	2017	1	18	19	1	18	19	
Equatorial Guinea	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Eritrea	2014	1	0	1	1	0	1	95
	2015	1	0	1	1	0	1	95
	2017	—	—	—	—	—	—	—
	2018				1	0	1	
Estonia	2014	0	4	4	0	4	4	
	2015	0	4	4	0	4	4	
	2017	0	4	4	0	4	4	
	2018	0	4	4	0	4	4	
Eswatini	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	1	0	1	1	0	1	
	2018				1	0	1	
Ethiopia	2014	25	0	25	25	0	25	
	2015	25	0	25	25	0	25	
	2017	25	0	25	25	0	25	
	2018				42	0	42	
Fiji	2014	0	3	3	0	3	3	
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	0	3	3	0	3	3	
Finland	2014	1	0	1	1	0	1	
	2015	1	0	1	1	0	1	
	2017	1	0	1	1	0	1	
	2018	1	0	1	1	0	1	
France[11]	2014	18	0	18	18	0	18	
	2015	18	0	18	18	0	18	
	2017	—	—	—	—	—	—	—
	2018	18	0	18	18	0	18	

[10] 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.

[11] The French Blood Establishment is composed of 17 regional facilities. There is also an army blood centre (CTSA).

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	
Gabon	2014	2	2	2	0	0	0	60
	2015	1	1	0	1	1	2	81
	2017	1	8	9	1		1	70[12]
	2018				1	0	1	
Gambia	2014	0	12	12	0	11	11	
	2015	—	—	—	—	—	—	
	2017	—	—	—	—	—	—	
	2018				0	10	10	
Georgia	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Germany	2014	19	51	70	19	51	70	
	2015	19	51	70	19	51	70	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Ghana	2014	1	103	104	1	103	104	92[13]
	2015	1	103	104	1	103	104	96
	2017	1	159	160	1	159	160	97
	2018				1	2	3	
Greece	2014	4	97	101	4	97	101	
	2015	4	97	101	4	97	101	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Grenada	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Guatemala	2014	13	48	61	13	48	61	89
	2015	13	57	70	13	57	70	95
	2016	14	58	72	14	48	62	97
	2017	16	58	74	16	48	64	97.9
Guinea	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Guinea-Bissau	2014							
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Guyana	2014	—	—	—	—	—	—	—
	2015	1	0	1	1	0	1	
	2016	1	0	1	1	0	1	
	2017	1	0	1	1	0	1	

[12] Data only cover the capital.

[13] Some hospital-based blood centres did not provide complete data. It is estimated the collections in this centres account for 8% 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	
Haiti	2014	9	6	15	9	6	15	95
	2015	1	0	1	1	0	1	95
	2016	1	0	1	1	0	1	95[14]
	2017	1	0	1	1	0	1	95
Honduras	2014	—	—	—	—	—	—	—
	2015	2	15	17	2	12	17	97
	2016	2	14	16	2	14	16	
	2017	2	16	18	2	16	18	
Hungary	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Iceland	2014	0	1	1	0	1	1	
	2015	0	1	1	0	1	1	
	2017	0	1	1	0	1	1	
	2018	0	1	1	0	1	1	
India	2014	…	…	2 760	…	…	2 760	
	2015	…	…	…	…	…	…	…
	2017	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…
Indonesia	2014	297	172	379	183	117	300	92
	2015	221	193	414	180	124	304	79.7
	2017	222	198	420	201	113	314	63.7
	2018	222	198	420	212	159	371	78.2
Iran (Islamic Republic of)	2014	91	0	91	91	0	91	
	2015	91	0	91	91	0	91	
	2017	91	0	91	91	0	91	
	2018	91	0	91	91	0	91	
Iraq	2014	—	—	—	—	—	—	—
	2015	18	21	39	18	21	39	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Ireland	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	
Israel	2014	1	7	8	1	0	1	
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Italy	2014	0	287	287	0	287	287	
	2015	0	288	288	0	288	288	
	2017	0	278	278	0	278	278	
	2018	0	278	278	0	278	278	

[14] Some blood units screened by National Blood Centre are collected by MSF.

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	
Jamaica	2014	—	—	—	—	—	—	—
	2015	1	9	10	1	9	10	
	2016	2	8	10	2	8	10	
	2017	1	15	16	1	15	16	
Japan	2014	54	0	54	54	0	54	
	2015	54	0	54	54	0	54	
	2017	54	0	54	54	0	54	
	2018	—	—	—	—	—	—	—
Jordan	2014	17	25	42	4	25	29	58
	2015	17	26	43	4	26	30	56
	2017	13	31	44	2	0	2	55[15]
	2018	4	37	41	1	0	1	…[15]
Kazakhstan	2014	18	0	18	18	0	18	
	2015	18	0	18	18	0	18	
	2017	—	—	—	—	—	—	—
	2018	18	0	18	18	0	18	
Kenya	2014	6	12	18	6	12	18	45.9
	2015	6	12	18	6	12	18	38.8
	2017	33	0	33	33	0	33	70
	2018				27	0	27	
Kiribati	2014	0	3	3	0	3	3	75
	2015	0	3	3	0	1	1	75
	2017	0	3	3	0	3	3	
	2018	0	3	3	0	1	1	75
Kuwait	2014	—	—	—	—	—	—	—
	2015	1	0	1	1	0	1	
	2017	1	0	1	1	0	1	
	2018	1	0	1	1	0	1	
Kyrgyzstan	2014	6	39	45	6	39	45	
	2015	6	39	45	6	39	45	
	2017	—	—	—	—	—	—	—
	2018	6	39	45	6	39	45	
Lao People's Democratic Republic	2014	13	3	16	14	3	17	
	2015	13	3	16	13	3	16	
	2017	15	3	18	15	3	18	
	2018	18	0	18	18	0	18	
Latvia	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	1	7	8	1	7	8	
	2018	1	6	7	1	6	7	
Lebanon	2014	13	100	113	—	—	—	—
	2015	13	100	113	13	100	113	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—

[15] Data only cover the blood bank directorate.

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	
Lesotho	2014	3	0	3	3	0	3	
	2015	3	0	3	3	0	3	
	2017	4	0	4	4	0	4	
	2018				2	2	4	
Liberia	2014	2	38	40	2	38	40	85
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018				2	38	40	
Libya	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	10	53	63	10	53	63	93.6
	2018	10	48	58	10	48	58	92
Lithuania	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Luxembourg	2014	1	0	1	1	0	1	
	2015	1	0	1	1	0	1	
	2017	—	—	—	—	—	—	—
	2018	1	0	1	1	0	1	
Madagascar	2014	1	47	48	0	47	47	95
	2015	1	48	49	0	44	44	91.7
	2017	3	61	64	0	50	50	82
	2018				5	70	75	
Malawi	2014	4	67	71	4	67	71	…
	2015	4	60	64	4	60	64	70[16]
	2017	4	0	4	4	0	4	69.9[17]
	2018				4	67	71	
Malaysia	2014	1	114	115	1	114	115	90
	2015	1	116	117	1	116	117	90[18]
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Maldives	2014	1	75	76	1	11	12	87[19]
	2015	1	21	22	1	20	21	95
	2017	—	—	—	—	—	—	—
	2018	1	21	22	1	20	21	95
Mali	2014	1	6	7	1	6	7	98
	2015	1	7	8	1	7	8	98
	2017	1	0	1	1	0	1	[20]
	2018				1	13	14	

[16] Malawi Blood Transfusion Service provide about 70% of blood supplies. The remainder is provided by hospitals.

[17] The total number of blood units collected in the Malawi is reported in the Quarterly Integrated HIV Program Reports published by the Ministry of Health. A total of 87,166 units of blood were collected nationally, of which 60,938 units were collected by the Malawi Blood Transfusion Service.

[18] Excluding collection of blood donation in two public hospital universities, private health care blood bank and army hospital blood bank. This report covers 100% of blood donation facilities under Ministry of Health (MOH).

[19] Approximately 10651 blood units were collected in the main blood centres across the country and approximately 1500 blood units were collected in small blood transfusion centres.

[20] Mali has a National Blood Transfusion Center (CNTS) based in Bamako (capital). Blood collection, processing and distribution activities are carried out through seven regional hospitals. CNTS does not have all the data on blood transfusion activities for the whole country. The data reported only covers the CNTS in Bamako.

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	
Malta	2014	1	0	1	1	0	0	—
	2015	1	0	1	1	0	1	
	2017	1	0	1	1	0	1	
	2018	—	—	—	—	—	—	—
Marshall Islands	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	0	2	2	0	1	1	80[21]
Mauritania	2014	1	13	14	1	13	14	
	2015	1	13	14	1	0	1	85
	2017	—	—	—	—	—	—	—
	2018				1	13	14	
Mauritius	2014	1	0	1	1	0	1	
	2015	1	0	1	1	0	1	
	2017	—	—	—	—	—	—	—
	2018				1	0	1	
Mexico	2014	—	—	—	—	—	—	—
	2015	44	528	572	44	528	572	
	2016	163	353	516	163	353	516	
	2017	163	353	516	163	353	516	
Micronesia (Federated States of)	2014	0	5	5	0	4	4	95
	2015	0	5	5	0	4	4	95
	2017	0	5	5	0	4	4	90
	2018	5	5	5	4	4	4	95
Monaco	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Mongolia	2014	1	25	26	1	25	26	
	2015	1	25	26	1	25	26	
	2017	1	26	27	1	26	27	
	2018	1	26	27	1	26	27	
Montenegro	2014	9	0	9	9	0	9	
	2015	9	0	9	9	0	9	
	2017	—	—	—	—	—	—	—
	2018	1	0	1	1	0	1	
Morocco	2014	2	17	19	2	17	19	
	2015	2	14	16	2	14	16	
	2017	—	—	—	—	—	—	—
	2018	6	11	17	6	11	17	
Mozambique	2014	1	154	155	1	154	155	
	2015	1	154	155	1	154	155	
	2017	3	160	163	3	160	163	
	2018				1	162	163	

[21] There are 2 hospital-based blood banks: 1 in Ebey and 1 in Majuro (capital). It is estimated that blood collections in Majuro account for 80% of the national collections.

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	
Myanmar	2014	1	333	334	1	144	145	82
	2015	1	333	334	1	153	154	83
	2017	1	386	387	1	150	151	95[22]
	2018	1	391	392	1	155	156	95
Namibia	2014	—	—	—	—	—	—	—
	2015	1	0	1	1	0	1	
	2017	1	0	1	1	0	1	
	2018				1	0	1	
Nauru	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Nepal	2014	64	36	100	64	36	100	
	2015	27	73	100	27	73	100	
	2017	70	38	108	70	38	108	
	2018	70	38	108	70	38	108	
Netherlands	2014	—	—	—	—	—	—	—
	2015	1	0	1	1	0	1	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
New Zealand	2014	6	0	6	6	0	6	
	2015	6	0	6	6	0	6	
	2017	6	0	6	6	0	6	
	2018	6	0	6	6	0	6	
Nicaragua	2014	—	—	—	—	—	—	—
	2015	2	0	2	2	0	2	
	2016	2	0	2	2	0	2	
	2017	2	0	2	2	0	2	
Niger	2014	5	0	5	5	0	5	
	2015	5	1	6	5	1	6	
	2017	—	—	—	—	—	—	—
	2018				5	1	6	
Nigeria	2014	…	…	..	18	25	43	5
	2015	…	…	…	18	25	43	10
	2017	…	…	..	18	25	43	5
	2018	…	…	…	18	46	64	
Niue	2014	0	1	1	0	1	1	
	2015	0	1	1	0	1	1	
	2017	—	—	—	—	—	—	—
	2018	0	1	1	0	1	1	
North Macedonia	2014	1	0	1	1	0	1	
	2015	21	0	21	21	0	21	99
	2017	0	0	21	0	0	21	…[23]
	2018			21			21	100

[22] The services that are not covered by the report are small, which use less than 20 units per year.

[23] Institute of Transfusion Medicine is the only blood transfusion service in the country which includes 1 national institute, 3 regional Centres and 17 hospital units called Blood Transfusion Services. The data reported cover 100% for some activities (such as testing) but only 30-50% for other activities.

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	
Norway	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	0	22	22	0	22	22	
	2018	0	22	22	0	22	22	
Oman	2014	1	16	17	1	13	14	82
	2015	1	16	17	1	13	14	82
	2017	—	—	—	—	—	—	—
	2018	1	15	16	1	12	13	81.2
Pakistan	2014	—	—	—	—	—	—	—
	2015	—	—	1830	59	97	156	40
	2017	…	…	…	120	486	606	
	2018	…	…	…	120	486	606	95
Palau	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	0	1	1	0	1	1	
Panama	2014	0	31	31	0	31	31	
	2015	0	29	29	0	29	29	
	2016	0	30	30	0	30	30	
	2017	0	30	30	0	28	28	94
Papua New Guinea	2014	0	35	35	0	23	23	61.4
	2015	0	35	35	0	23	23	59
	2017	0	35	35	0	23	23	59
	2018	—	—	—	—	—	—	—
Paraguay	2014	—	—	—	—	—	—	—
	2015	1	7	8	1	7	8	
	2016	1	7	8	1	7	8	99.5
	2017	1	9	10	1	7	8	99
Peru	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2016	…	…	…	…	…	…	
	2017	2	93	95	2	93	95	
Philippines	2014	—	—	—	—	—	—	—
	2015	14	33	47	13	14	27	21.4
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Poland	2014	23	0	23	23	0	23	
	2015	23	0	23	23	0	23	
	2017	23	0	23	23	0	23	
	2018	23	0	23	23	0	23	
Portugal	2014	3	31	34	3	31	34	
	2015	3	32	35	3	32	35	
	2017	4	29	33	4	29	33	
	2018	4	29	33	4	29	33	

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	
Qatar	2014	1	0	1	1	0	1	
	2015	1	0	1	1	0	1	78
	2017	1	0	1	1	0	1	
	2018	1	0	1	1	0	1	
Republic of Korea	2014	18	93	111	18	93	111	
	2015	18	92	110	18	92	110	
	2017	18	87	105	18	86	104	99[24]
	2018	18	97	105	18	97	104	99
Republic of Moldova	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	1	16	17	1	16	17	
Romania	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	42	0	42	42	0	42	
	2018	42	0	42	42	0	42	
Russian Federation	2014	114	327	441	114	327	441	99
	2015	112	294	406	112	294	406	99
	2017	101	253	354	101	253	354	99
	2018	101	231	332	101	231	332	99
Rwanda	2014	5	0	5	5	0	5	
	2015	5	0	5	5	0	5	
	2017	—	—	—	—	—	—	—
	2018				5	0	5	
Saint Kitts and Nevis	2014	—	—	—	—	—	—	—
	2015	0	1	1	0	1	1	
	2016	0	1	1	0	1	1	
	2017	0	1	1	0	1	1	
Saint Lucia	2014	…	…	….	…	…	…	…
	2015	0	2	2	0	2	2	
	2016	0	2	2	0	2	2	
	2017	0	2	2	0	2	2	
Saint Vincent and the Grenadines	2014	—	—	—	—	—	—	
	2015	0	1	1	0	1	1	
	2016	0	1	1	0	1	1	
	2017	0	1	1	0	1	1	
Samoa	2014	0	2	2	0	1	1	98.1
	2015	0	2	2	0	1	1	97.6
	2017	—	—	—	—	—	—	—
	2018							
San Marino	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—

[24] One hospital-based blood centre was closed and unable to report.

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	
Sao Tome and Principe	2014	0	2	2	0	2	2	
	2015	0	2	2	0	1	1	
	2017	—	—	—	—	—	—	—
	2018				0	3	3	
Saudi Arabia	2014	11	320	331	11	320	331	
	2015	11	320	331	11	320	331	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Senegal	2014	2	21	23	2	21	23	
	2015	2	19	21	2	19	21	
	2017	1	25	26	1	25	26	
	2018				2	25	27	
Serbia	2014	3	44	47	3	44	47	
	2015	3	44	47	3	44	47	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Seychelles	2014	0	1	1		1	1	
	2015	0	1	1	0	1	1	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Sierra Leone	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Singapore	2014	1	1	2	1	0	1	97.6[25]
	2015	1	1	2	1	0	1	98.2
	2017	1	1	2	1	0	1	98.8
	2018	1	0	1	1	0	1	
Slovakia	2014	12	33	45	12	33	45	
	2015	12	33	45	12	33	45	
	2017	14	30	44	14	30	44	
	2018	14	30	44	14	30	44	
Slovenia	2014	3	0	3	3	0	3	
	2015	3	0	3	3	0	3	
	2017	3	0	3	3	0	3	
	2018	—	—	—	—	—	—	—
Solomon Islands	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	0	9	9	0	1	1	90[26]
Somalia	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—

[25] 97.6% of blood donations in Singapore are collected by the Blood Services Group.

[26] Stock of blood is only kept in the national referral hospital in Honiara. In other smaller hospitals, blood is collected from family replace blood donors only when there is a need.

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	
South Africa[27]	2014	11	0	11	11	0	11	
	2015	11	0	11	11	0	11	
	2017	11	0	11	11	0	11	
	2018				11	0	11	
South Sudan	2014	2	13	15	…	…	…	6.7
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018				3	12	15	
Spain	2014	21	0	21	21	0	21	
	2015	21	0	21	21	0	21	
	2017	—	—	—	—	—	—	—
	2018	20	0	20	20	0	20	
Sri Lanka	2014	2	90	92	2	90	92	
	2015	2	96	98	2	96	98	
	2017	2	98	100	2	98	100	
	2018	2	101	103	2	101	103	
Sudan	2014	18	334	352	18	334	352	…
	2015	20	352	372	20	352	372	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Suriname	2014	—	—	—	—	—	—	
	2015	1	0	1	1	0	1	
	2016	1	0	1	1	0	1	
	2017	1	0	1	1	0	1	
Sweden	2014	0	30	30	0	30	30	
	2015	0	30	30	0	30	30	
	2017	0	26	26	0	26	26	
	2018	0	26	26	0	26	26	
Switzerland	2014	12	1	13	12	1	13	
	2015	11	1	12	11	1	12	
	2017	11	0	11	11	0	11	
	2018	11	0	11	11	9	11	
Syrian Arab Republic	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Tajikistan	2014	—	—	—	—	—	—	—
	2015	4	0	4	4	0	4	
	2017	5	0	5	5	0	5	
	2018	4	0	4	4	0	4	

[27] 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.

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	
Thailand	2014	13	157	170	1	0	1	28.1[28]
	2015	13	157	170	1	0	1	27.8
	2017	13	160	170	13	0	13	40.6[29]
	2018	13	160	173	13	0	13	41.9
Timor-Leste	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	0	6	6	0	1	1	75[30]
Togo	2014	2	0	2	2	0	2	
	2015	2	0	2	2	0	2	
	2017	2	0	2	2	0	2	
	2018				2	0	2[31]	
Tonga	2014	0	1	1	0	1	1	
	2015	0	1	1	0	1	1	
	2017	0	1	1	0	1	1	
	2018	0	1	1	0	1	1	
Trinidad and Tobago	2014	—	—	—	—	—	—	—
	2015	1	5	6	1	5	6	
	2016	0	7	7	0	7	7	
	2017	0	7	7	0	7	7	
Tunisia	2014	7	25	32	6	0	6	
	2015	7	25	32	6	0	6	
	2017	7	25	32	7	25	32	
	2018	7	25	32	7	25	32	
Turkey	2014	17	25	42	17	25	17	80
	2015	17	25	42	17	0	17	80
	2017	18	13	31	18	0	18	82
	2018	—	—	—	—	—	—	—
Turkmenistan	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Tuvalu	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Uganda	2014	7	0	7	7	0	7	
	2015	7	0	7	7	0	7	
	2017	7	0	7	7	0	7	
	2018				7	0	7	

[28] Total blood collection in whole country is 2,274,788 units. National Blood Centre collected 639,919 units

[29] Data reported cover National Blood Centre and 12 Regional Blood Centres excluding Hospital-based blood centres.

[30] Data only cover the National Blood Bank.

[31] Blood system consists of 1 national centre (CNTS), 1 regional centre (CRTS) and 6 collection and distribution stations.

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	
Ukraine	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
United Arab Emirates	2014	4	9	13	4	9	13	
	2015	4	9	13	4	9	13	25
	2017	—	—	—	—	—	—	—
	2018	5	7	12	4	7	11	93[32]
United Kingdom of Great Britain and Northern Ireland[33]	2014	4	6	10	4	6	10	
	2015	4	6	10	4	6	10	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
United Republic of Tanzania	2014	7	0	7	7	0	7	46[34]
	2015	7	0	7	7	0	7	24
	2017	7	0	7	7	0	7	
	2018				7	0	7	
United States of America	2014	136	115	251	48	—	48	60
	2015	…	…	…	48	0	48	60
	2017	65	0	65	4	0	4	52[35]
	2018	65	0	65	5	0	5	62[36]
Uruguay	2014	—	—	—	—	—	—	—
	2015	3	71	74	3	71	74	72
	2016	3	71	74	3	71	74	94
	2017	3	71	74	3	71	74	96
Uzbekistan	2014	16	189	205	16	189	205	
	2015	16	189	205	16	189	205	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Vanuatu	2014	—	—	—	—	—	—	—
	2015	0	4	4	0	4	4	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Venezuela (Bolivarian Republic of)	2014	—	—	—	—	—	—	—
	2015	4	335	339	4	335	339	80.9
	2016	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
Viet Nam	2014	0	63	63	0	63	63	
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—

[32] The stand-alone centre (Military Blood Bank) that was not included in the report is estimated to contribute approximately 7% of the national blood collection.

[33] Subnational data provided by Scottish National Blood Transfusion Service and Welsh Blood Service.

[34] The estimation is based on Blood Need Assessment study conducted in 2014. The study indicated the need of blood units in Tanzania is 278,000 per year.

[35] This report includes data from 4 of the largest blood collection centres in the Unites States of America.

[36] This report includes data from 5 of the largest blood collection centres in the Unites States of America.

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	
Yemen	2014	—	—	—	—	—	—	—
	2015	…	…	…	…	…	9	30
	2017	—	—	—	—	—	—	—
	2018	8	271	279	3	0	3	…
Zambia	2014	9	0	9	9	0	9	0
	2015	10	0	10	10	0	10	
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Zimbabwe	2014	5	0	5	5	0	5	
	2015	5	0	6	5	0	5	
	2017	5	0	5	5	0	5	
	2018				5	0	5	

Annex 3. Blood donations 2014–2018

… Not reported/not available.
Blank cell: 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	Total
Afghanistan	2014	55 203	…	…	67 492	0	0	122 695
	2015	69 272	…	…	86 443	0	0	155 715
	2017	77 923	…	…	101 858	0	0	179 781
	2018	82 904	…	…	127 723	0	0	210 627
Albania	2014	—	—	—	—	—	—	—
	2015	7 404	111	7 293	20 309	1 960	15	29 688
	2017	—	—	—	—	—	—	—
	2018	9 282	…	…	23 144	650	11	33 087
Algeria	2014	364 445	…	…	166 350	0		530 795
	2015	…	…	…	…	…		502 924
	2017	—	—	—	—	—	—	—
	2018	397 097	…	…	195 583	0		592 680
Andorra	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Angola	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	9 463	…	…	97 030	0	0	106 493
Antigua and Barbuda	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Argentina	2014	417 368	166 947	250 421	436 465	0		853 833
	2015	468 361	…	…	557 318	0		1 025 679
	2016	401 384	60 208	341 176	520 911	0		924 804
	2017	495 000	297 000	198 000	609 532	0		1 104 532
Armenia	2014	819	799	20	4 435	8 111	0	13 365
	2015	740	721	19	5 047	7 824	0	13 611
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Australia[1]	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	701 136						701 136
	2018	690 759						690 759

[1] Data source: Australia Red Cross Blood Service Annual report 2016-2017; Australian Red Cross Blood Service Annual Report 2017-2018. Available at: https://www.lifeblood.com.au/about/our-strategy/annual-reports.

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	Total
Austria	2014	—	—	—	—	—	—	212 717
	2015	—	—	—	—	—	—	422 786
	2017	…	…	…	…	…	…	352 798[2]
	2018	…	…	…	…	…	…	422 786[2]
Azerbaijan	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Bahamas	2014	1 859	…	…	2 699	0		4 558
	2015	—	—	—	—	—	—	—
	2016	1 610	914	696	4 129	0		5 739
	2017	1 293	341	919	4 303	0		5 596
Bahrain	2014	19 347	2 500	16 847	65	0	0	19 412
	2015	19 152	2 410	16 742	0	0	0	19 152
	2017	18 837	….	…	0	0	0	18 837
	2018	19 546	…	…	0	0		19 546
Bangladesh	2014	185 797	…	…	465 921	0		651 718
	2015	200 906	…	…	478 775	0		679 681
	2017	152 984	…	…	550 440	0		703 424
	2018	171 000	…	…	590 115	0		761 115
Barbados	2014	529	—	—	4 052	0		4 581
	2015	—	—	—	—	—	—	—
	2016	623	…	…	4 549			5 172
	2017	556	…	…	4 687	0		5 243
Belarus	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Belgium	2014	469 164	52 497	416 667	0	0	0	469 164
	2015	465 463	53 868	411 595	—	—	—	465 463
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Belize	2014	1 116	…	…	3 213	0		4 329
	2015	783	…	…	4 781	0		5 564
	2016	795	…	…	5 031	0		5 826
	2017	680	…	…	5 412	0		6 092
Benin	2014	70 744	30 229	43 782	3 267	0		74 011
	2015	68 498	27 940	40 558	3 146	0		71 644
	2017	—	—	—	—	—	—	—
	2018	81 500	…	…	1 703	0	0	83 203
Bhutan	2014	6 667	4 000	2 667	2 708	0	0	9 375
	2015	6 797	3 943	2 854	1 997	0	0	8 794
	2017	7 989	…	…	2 008	0	0	9 997
	2018	5 496	…	…	2 274	0	0	7 770

[2] Partial data.

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	Total
Bolivia	2014	40 435	29 351	11 084	60 669	0		101 104
	2015	44 188	—	—	63 884	0		108 072
	2016	39 746	28 281	11 465	72 725	0		112 571
	2017	42 698	31 353	11 345	76 965	0		119 663
Bosnia and Herzegovina	2014	16 410	7 776	13 004	220	0	0	16 410
	2015	15 240	6 521	12 267	51	0	0	15 240
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Botswana	2014	25 510	…	…	0	0	0	25 510
	2015[3]	27 444	…	…	0	0	0	27444
	2017	…	…	…	…	…	…	…
	2018	24 088	…	…	0	0	0	24 088
Brazil	2014	—	—	—	—	—	—	—
	2015	1 892 114	…	…	1 197 008	0		3 087 399
	2016	2 454 117	…	…	1 502 708	0		3 956 825
	2017	2 395 417	1 447 387	948 030	1 465 433	0		3 860 850
Brunei Darussalam	2014	15 130	4 197	9 384	0	0		15 130
	2015	15 183	3 556	10 079	0	0		15 183
	2017	16 104	3 404	10 129	0	0		16 104
	2018	15 537	2 825	9 864	0	0		15 537
Bulgaria	2014	33 434	6 687	26 747	133 736	2 311		169 481
	2015	57 058	12 643	44 415	10 7963	1 860		166 881
	2017	—	—	—	—	—	—	—
	2018	167 424	36 115	45 332	130 551	2 209		300 184
Burkina Faso	2014	80 284	50 243	30 041	32 830	0		113 114
	2015	86 694	52 599	34 095	29 602	0		116 296
	2017	88 270	50 954	37 316	27 604	0		115 874
	2018	94 223	…	…	12 012	0		106 235
Burundi	2014	—	—	—	—	—	—	—
	2015	60 084	19 757	40 327	0	0	0	60 084
	2017	—	—	—	—	—	—	—
	2018	82 524	…	…	0	0	0	82 524
Cabo Verde	2014	2 760	…	…	495	0		3 255
	2015	2 819	1277	1542	498	0		3 317
	2017	—	—	—	—	—	—	—
	2018	2 292			1 060	0		3 352
Cambodia	2014	17 790	15 655	2 135	35 074	0	0	52 864
	2015	17 034	16 182	852	37 795	0	0	54 829
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Cameroon	2014	5 966	…	…	43 117	—	—	49 083
	2015	8 848	…	…	53 004	1 638	9 572	73 096
	2017	9 533	…	…	79 067	2 447		91 047
	2018	6 312	…	…	88 561	0	0	94 873

[3] 2016 data

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	Total
Canada[4]	2014	863 567	97 208	766 359	0	0	0	863 567
	2015	807 001	82 096	724 905	0	0	0	807 001
	2017	794 471	103 750	690 921	0	0	0	794 471
	2018	—	—	—	—	—	—	—
Central African Republic	2014	12 078	5 799	6 416	137	0	0	12 215
	2015	15 480	7 493	8 131	0	0	0	15 480
	2017	—	—	—	—	—	—	—
	2018	21 000	…	…	0	0	0	21 000
Chad	2014	5 734	4 874	860	71 736	0		77 470
	2015	4 143	3 315	828	19 569	0		23 712
	2017	—	—	—	—	—	—	—
	2018	831	…	…	73 637	0	0	74 468
Chile	2014	59 722			181189	0		240 911
	2015	68 176	44 023	24 153	171 373	0		239 549
	2016	80 225	44 648	35 577	172 306	0		252 531
	2017	90 531	48 167	42 364	175 122	0		265 653
China	2014	11 682 449	…	…	481 495	0		12 163 944
	2015	11 819 408	…	…	493 115	0		12 312 523
	2017	13 328 648	…	…	243 974	0		13 572 622
	2018	13 661 423	…	…	39 196	0		13 700 619
Colombia	2014	647 269	382 132	265 137	85 855	0		733 124
	2015	725 209	569 780	155 429	70 479	0		795 688
	2016	757 788	583 201	171 926	58 664	0		816 452
	2017	782 964	599 611	183 353	47 327	0		830 291
Comoros	2014	120	15	105	2 200	0		2 320
	2015	70	10	60	2 321	0		2 391
	2017	—	—	—	—	—	—	—
	2018	168	…	…	1 512	0	0	1 680
Congo	2014	20 173	9 836	10 337	34 121	0	0	54 294
	2015	25 648	15 914	9 734	34 489	0	0	60 137
	2017	56 111	14 515	8 020	33 576	0		56 122
	2018	36 028	…	…	52 304	0	0	88 332
Cook Islands	2014	193	37	113	0	0	0	193
	2015	—	—	—	—	—	—	—
	2017	262	10	252	0	0		262
	2018	—	—	—	—	—	—	—
Costa Rica	2014	46 188	…	…	26 863	0		73 051
	2015	45 769	…	…	29 999	0		75 768
	2016	47 061	…	…	30 541	0		77 602
	2017	47 204	…	…	30 185	0		77 389
Côte d'Ivoire	2014	92 115	51 364	40 751	0	0	0	92 115
	2015	155 534	63 024	92 510	0	0	0	155 534
	2017	153 754	59 894	93 860	0	0	0	153 754
	2018	158 539	…	…	0	0	0	158 539

[4] Subnational data provided by Canadian Blood Service.

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	Total
Croatia	2014	180 005	14 076	165 929	0	0		180 005
	2015	191 442	19 125	172 317	0	0		191 442
	2017	194 702	14 895	179 807	0	0		194 702
	2018	190 447	12 912	177 535	0	0		190 447
Cuba	2014	415 902	…	…	0	0		415 902
	2015	416 923	…	…	0	0		416 923
	2016	—	—	—	—	—	—	—
	2017	411 979	164 971	247 008	0	0		411 979
Cyprus	2014	31 444	2 834	28 610	0	0		31 444
	2015	30 711	3 019	27 692	0	0		30 711
	2017	—	—	—	—	—	—	—
	2018	63 008	0	63 008	0	0		63 008
Czechia	2014	403 500	27 000	376 500				403 500
	2015	403 200	25 600	377 600	0	0		403 200
	2017	—	—	—	—	—	—	—
	2018	417 251	27 262	389 989	0	0	0	417 251
Democratic People's Republic of Korea	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Democratic Republic of the Congo	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	141 603	…	…	246 523	32 021	0	420 147
Denmark	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	207 462	15 455	192 007				207 462
	2018	206 990	16 773	190 217	0	0	0	206 990
Djibouti	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Dominica	2014	66	…	…	940	0		1 006
	2015	—	—	—	—	—	—	—
	2016	101	19	82	1 064	0		1 165
	2017	171	17	77	790	0		961
Dominican Republic	2014	9 379	…	…	84 177	335		93 891
	2015	9 126	…	…	69 330	59		78 515
	2016	7 284	…	…	100 297	0		107 581
	2017	7 383	…	…	97 721	0		105 104
Ecuador	2014	139 571			92 566			232 137
	2015	168 464	163 082	83 805	78 305			246 769
	2016	166 392	…	…	69 876			236 268
	2017	179 823	…	…	69 530	0		249 353

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	Total
Egypt	2014	—	—	—	—	—	—	—
	2015	402 600	480 390	59 430	50 000	0	732	442 616
	2017	466 741	456 800	9 941				469 117
	2018	305 718	300 000	5 718	121 142			426 860
El Salvador	2014	14 665	…	…	83 423			98 090
	2015	15 810	11 299	4 511	77 009	0		92 819
	2016	23 059	17 603	5 456	81 554	0		104 613
	2017	24 159	13 201	10 953	77 650	0		101 809
Equatorial Guinea	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Eritrea	2014	7 285	6 467	818	784	0	0	8 069
	2015	6 264	5 696	568	758	0	0	7 022
	2017	—	—	—	—	—	—	—
	2018	9 057	…	…	218	0	0	9 275
Estonia	2014	60 531	6 951	53 580	0	0	0	60 531
	2015	59 013	5 960	53 053	0	0	0	59 013
	2017	55 057	5 084	49 973	0	0	0	55 057
	2018	50 142	5 099	45 043	0	0	0	50 142
Eswatini	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	14 675	14 675	0	0	0	0	14 675
	2018	15 203	…	…	0	0	0	15 203
Ethiopia	2014	61 385	…	…	26 300			87 685
	2015	121 968	…	…	6 185	0	0	128 153
	2017	183 338	172 288	11 050	3 515	0	0	186 853
	2018	182 767	…	…	3 730	0	0	186 497
Fiji	2014	11 655	4 429	7 226	1 767	0	0	13 432
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	17 814	6 923	10 891	443	0	0	18 257
Finland	2014	208 380	14 312	194 068	0	0	0	208 380
	2015	209 408	13 622	195 786	0	0	0	209 408
	2017	204 948	14 343	190 605	0	0	0	204 948
	2018	206 610	14 735	191 875	0	0	0	206 610
France	2014	2 532 137	…	…	0	0		2 532 137
	2015	2 979 964	…	…	0	0	0	2 979 964
	2017	—	—	—	—	—	—	—
	2018	2 512 870	387 109	2 125 761	0	0		2 512 870
Gabon	2014	6 589	…	…	14 905	0	0	21 494
	2015	7 844	…	…	17 236	0	0	25 080
	2017	4 697	…	…	10 994		0	25 549
	2018	6 900	…	…	16 100	0	0	23 000

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	Total
Gambia	2014	2 356	…	…	8 861	0	0	11 217
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	1 330	…	…	10 659	0	0	11 989
Georgia	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Germany	2014	4 496 589	390 665	4 105 924	0	0		4 496 589
	2015	4 193 478	339 505	3 853 973	0	0		4 193 478
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Ghana	2014	45 459	27 730	17 729	104 863			150 322
	2015	52 785	33 255	19 530	102 465	0		155 250
	2017	…	…	…	…	…	…	…
	2018	57 594	…	…	104 632	0		162 226
Greece	2014	276 248	28 106	248 142	265 414	0		541 662
	2015	274 705	…	…	229 855	0		504 560
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Grenada	2014	509	55	454	757	0		1 266
	2015	—	—	—	—	—	—	—
	2016	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
Guatemala	2014	7 622	…	…	106 766	0		114 388
	2015	6 870	…	…	119 352	0		126 222
	2016	6 868	…	…	128 624	0		135 492
	2017	6 888	…	…	129 930	0		136 818
Guinea	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Guinea-Bissau	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Guyana	2014	—	—	—	—	—	—	—
	2015	9 696	2 482	7 208	6	0		9 702
	2016	4 193	…	…	6 002	0		10 195
	2017	9 755	3 013	6 712		0		9 755
Haiti	2014	15 505	…	…	13 362	0		28 867
	2015	13 239	…	…	14 513	0		27 752
	2016	10 203	…	…	15 496	0		25 699
	2017	11 571	…	…	16 447	0		28 018

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	Total
Honduras	2014	10 111	…	…	48 107	393		58 611
	2015	13 326	…	…	57 624	687		71 637
	2016	16 922	…	…	62 854	47		79 823
	2017	13 959	…	…	66 861	24		80 844
Hungary	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Iceland	2014	11 393	0	11 393	0	0	0	11 393
	2015	10 689	0	10 689	0	0	0	10 689
	2017	10 734	0	10 734	0	0	0	10 734
	2018	—	—	—	—	—	—	—
India	2014	8 427 714	…	…	2 410 669	0		10838383
	2015	8 532 000	…	…	2 268 000	0		10 800 000
	2017	8 931 000	…	…	2 519 000	0		11 450 000
	2018	9 424 000	…	…	2 976 000	0		12 400 000
Indonesia	2014	2 633 334	…	…	414 333	7 070		3 054 747
	2015	3 034 904	…	…	330 913	5 118		3 370 935
	2017	3 209 506	…	…	256 099	8 520		3 474 125
	2018	3 480 051	989 612	2 490 439	327 097	14 567		3 821 715
Iran (Islamic Republic of)	2014	2 052 549	432 687	1 619 862	0	0	0	2 052 549
	2015	2 066 849	404 323	1 662 526	0	0	0	2 066 849
	2017	2 072 370	265 716	1 806 654	0	0	0	2 072 370
	2018	2 069 273	245 412	1 823 861	0	0	0	2 069 273
Iraq	2014	—	—	—	—	—	—	—
	2015	…	…	…	…	…	…	550 000
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Ireland	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Israel	2014	263 797	50 464	212 109	0	0		263 797
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Italy	2014	2 587 869	365 037	2 222 832	0	0	0	2 587 869
	2015	2 576 473	386 125	2 190 348	0	0	0	2 576 473
	2017	2 579 438	385 411	2 194 027	0	0	0	2 579 438
	2018	2 569 275	371 093	2 198 182	0	0	0	2 569 275
Jamaica	2014	6 412	…	…	20 716	0		29 390
	2015	8 291	…	…	20 125	0		28 416
	2016	5 346	…	…	19 915	0		25 351
	2017	5 612	…	…	26 417	0		32 029

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	Total
Japan	2014	3 604 721	389 161	3 215 560	0	0	0	3 604 721
	2015	3 547 726	352 654	3 195 072	0	0	0	3 547 726
	2017	3 420 645	337 778	3 082 867	0	0	0	3 420 645
	2018	—	—	—	—	—	—	—
Jordan	2014	63 817	19 145	44 672	58 907	0		122 724
	2015	63 657	21 430	42 227	54 227	0		117 884
	2017[5]	36 953	24 389	12 564	26 759	0	0	63 713
	2018	35 652	24 244	11 408	29 171	0	0	64 823
Kazakhstan	2014	151 480	151 480	40 523	103 832	7 746		246 282
	2015	157 016	75 368	81 648	97 065	31 403		285 484
	2017	—	—	—	—	—	—	—
	2018	147 092	55 340	91 752	39 209	2 419		190 782
Kenya	2014	183 406	127 731	55 675	0	0	0	183 406
	2015	155 081	108 557	46 524	0	0	0	155 081
	2017	—	—	—	—	—	—	—
	2018	164 275	…	…	0	0	0	164 275
Kiribati	2014	196	…	…	1 653	0		1 849
	2015	229	…	…	1 942	0		2 171
	2017	105	95	10	2 823	0		2 932
	2018	229	…	…	1 942	0		2 171
Kuwait	2014	—	—	—	—	—	—	—
	2015	39 522	17 014	22 511	27 626	0	5	67 156
	2017	47 408	14 794	32 614	26 511	0		73 919
	2018	43 467	14 278	29 189	34 564	0	0	78 031
Kyrgyzstan	2014	…	…	…	…	…	…	39 884
	2015	5 288	2 602	640	33 996	3 826		43 110
	2017	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…
Lao People's Democratic Republic	2014	31 750	…	…	3 297	0		35 047
	2015	31 386	18 825	1 256	5 277	0		36 740
	2017	42 173	19 382	22 791	3 562			45 735
	2018	45 982	19 242	17 471	2 998	0		49 070
Latvia	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	49 725	6 158	43 567	0	0		49 725
	2018	52 174	6 675	45 499	0	0		52 174
Lebanon	2014	…	…	…	…	…	…	150 000
	2015	…	…	…	…	…	…	150 000
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Lesotho	2014	8 063	5 623	2 440	310	0	0	8 373
	2015	7 666	5 084	2 582	213	0	0	7 879
	2017	3 836	1 421	2 415	1 602			5 438
	2018	3 900	…	…	2 518	0	0	6 418

[5] Partial data.

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	Total
Liberia	2014	500	131	12	3 471	0	0	4 114
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	6 362	…	…	4 661	0	0	11 023
Libya	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	18 534	3 706	14 828	124 038	0		142 572
	2018	17 057	1 405	15 652	131 273	0		148 330
Lithuania	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Luxembourg	2014	23 937	1 402	22 535	0	0		23 937
	2015	20 358	904	19 454	0	0		20 358
	2017	—	—	—	—	—	—	—
	2018	19 724	1 125	18 599	0	0		19 724
Madagascar	2014	6 564	2 704	3 860	24 406	0		30 970
	2015	7 044	2 760	4 284	26 118	0	0	33 162
	2017	8 523	…	…	30 831	0	0	39 210
	2018	9 821	…	…	39 102	0	0	48 923
Malawi	2014	52 065	27 062	25 003	26 000	0	0	78 065
	2015	52 160	28 162	29 858	26 000	0	0	84 020
	2017	60 938	…	…	0	0	0	60 938
	2018	52 494	…	…	10 506	0	0	63 000
Malaysia	2014	657 367	230 467	426 900	49	0		657 416
	2015	707 328	237 362	469 966	76	0		707 404
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Maldives	2014	2 081	…	…	7 288	0		9 369
	2015	1 209	324	750	864	127		2 200
	2017	—	—	—	—	—	—	—
	2018	2 335	852	1 483	4 131	0		6 466
Mali	2014	…	…	…	…	…	…	…
	2015	12 282	4 524	7 758	32 752	0	0	45 034
	2017	12 764	5 378	7 386	35 744	0		48 508
	2018	15 025	…	…	40 981	0	0	56 006
Malta	2014	—	—	—	—	—	—	—
	2015	17 014	2 163	14 851	0	0	0	17 014
	2017	15 917	1 065	14 852	0	0	0	15 917
	2018	—	—	—	—	—	—	—
Marshall Islands	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	288

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	Total
Mauritania	2014	…	…	…	…	0	0	15 490
	2015	4 689	—	—	10 040	0	0	14 729
	2017	—	—	—	—	—	—	—
	2018	6 346	…	…	12 047	0	0	18 393
Mauritius	2014	41 390	…	…	4 201	0		45 591
	2015	43 011	11 745	28 266	3 525	0		46 536
	2017	—	—	—	—	—	—	—
	2018	41 063	…	…	3 508	0	160	44 731
Mexico	2014	49 794	…	…	1 889 266	0		1 939 060
	2015	84 634	82 040	326	2 085 368	0		2 170 002
	2016	113 052	…	…	2 240 804			2 353 857
	2017	124 325	…	…	2 270 511	0		2 394 836
Micronesia (Federated States of)	2014	160	15	145	1 477	0	0	1 637
	2015	172	50	122	1 549	0	0	1 721
	2017	306	145	161	1 361	0	0	1 667
	2018	302	157	145	1 434	0	0	1 736
Monaco	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Mongolia	2014	26 097	13 301	12 273	523	0	0	26 097
	2015	30 202	15 504	14 698	194	0	0	30 396
	2017	33 407	15 033	18 374	0	0	0	33 407
	2018	31 072	14 679	16 393	0	0	0	31 072
Montenegro	2014	5 994	1 776	4 218	10 657	0	0	16 651
	2015	6 961	2 287	3 134	10 198	0		17 159
	2017	—	—	—	—	—	—	—
	2018	7 608	1 663	5 945	11 045	0	0	18 653
Morocco	2014	237 457	…	…	59 489	0	0	296 946
	2015	204 979	164 395	59 414	32 678	0	0	297 073
	2017	—	—	—	—	—	—	—
	2018	298 842	…	…	22 494	0	0	321 336
Mozambique	2014	47 582	…	…	73 509	0	0	121 091
	2015	…	…	…	…	0	0	126 068
	2017	61 996	…	…	70 061			132 057
	2018	66 459	…	…	69 632	0	0	136 091
Myanmar	2014	47 057	18 844	28 213	3 941	0	0	50 998
	2015	61 037	26 943	34 094	1 886	0	0	62 923
	2017	71 620	28 434	43 186	2 313	0	0	73 933
	2018	96 018	41 305	54 713	921	0	0	96 939
Namibia	2014	—	—	—	—	—	—	—
	2015[6]	32 968	6 441	26 527	0	0	0	32 968
	2017	37 785	7 524	30 261	0	0	0	37 785
	2018	37 672	…	…	0	0	0	37 672

[6] 2016 data.

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	Total
Nauru	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Nepal	2014	217 160	54 290	162 870	34 744	0	0	217 160
	2015[7]	98 000	49 000	49 000	17 000	0	0	115 000
	2017	215 200	53 800	161 400	47 240	0	0	262 440
	2018	225 696	67 708	157 988	46 226	0	0	271 922
Netherlands	2014	—	—	—	—	—	—	—
	2015	435 405	…	…	…	…	…	435 405
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
New Zealand	2014	120 668	15 246	105 422	0	0	0	120 668
	2015	119 554	15 452	104 102	0	0	0	119 554
	2017	111 189	15 556	95 633	0	0	0	111 189
	2018	112 162	16 249	95 913	0	0	0	112 162
Nicaragua	2014	75 035	…	…	…	…		75 035
	2015	74 955	28 982	44 937	0	0		74 955
	2016	76 697	29 357	47 346				76 697
	2017	84 682	40 215	44 467	0	0		84 682
Niger	2014	22 913	7 637	15 276	55 444	0		78 357
	2015	28 199	12 049	16 150	59 589	0		87 788
	2017	—	—	—	—	—	—	—
	2018	38 625	…	…	99 090	0	0	137 715
Nigeria[8]	2014	49 111	33 827	15 284	14 243	0	16 689	80 043
	2015	58 363	43 057	15 306	40 622	0	0	98 985
	2017	31 553	21 336	10 217	42 687	0	0	74 240
	2018	30 229	…	…	84 800	53 432	240	168 701
Niue	2014	0	0	0	17	0	0	17
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…
North Macedonia	2014	51 276	7 356	43 920	724	0		52 000
	2015	48 349	5 908	42 441	0	0		48 694
	2017	...	...	...	...	...	...	...
	2018	53 915	5 451	48 465	271	0	0	54 186
Norway	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	177 719	10 000	167 719	0	0	0	177 719
	2018	174 454	10 000	164 454	0	0	0	174 454
Oman	2014	48 526	23 780	24 847	8 703	0		57 330
	2015	47 155	22 674	20 863	8 988	0		56 143
	2017	—	—	—	—	—	—	—
	2018	51 615	25 625	25 990	5 792	0		57 407

[7] Partial data.

[8] Partial data.

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	Total
Pakistan	2014	—	—	—	—	—	—	—
	2015	220 847	—	—	1 159 439	0		1 380 286
	2017	…	…	…	…	…	…	…
	2018	410 599	…	…	1 903 709			2 314 308
Palau	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	603			250	0		853
Panama	2014	3 352	…	…	47 407	5 079		55 838
	2015	3 970	…	…	49 340	0		56 205
	2016	3 802	…	…	50 833	2 319		56 954
	2017	2 801	…	…	48 822	2 443		54 066
Papua New Guinea	2014	15 916	8 379	7 537	12 451	0		28 367
	2015	18 615	10 561	8 046	14 582	0		33 197
	2017	20 847	10 012	10 692	17 647	0		38 544
	2018	—	—	—	—	—	—	—
Paraguay	2014	8 022	…	…	79 866	0		87 888
	2015	8 819	…	…	77 178	0		85 997
	2016	10 090	…	…	83 410			93 500
	2017	12 673	…	…	76 061	0		88 734
Peru	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2016	31 444	30 815	629	308 140	0		339 594
	2017	34 718	33 643	1 075	324 740	0		359 458
Philippines	2014	—	—	—	—	—	—	—
	2015	713 366	280 031	433 335	148 289	324		861 979
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Poland	2014	1 118 846	193 401	925 445	51 741	446		1 172 361
	2015	1 157 092	112 832	1 044 260	184	347		1 157 623
	2017	1 160 746	199 099	9 61 647	48 677	358		1 210 706
	2018	1 172 572	181913	9 86 166	50 180	367		1 223 209
Portugal	2014	353 459	36 172	190 710	0	0		353 459
	2015	337 580	37 603	186 321	0	0		337 580
	2017	318 839	25 823	293 016	0	0		318 839
	2018	309 231	24 645	284 586	0	0		309 231
Qatar	2014	25 242	…	…	…	…	…	25 242
	2015	27 032	11 849	15 183	5	0	0	27 039
	2017	27 095	12 289	14 806	13	0	0	27 108
	2018	30 209	12 952	17 257	26	0	0	30 235
Republic of Korea	2014	3 048 488	522 917	2 525 571	0	0	0	3 048 488
	2015	3 077 553	478 260	2 599 293	0	0	0	3 077 553
	2017	2 133 219	368 393	1 764 826	0	0	0	2 133 219
	2018	2 114 925	330 586	1 784 339	0	0	0	2 114 925

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	Total
Republic of Moldova	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	59 336	…	…	3 857			63 193
Romania	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	417 114	118 986	298 128	0	0	0	417 114
	2018	416 769	122 348	294 421	0	0	0	416 769
Russian Federation	2014	2 212 349	…	…	0	90 079		2 302 468
	2015	2 247 891	…	…	0	43 596		2 291 487
	2017	2 175 625	…	…	0	24 010		2 199 635
	2018	2 203 748	…	…	0	20 463		2 224 211
Rwanda	2014	42 789	10 697	32 092	0	0	0	42 789
	2015	53 436	10 687	42 749	0	0	0	53 436
	2017	—	—	—	—	—	—	—
	2018	65 512	…	…	0	0	0	65 512
Saint Kitts and Nevis	2014	—	—	—	—	—		—
	2015	42	30	6	366	0		408
	2016	32	13	19	509	0		541
	2017	25	…	…	545	0		570
Saint Lucia	2014	1 402	…	…	1038	0		2 440
	2015	1 563	634	929	898	0		2 461
	2016	1 310	481	829	1 248	0		2 558
	2017	1 561	587	974	1 215	0		2 776
Saint Vincent and the Grenadines	2014	77	…	…	987	0		1 064
	2015	144	…	…	884	0		1 028
	2016	122	…	…	981	0		1 103
	2017	110	…	…	1 197	0		1 307
Samoa	2014	264	…	…	1 448	0	0	1 712
	2015	257	51	206	2 222	0	0	2 479
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
San Marino	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Sao Tome and Principe	2014	562	…	…	296	0	11	869
	2015	825	650	175	185	0	0	1 010
	2017	—	—	—	—	—	—	—
	2018	853	…	…	341	0	0	1 194
Saudi Arabia	2014	176 600	52 500	124 100	267 450	0		444 050
	2015	188 900	63 400	125 500	295 700	0	0	484 600
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—

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	Total
Senegal	2014	75 438	44 927	30 511	3 110	0	0	78 548
	2015	51 506	35 368	16 138	17 789	0	0	69 295
	2017	80 900	50 967	29 933	8 005	0	0	88 905
	2018	87 183	…	…	10 775	0	0	97 958
Serbia	2014	237 755	…	…	0	0	0	237 755
	2015	243 473	…	…	0	0	0	243 473
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Seychelles	2014	452	119	396	813	0	0	1 822
	2015	634	305	300	724	0	0	1 863
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Sierra Leone	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Singapore	2014	108 058	23 880	84 178	0	0	0	108 058
	2015	112 713	24 736	87 977	0	0	0	112 713
	2017	116 128	24 842	91 286	0	0	0	116 128
	2018	115 826	24 349	91 477	0	0	0	115 826
Slovakia	2014	218 439	…	…	0	0		218 439
	2015	222 286	27 905	194 381	0	0		222 286
	2017	215 786	18 363	197 423	0	0		215 786
	2018	22 1936	17 865	204 071	0	0		221 936
Slovenia	2014	89 395	9 596	79 799	0	0	0	89 395
	2015	88 394	8 654	56 521	0	0	0	88 394
	2017	90 927	9 514	81 413	0	0	0	90 927
	2018	50 142	5 099	81 413	0	0	0	50 142
Solomon Islands	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…
Somalia	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
South Africa	2014	956 931	117 612	839 319	0	0	189	819 120
	2015	981 673	122 344	859 329	0	0		981 673
	2017	964 588	111 319	853 269	0	0	0	964 588
	2018	982 010	…	…	0	0	0	982 010
South Sudan	2014[9]	323	300	23	190	0	0	323
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	1 754	…	…	4 779	0	0	6 533

[9] Partial data.

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	Total
Spain	2014	1 621 707	…	…	—	—	—	1 621 707
	2015	1 651 074	…	…	0	0	0	1 651 074
	2017	1 686 463	…	…	0	0	0	1 686 463
	2018	—	—	—	—	—	—	—
Sri Lanka	2014	380 367	82 136	298 321	0	0		380 367
	2015	395 500	85 403	310 097	0	0		395 500
	2017	423 668	…	…	0	0	0	423 668
	2018	450 640	…	…	0	0	0	450 640
Sudan	2014	46 013	…	…	295 207			341 220
	2015	26 192	…	…	289 568	0	0	315 764
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Suriname	2014	10 521	…	…	…	…		10 521
	2015	10 290	…	…	0	0		10 290
	2016	10 429	…	…				10 429
	2017	10 270	…	…	0	0		10 270
Sweden	2014	462 629	0	462 629	0	0		462 629
	2015	456 295	…	…	0	0		456 295
	2017	418 040	28 244	389 796				418 040
	2018	409 187	29 146	409 187	0	0		409 187
Switzerland	2014	310 216	25279	284 937	0	0		310 216
	2015	292 625	28170	264 455	0	0		292 625
	2017	265 409	…	…	0	0		265 409
	2018	260 011	…	…	0	0		260 011
Syrian Arab Republic	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Tajikistan	2014	21 487	6 431	8 224	2 084	5 271	0	36 142
	2015	33 489	10 419	23 070	2 833	6 613	0	42 935
	2017	28 097	6 725	21 372	3 481	8 641	0	40 219
	2018	31 326	9 789	15 662	6 574	7 935	0	48 523
Thailand	2014[10]	639 919	92 650	547 269	0	0	0	639 919
	2015[10]	650 107	96 229	553 878	0	0	0	650 107
	2017[11]	1 067 896	154 678	913 218	0	0		1 067 896
	2018[11]	1 112 497	152 536	959 961	0	0	0	1 112 497
Timor-Leste	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	800	600	200	3 138	0	0	3 938
Togo	2014	48 408	14 334	34074	0	0	0	48408
	2015	44 751	11 446	33305	0	0	0	44751
	2017	42 906	10 106	32 800	0	0	0	42 906
	2018	50 023	...	...	0	0	0	50 023

[10] Numbers of donations reported in this section only cover the National Blood Centre, Bangkok, accounting for approximately 30% of the total national collections.

[11] Partial data.

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	Total
Tonga	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	...	...	...	...	...	...	1 675
	2018	...	...	...	...	...	...	3 322
Trinidad and Tobago	2014	3 753	...	...	17 419	0		21 172
	2015	3 866	564	302	17 132	0		20 998
	2016	4 444	1 092	3 352	17 431	0		21 875
	2017	4 737	1 180	3 557	16 746	0		21 483
Tunisia	2014	52 998	44 630	8 368	86 470	0	0	139 468
	2015	...	...	...	...	...	...	...
	2017	67 908	56 940	10 968	160 496	0	0	228 404
	2018	56 795	...	...	164 009	0	0	220 804
Turkey	2014	1 729 935	623 912	1 206 023	0	0	0	1 829 935
	2015	1 904 585	60 279	1 301 828	0	0	0	1 904 585
	2017	2 357 582	678 261	1 679 321	0	0	0	2 357 582
	2018	—	—	—	—	—	—	—
Turkmenistan	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Tuvalu	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Uganda	2014	217 945	98 075	59 934	0	0	0	217 945
	2015	230 995	87 778	143 217	0	0	0	230 995
	2017	209 633	...	...	0	0	0	209 633
	2018	254 750	...	...	0	0	0	254 750
Ukraine	2014	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
United Arab Emirates	2014	81 183	. . .	. . .	26	4 239	7	85 455
	2015[12]	24 050	. . .	. . .	142	0		24 192
	2017	—	—	—	—	—	—	—
	2018	120 320	73 070	47 250	2 565	4 361	0	127 246
United Kingdom of Great Britain and Northern Ireland[13]	2014	257 845	25 110	232 735	0	0		257 845
	2015	238 706	23 463	229 565	0	0	0	245 867
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
United Republic of Tanzania	2014	115 960	100 901	15 059	12 955	0	0	128 915
	2015	58 462	10 197	48 265	9 518	0	0	67 980
	2017	156 749	147 344	9 405	77 204	0	0	233 953
	2018	173 922	. . .	. . .	133 913	0	0	307 835

[12] Partial data.

[13] Subnational data provided by Scottish National Blood Transfusion Service and Welsh Blood Service.

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	Total
United States of America	2014[14]	5 504 977	1 030 095	4 554 485	454	0	0	5 505 431
	2015[15]	5 166 495	910 176	425 638	301	0	0	5 166 795
	2017[16]	4 961 320	1 069 626	3 679 691	270	0	833	4 962 423
	201817	5 934 137	1 235 853	4 468 618	1 113	0	0	5 935 250
Uruguay	2014	47 927	…	…	48 331	0		96 258
	2015	46 534	…	…	43 937	0		90 471
	2016	46 050	…	…	41 790	0		87 840
	2017	40 118	…	…	51 263	0		91 381
Uzbekistan	2014	66 598	66 109	489	46 618	0		135 859
	2015	76 514	76 256	258	53 560	0		142 723
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Vanuatu	2014	—	—	—	—	—	—	—
	2015	927	235	550	395	0	0	1 322
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Venezuela (Bolivarian Republic of)	2014	312 048	—	—	0	0		312 048
	2015	299 878	—	—	0	0		299 878
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Viet Nam	2014	963 358	529 846	197 050	26 255	11 323		1 001 013
	2015	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Yemen	2014	—	—	—	—	—	—	—
	2015	2 715	—	—	6 972	0		9 687
	2017	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	17 913
Zambia	2014	109 269	54 634	54 635	0	0	0	109 269
	2015	100 110	53 058	47 052	0	0	0	100 110
	2017	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—
Zimbabwe	2014	58 603	19 978	38 625	0	0		58 603
	2015	59 947	20 970	38 977	0	0		59 947
	2017	65 164	…	…	0	0		65 164
	2018	82 257	…	…	0	0		82 257

[14] It was estimated that the number of blood donations reported covered 60% of the national data.

[15] It was estimated that the number of blood donations reported covered 60% of the national data.

[16] This report includes data from 4 of the largest blood collection centres in the United States of America. It was estimated that the number of blood donations reported covered 52% of the national data.

[17] This report includes data from 5 of the largest blood collection centres in the United States of America. It was estimated that the number of blood donations reported covered 64% of the national data.

Annex 3. Blood donations 2014–2018 (continued)

… Not reported/not available.
Blank cell: Not required/not applicable.
— No response.
VNRD: Voluntary non-remunerated donors.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Argentina	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	8 169
	2016	Yes	20 383	4 246	1 6137	849	0		21 232
	2017	Yes	64 250	12 850	51 400	0	0		64 250
Armenia	2014	Yes	0	0	0	0	330	0	330
	2015	Yes	0	0	0	0	105	0	105
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Australia[1]	2014	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—
	2017	Yes	571 915	—	—	0	0	0	571 915
	2018	Yes	639 090	…	—	0	0	0	639 090
Austria	2014	Yes	…	…	…	…	…	…	721 933
	2015	Yes	…	…	…	…	…	…	714 878
	2017	Yes	…	…	…	…	…	…	527 172
	2018	Yes	…	…	…	…	…	…	714 878
Bangladesh	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2017	Yes	20			30	0		50
	2018	Yes	20	20	0	0	0		20
Barbados	2014	Yes	…	…	…	…	…	…	98
	2015	—	—	—	—	—	—	—	—
	2016	…	…	…	…	…	…	…	…
	2017	…	…	…	…	…	…	…	…
Belgium	2014	Yes	126 846	7 029	119 817	0	0	0	126 846
	2015	Yes	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Bolivia	2014	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…
	2016	Yes	202	136	66	104			306
	2017	Yes	223	139	84	128			351
Bosnia and Herzegovina	2014	Yes	…	…	…	…	…	…	486
	2015	Yes	481	…	…	…	…	…	481
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—

[1] Data source: Australia Red Cross Blood Service Annual report 2016-2017; Australian Red Cross Blood Service Annual Report 2017-18. Available at: https://www.lifeblood.com.au/about/our-strategy/annual-reports.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Botswana	2014	Yes	119	…	…	0	0		119
	2015	Yes	3	…	…	0	0		3
	2017	Yes	22	0	22	0	0		22
	2018	Yes	22	0	22	0	0		22
Brazil	2014	—	—	—	—	—	—	—	—
	2015	Yes	…	…	…	…	…	…	67 987
	2016	Yes	…	…	…	…	…	…	8 279
	2017	Yes	…	…	…	…	…	…	79 860
Brunei Darussalam	2014	Yes	392	…	…	0	0		392
	2015	Yes	485	…	…	0	0		485
	2017	Yes	535	…	…	0	0		535
	2018	Yes	451	…	…	0	0		451
Bulgaria	2014	Yes	0	0	0	0	2 311	0	2 311
	2015	Yes	0	0	0	0	1 511		1 511
	2017	—	—	—	—	—	—	—	—
	2018	Yes					1 082		1 082
Canada	2014	Yes	59 657	48	59 609	0	0	0	59 657
	2015	Yes	57 172	32	57 140	0	0	0	57 172
	2017	Yes	56 114	43	56 071	0	0	0	56 114
	2018	—	—	—	—	—	—	—	—
Chile	2014	…	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2016	Yes	…	…	…	…	…	…	1866
	2017	Yes	…	…	…	…	…	…	2172
China	2014	Yes	760 415	…	…	61 396			821 811
	2015	Yes	819 682	…	…	66 168	0		885 850
	2017	Yes	952 459	…	…	64 919			1 017 378
	2018	Yes	1 075 750	…	…	11 097			1 086 847
Colombia	2014	Yes	32 844	11 258	21 588	4 502			37 346
	2015	Yes	34 811	17 987	16 824	6 614	0		41 425
	2016	Yes	38 308	17 450	20 858	5 638	0		43 943
	2017	Yes	42 672	19 647	23 025	3 347	0		46 019
Costa Rica	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	726	…	…	…	…	…	726
	2016	Yes	3 867	966	122	30			3 897
	2017	Yes	130	32	98	8			138
Croatia	2014	Yes	3 711	0	3 711	0	0	0	3 711
	2015	Yes	4 157	0	4 157	0	0		4 157
	2017	Yes	194 702	14 895	179 807	0	0		194 702
	2018	Yes	5 206	0	5 206	0	0		5 206
Cuba	2014	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…
	2016	yes	13 711	…	…	0	0		13 711
	2017	…	…	…	…	…	…	…	…

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Cyprus	2014	Yes	90	0	90	0	0		90
	2015	Yes	111	0	111	0	0		111
	2017	—	—	—	—	—	—	—	—
	2018	Yes	335	…	…	0	0		335
Czechia	2014	Yes	704 900	23 200	681 700	0	0		704 900
	2015	Yes	…	…	…	…	…	…	689 200
	2017	—	—	—	—	—	—	—	—
	2018	Yes	…	…	…	…	…	…	218 632
Denmark	2014	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—
	2017	Yes	64 262			0	0	0	64 262
	2018	Yes	71 786			0	0	0	71 786
Ecuador	2014	…	…	…	…	…	…	…	…
	2015	Yes	—	—	—	—	0	—	4 914
	2016	Yes	…	…	…	…	…	…	4 511
	2017	Yes	…	…	…	…	…	…	6 444
Egypt	2014	—	—	—	—	—	—	—	—
	2015	Yes	1 453	…	…	0	0		1 453
	2017	…	…	…	…	…	…	…	…
	2018	Yes	…	…	…	…	…	…	20183
El Salvador	2014	…	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2016	Yes	1 431	…	…	0	0		1 431
	2017	Yes	1 231	…	…	0	0		1 231
Estonia	2014	Yes	2 115	0	2 115	0	0	0	2 115
	2015	Yes	2 612	0	2 612	0	0	0	2 612
	2017	Yes	3 447	0	3 447		0	0	3 447
	2018	Yes	3 344	0	3 344	0	0	0	3 344
Finland	2014	Yes	4 417	0	4 417	0	0	0	4 417
	2015	Yes	2 128	0	2 128	0	0	0	2 128
	2017	Yes	2 585	0	2 585	0	0	0	2 585
	2018	Yes	2 585	0	2 585	0	0	0	2 585
France	2014	Yes	294 575	…	…	0	0		294 575
	2015	Yes	399 743	…	…	0	0		399 743
	2017	—	—	—	—	—	—	—	—
	2018	Yes	453 392	87 498	365 894	0	0		453 392
Germany	2014	Yes	2 705 397	2 594	2 702 803	0	0		2 705 397
	2015	Yes	2 569 486	2 233	2 567 253	0	0		2 569 486
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Greece	2014	Yes	9 520	207	6 843	7 050	0		16 570
	2015	Yes	11 794	…	…	6 351	0		18 145
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Guatemala	2014	Yes	…	…	…	…	…		1 996
	2015	Yes	0	…	…	2 301	0		2 301
	2016	Yes	0			2 421	0		2 421
	2017	Yes	0			2 950	0		2 950
Honduras	2014	Yes	…	…	…	…	…	...	…
	2015	…	…	…	…	…	...	…	…
	2016	Yes	…	…	…	…	…	...	…
	2017	…	…	…	…	…	...	…	…
Iceland	2014	Yes	935	0	935	0	0	0	935
	2015	Yes	919	0	919	0	0	0	919
	2017	Yes	786	0	786	0	0	0	786
	2018	—	—	—	—	—	—	—	—
India	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2017	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…
Indonesia	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2017	Yes	7 719	…	…	418	0		8 173
	2018	Yes	14 093	10 933	3 160	2 555	185		16 833
Iran (Islamic Republic of)	2014	Yes	6 681	442	6 239	0	0	0	6 681
	2015	Yes	6 418	889	5 529	0	0	0	6 418
	2017	Yes	394 582	50 054	344 528	0	0	0	394 582
	2018	Yes	82 929	36 472	46 457	0	0	0	82 929
Israel	2014	Yes	1 727	0	1 727	0	0		1 727
	2015	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Italy	2014	Yes	493 908	…	…	0	0		
	2015	Yes	485 006	…	…	0	0		485006
	2017	Yes	427 288	…	…		0	0	427288
	2018	Yes	421 807	…	…	0	0		421807
Japan	2014	Yes	1 394 406	6 532	1 387 874	0	0		1 394 406
	2015	Yes	1 361 430	5 637	1 355 793	0	0	0	1 361 430
	2017	Yes	1 355 003	6 573	1 348 430				1 355 003
	2018	—	—	—	—	—	—	—	—
Jordan	2014	Yes	40	0	40	25	0		65
	2015	Yes	45	0	45	30	0		75
	2017	Yes	13	0	13	0	0	0	13
	2018	Yes	13	0	13	0	0	0	13
Kazakhstan	2014	Yes	16 776	1 677	15 099	104 352	29 133	…	…
	2015	Yes	11 411	5 477	5 934	9 337	24 927	…	45 675
	2017	—	—	—	—	—	—	—	—
	2018	Yes	16 329	2 699	13 630	2 594	5 990		24 913

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Kuwait	2014	—	—	—	—	—	—	—	—
	2015	Yes	837	121	716	0	0		837
	2017	Yes	8 271	207	8 064	454			8 725
	2018	Yes	7 285	174	7 111	473	0	0	7 758
Kyrgyzstan	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	0			6 619	1 207		7 828
	2017	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…
Lebanon	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Libya	2014	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—
	2017	Yes	3 226	1 107	2 119	22 430	0		25 656
	2018	Yes	3 760	1 217	2 543	29 008	0		32 768
Luxembourg	2014	Yes	3 767	0	3 767	0	0	0	3 767
	2015	Yes	3 299	0	3 299	0	0	0	3 299
	2017	—	—	—	—	—	—	—	—
	2018	Yes	2 757	0	2 757	0	0	0	2 757
Malaysia	2014	Yes	17 899	0	17 899	0	0		17 899
	2015	Yes	23 354	0	23 354	0	0		23 354
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Maldives	2014	No							
	2015	Yes	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—
	2018	Yes	13	1	12	83	0		96
Malta	2014	—	—	—	—	—	—	—	—
	2015	…	…	…	…	…	…	…	…
	2017	Yes	374	0	374	0	0	0	374
	2018	—	—	—	—	—	—	—	—
Mauritius	2014	Yes	76	…	…	28	0		104
	2015	Yes	88	…	…	0	0		88
	2017	—	—	—	—	—	—	—	—
	2018	Yes	…	…	…	…	…	…	…
Mexico	2014	…	…	…	…	…	…	…	…
	2015	Yes	75 951	75 951	0	0	0		75 951
	2016	Yes	…	…	…	…	…	…	…
	2017	Yes	…	…	…	…	…	…	88 737
Mongolia	2014	Yes	2 674	12	2 662	0	0	0	2 674
	2015	Yes	3 348	40	3 308	0	0	0	3 348
	2017	Yes	3 644	18	3 626	0	0	0	3 644
	2018	Yes	3 224	22	3 202	0	0	0	3 224

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Morocco	2014	Yes	0	…	…	100	0	0	100
	2015	Yes	0	…	…	100	0	0	100
	2017	—	—	—	—	—	—	—	—
	2018	Yes	…	…	…	…	0	…	661
Myanmar[2]	2014	Yes	44	0	44	0	0	0	44
	2015	Yes	35	0	35	0	0	0	35
	2017	Yes	15	0	15	0	0	0	15
	2018	Yes	8	0	8	0	0	0	8
Namibia	2014	—	—	—	—	—	—	—	—
	2015	Yes	1 007	0	1 007	0	0	0	1 007
	2017	Yes	1 228	0	1 228	0	0	0	1 228
	2018	…	…	…	…	…	…	…	…
Nepal	2014	No	…	…	…	…	…	…	…
	2015	Yes	20	10	10	80	0	0	100
	2017	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…
New Zealand	2014	Yes	41 669	0	41 669	0	0	0	41 669
	2015	Yes	50 360	6	50 354	0	0	0	50 360
	2017	Yes	56 891	1	56 890	0	0	0	56 891
	2018	Yes	62 543	1	62 542	0	0	0	62 543
North Macedonia	2014	Yes	150	80	70	0	0		150
	2015	Yes	190	…	…	120	0		310
	2017	Yes	208	…	…	0	0		208
	2018	Yes	…	…	…	…	…	…	…
Norway	2014	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—
	2017	Yes	16 001	0	16 001	0	0	0	16 001
	2018	Yes	15 954	0	15 954	0	0	0	15 954
Oman	2014	Yes	305	0	305	0	0		305
	2015	Yes	497	3	494	0	0		497
	2017	—	—	—	—	—	—	—	—
	2018	Yes	919	3	916	16	0		935
Panama	2014	—	—	—	—	—	—	—	—
	2015	Yes	3 982	…	…	49 392	2 980	0	56 373
	2016	Yes	4 603	…	…	…	…	…	4 603
	2017	Yes	…	…	…	…	…	…	3 935
Paraguay	2014	…	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2016	Yes	…	…	…	…	…	…	…
	2017	…	…	…	…	…	…	…	…
Peru	2014	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…
	2016	Yes	…	…	…	…	…	…	2 784
	2017	Yes	…	…	…	…	…	…	48 612

[2] Data cover the National Blood Centre only.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Philippines	2014	—	—	—	—	—	—	—	—
	2015	Yes	11 351	…	…	91	3 677		15 119
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Poland	2014	Yes	51 147	…	…	440	1 774	0	53 361
	2015	Yes	48 992	…	…	1 011	1 580	0	51 583
	2017	Yes	22 298	…	…	277	22	1	22 598
	2018	Yes	…	…	…	…	…	…	50 360[3]
Portugal	2014	Yes	6 312	…	…	0	0		6 312
	2015	Yes	6 631	…	…	0	0		6 631
	2017	Yes	5 214	1	5 213	0	0		5 214
	2018	Yes	4 860	1	4 859	0	0		4 860
Qatar	2014	No							
	2015	Yes	678	0	678	0	0		678
	2017	Yes	756	3	759	0	0	0	756
	2018	Yes	973	7	966	0	0	0	973
Republic of Korea	2014	Yes	915 161	…	…	…	…		915 161
	2015	Yes	901 413	…	…	…	…		901 413
	2017	Yes	787 847	13 061	774 786	…	…		787 847
	2018	Yes	761 534	11 038	750 496	0	0	0	761 534
Republic of Moldova	2014	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—
	2018	Yes	11 397	…	…	634	129		12 160
Romania	2014	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—
	2017	Yes	6 813	7	6 806	0	0	0	6 813
	2018	Yes	6 718	0	6 718	1	0	0	6 718
Russian Federation	2014	Yes	681 074	…	…		120 807		801 881
	2015	Yes	612 040	…	…	0	77 948		689 988
	2017	Yes	480 109	…	…	0	70 558		550 667
	2018	Yes	463 800	…	…	0	75 206		539 006
Rwanda	2014	No							
	2015	Yes	100	0	100	0	0	0	100
	2017	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…
Saudi Arabia	2014	Yes	12 300	8 400	3 900	14 250	0		26 550
	2015	Yes	16 600	3 800	12 800	1 600	0	0	18 200
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Serbia	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—

[3] This number is the units of apheresis platelets that was collected during the year. In addition, 143258 units of apheresis plasma and 92 units of apheresis red cells were also reported.

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Singapore	2014	Yes	9 337	10	9 327	0	0	0	9 337
	2015	Yes	9 335	15	9 320	0	0	0	9 335
	2017	Yes	9 041	58	8 983	0	0	0	9 041
	2018	Yes	8 382	20	8 362	0	0	0	8 382
Slovakia	2014	Yes	5 156	…	…	…	…	…	…
	2015	Yes	5 298	0	5 298	0	0	0	5 298
	2017	Yes	5 511	0	5 511	0	0	0	5 511
	2018	Yes	5 624	0	5 624	0	0	0	5 624
Slovenia	2014	Yes	1 160	…	…	0	0	0	1 160
	2015	Yes	3 048	…	…	0	0	0	3 048
	2017	Yes	4 647	0	4 647	0	0	0	4 647
	2018	Yes	3 344	0	3 344	0	0	0	3 344
South Africa	2014	Yes	23 610	108	23 502	0	0	0	23 610
	2015	Yes	23 809	84	23 725	0	0	0	23 809
	2017	Yes	19 205	67	18 790	0	0	0	19 205
	2018	…	…	…	…	…	…	…	…
Spain	2014	Yes	54 601	…	…	…	…		54 601
	2015	Yes	55 899	…	…	…	…		55 899
	2017	Yes	70 798	…	…	0	0		70 798
	2018	—	—	—	—	—	—	—	—
Sri Lanka	2014	Yes	1 318	0	1 318	0	0		1 318
	2015	Yes	1 534	0	1 534	0	0	0	1 534
	2017	Yes	1 958	0	1 958	0	0	0	1 958
	2018	Yes	1 598	0	1 598	0	0	0	1 598
Sweden	2014	Yes	45 403	0	45 403	0	0		45 403
	2015	Yes	45 435	0	45 435	0	0		45 435
	2017	Yes	40 108	0	40 108	0	0		40 108
	2018	Yes	37 882	0	37 882	0	0		37 882
Switzerland	2014	Yes	19 659	0	19 659	0	0		19 659
	2015	Yes	18 425	0	18 425	0	0		18 425
	2017	Yes	17 098	…	…	0	0		17 098
	2018	Yes	17 797	…	…	0	0		17 797
Tajikistan	2014	Yes	…	…	…	…	…	…	…
	2015	Yes	4 327	2 456	1 871	150	7 049		11 526
	2017	…	…	…	…	…	…	…	…
	2018	Yes	0	0	0	0	425	0	425
Thailand	2014	Yes	15 865	0	15 865	0	0	0	15 865
	2015	Yes	17 773	0	17 773	0	0	0	17 773
	2017	Yes	31 579	0	31 579	0	0	0	31 579
	2018	Yes	378 479	0	378 479	0	0	0	378 479
Tunisia	2014	Yes	…	…	…	…	…	…	…
	2015	No							
	2017	Yes	210	190	20	742	0	0	952
	2018	Yes	59	…	…	963	0		1 022

Country	Data year	Blood donations collected through apheresis procedures	No. apheresis donations collected						
			VNRD	VNRD from first-time donors	VNRD from repeat donors	Family/ replacement donations	Paid donations	Others	Total no. of donations
Turkey	2014	Yes	30 323	7 642	22 681	0	0	0	30 323
	2015	Yes	33 347	4 609	28 738	0	0	0	33 347
	2017	Yes	…	…	…	…	…	…	…
	2018	—	—	—	—	—	—	—	—
United Arab Emirates	2014	Yes	40	…	…	…	0		10 241[4]
	2015	Yes	24 050	…	…	142	0		24 192
	2017	—	—	—	—	—	—	—	—
	2018	Yes	4 863	491	4 231	251	2 144		7 258
United Kingdom of Great Britain and Northern Ireland[5]	2014	Yes	14 384	104	14 280	0	0	0	14 384
	2015	Yes	13 917	78	13 845	0	0	0	13 917
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
United States of America	2014	Yes	1 069 936	53 115	1 016 821	157	0	0	1 070 093
	2015	Yes	1 093 319	55 268	1 038 051	146	0	0	1 093 465
	2017	Yes	1 025 451	51 810	910 940	149	0	18	1 025 618
	2018	Yes	1 353 287	72 136	414 095	384	0	0	1 353 784
Uruguay	2014	…	…	…	…	…	…	…	…
	2015	Yes	…	…	…	…	…	…	…
	2016	Yes	…	…	…	…	…	…	1 706
	2017	Yes	2 118	…	…	…	…	…	2 118
Venezuela (Bolivarian Republic of)	2014	—	—	—	—	—	—	—	—
	2015	Yes	10 384	—	—	0	0		10 384
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Viet Nam	2014	Yes	2 258	2 082	176	592	33 291	0	36 141
	2015	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—
Zimbabwe	2014	Yes	71	0	71	0	0	0	71
	2015	Yes	111	0	111	0	0	0	111
	2017	Yes	250			0	0	0	250
	2018	…	…	…	…	…	…	…	…

[4] Units of apheresis platelets issued.

[5] Subnational data provided by Scottish National Blood Transfusion Service and Welsh Blood Service.

Annex 4. Laboratory test requirements for screening donated blood for transfusion-transmissible infections (TTIs), 2007/2018

Y: Required for all donations.
S: Required for selected donations.
Blank cell: Not required.
… Not reported/not available.
— No response.
* Data of 2017/2018 was not available. Data of earlier years were listed in the table.

Country	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria			HTLV-1/2	
	Ab	Ag	NAT	HBsAg	Anti-HBc Ab	NAT	Anti-HCV Ab	Ag	NAT	Serological testing	Others	Ab	Others	Smear microscopy	Ag	Others	Ab	Others
Afghanistan	Y	Y		Y			Y			Y								
Albania	Y	Y	S	Y		S	Y		S	Y								
Algeria*	Y	Y		Y			Y			Y								
Andorra	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Angola*	Y	Y		Y			Y			Y				Y				
Antigua and Barbuda	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Argentina	Y	Y		Y	Y		Y	Y		Y		Y					Y	
Armenia*	Y	Y		Y	Y		Y			Y								
Australia*	Y		Y	Y	S	Y	Y		Y	Y						S[1]	Y	
Austria	Y		Y	Y			Y		Y	Y								
Azerbaijan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bahamas	Y	Y		Y	Y		Y			Y							Y	
Bahrain	Y	Y		Y	Y		Y			Y				Y				
Bangladesh	Y			Y			Y			Y					Y			
Barbados	Y	Y		Y			Y			Y							Y	
Belarus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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		Y							S	
Bhutan	Y	Y		Y	Y		Y			Y				Y				
Bolivia	Y	Y		Y			Y			Y		Y				Y		
Bosnia and Herzegovina	Y			Y			Y			Y								
Botswana	Y			Y			Y			Y					S			
Brazil	Y	Y	Y	Y	Y	Y	Y			Y		Y		Y[2]			Y	
Brunei Darussalam	Y	Y		Y			Y			Y								
Bulgaria	Y	Y		Y			Y	Y		Y								
Burkina Faso	Y	Y		Y			Y			Y								
Burundi*	Y	Y		Y			Y	Y		Y								
Cabo Verde*	Y	Y		Y			Y	Y		Y								
Cambodia	Y			Y			Y			Y								
Cameroon	Y			Y			Y			Y								
Canada	Y	.	Y	Y	Y	Y	Y		Y	Y		S					Y	
Central African Republic*	Y	Y		Y			Y			Y		S						
Chad*	Y	Y		Y			Y			Y								

[1] Antibody screening.
[2] Or antigen test.

Country	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria			HTLV-1/2	
	Ab	Ag	NAT	HBsAg	Anti-HBc Ab	NAT	Anti-HCV Ab	Ag	NAT	Serological testing	Others	Ab	Others	Smear microscopy	Ag	Others	Ab	Others
Chile	Y	Y		Y	Y		Y	Y		Y		Y					Y	
China	Y	Y	Y	Y		Y	Y		Y	Y							S	
Colombia	Y	Y	S	Y	Y	S	Y		S	Y		Y		S			Y	
Comoros*	Y			Y			Y			Y								
Congo	Y	Y		Y			Y	Y		Y								
Cook Islands	Y			Y			Y			Y								
Costa Rica	Y	Y		Y	Y		Y			Y		Y					Y	
Côte d'Ivoire	Y	Y		Y			Y			Y								
Croatia	Y	Y	Y	Y		Y	Y		Y	Y								
Cuba	Y		S	Y		S	Y		S	Y								
Cyprus	Y		Y	Y	Y		Y	Y	Y	Y								
Czechia	Y	Y		Y			Y			Y								
Democratic People's Republic of Korea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Democratic Republic of the Congo*	Y	S		Y			Y			Y				S				
Denmark	Y	Y	Y	Y	S	Y	Y		Y							S[3]		
Djibouti	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dominica	Y			Y						Y							Y	
Dominican Republic	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
Ecuador	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y					S	
Egypt	Y	Y	Y	Y		Y	Y		Y	Y								
El Salvador	Y	Y		Y	S		Y			Y		Y						
Equatorial Guinea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Eritrea*	Y	Y		Y			Y			Y								
Estonia	Y	Y	Y	Y		Y	Y			Y								
Eswatini	Y	Y	Y	Y		Y	Y		Y	Y					Y			
Ethiopia	Y	Y		Y			Y			Y								
Fiji	Y	Y		Y	Y		Y			Y				S[4]				
Finland	Y	Y	Y	Y		Y	Y		Y					S[5]				
France	Y		Y	Y	Y	Y	Y		Y	Y		S					S	
Gabon	Y	Y		Y	Y		Y	Y		Y								
Gambia*	Y	Y		Y			Y			Y				S[6]				
Georgia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Germany*	Y		Y	Y	Y	S	Y		Y	Y								
Ghana	Y	Y		Y			Y			Y								
Greece	Y	Y	Y	Y	S	Y	Y	S	Y	Y						S	Y	
Grenada	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guatemala	Y	Y		Y	Y		Y			Y		Y						
Guinea	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guinea-Bissau	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guyana	Y	Y		Y			Y			Y		Y		Y			Y	
Haiti	Y	Y		Y			Y			Y							Y	
Honduras	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y					Y	

[3] Indirect fluorescent antibody test (IFAT).

[4] Or antigen test.

[5] Or antigen test.

[6] Or antigen test.

Country	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria			HTLV-1/2	
	Ab	Ag	NAT	HBsAg	Anti-HBc Ab	NAT	Anti-HCV Ab	Ag	NAT	Serological testing	Others	Ab	Others	Smear microscopy	Ag	Others	Ab	Others
Hungary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Iceland	Y	Y		Y			Y								S			
India*	Y			Y			Y			Y				Y	Y[7]			
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Israel*	Y		Y	Y		Y	Y		Y	Y							Y	
Italy	Y	Y	Y	Y		Y	Y		Y	Y						S[8]		
Jamaica	Y	Y		Y			Y			Y							Y	
Japan	Y		Y	Y	Y	Y	Y		Y	Y		S					Y	
Jordan	Y	Y		Y	Y		Y			Y								
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	Y						S[9]	Y	
Kyrgyzstan	Y	Y		Y	Y		Y			Y				Y				
Lao People's Democratic Republic	Y	Y		Y			Y			Y								
Latvia	Y	Y	Y	Y		Y	Y		Y	Y								
Lebanon	Y	Y		Y	Y	S	Y			Y								
Lesotho	Y	Y		Y			Y			Y								
Liberia*	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
Libya	Y	Y		Y	Y		Y			Y								
Lithuania	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Luxembourg	Y	Y	Y	Y	S	Y	Y		Y	Y		S				S[10]	S	
Madagascar	Y			Y			Y			Y					Y			
Malawi	Y	Y		Y			Y			Y				Y				
Malaysia	Y	Y	S	Y		S	Y		S	Y				S				
Maldives	Y			Y			Y			Y								
Mali	Y	Y		Y			Y	Y		Y								
Malta	Y	Y		Y	Y		Y			Y								
Marshall Islands	Y			Y			Y			Y								
Mauritania*	Y			Y			Y			Y								
Mauritius*	Y	Y		Y			Y			Y								
Mexico	Y	Y		Y			Y			Y		Y		S				
Micronesia (Federated States of)	Y			Y			Y			Y								
Monaco	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mongolia	Y	Y	Y	Y		Y	Y		Y	Y								
Montenegro	Y	Y		Y			Y			Y								
Morocco	Y	Y		Y			Y	Y		Y								
Mozambique	Y	Y		Y			Y			Y								
Myanmar	Y	Y	S	Y		S	Y		S	Y				S				

[7] Or antigen test.

[8] Antibody test.

[9] Antibody test.

[10] Antibody test.

Country	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria			HTLV-1/2	
	Ab	Ag	NAT	HBsAg	Anti-HBc Ab	NAT	Anti-HCV Ab	Ag	NAT	Serological testing	Others	Ab	Others	Smear microscopy	Ag	Others	Ab	Others
Namibia	Y		Y	Y		Y	Y		Y	Y								
Nauru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nepal	Y			Y			Y			Y				S[11]				
Netherlands*	Y		Y	Y	Y	Y	Y		Y	Y						S[12]	S	
New Zealand	Y	Y	Y	Y		Y	Y		Y	Y		S				S[13]	S	
Nicaragua	Y	Y		Y	S		Y	Y		Y		Y						
Niger*	Y	Y		Y			Y			Y								
Nigeria	Y	Y		Y	Y		Y	Y		Y								
Niue	Y			Y			Y			Y								
North Macedonia	Y	Y		Y			Y			Y								
Norway	Y	Y		Y	S		Y			S					S		S	
Oman	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y							Y	
Pakistan	Y	Y	S	Y	Y	S	Y	Y	S	Y				Y[14]				
Palau	Y			Y			Y			Y								
Panama	Y	Y		Y	Y		Y			Y		Y					Y	
Papua New Guinea	Y			Y						Y								
Paraguay	Y	Y		Y	Y		Y			Y		Y					Y	
Peru	Y	S		Y	Y		Y			Y				S[15]			Y	
Philippines*	Y	Y		Y	Y		Y			Y				Y[16]				
Poland	Y		Y	Y		Y	Y		Y	Y								
Portugal	Y		Y	Y	Y	Y	Y		Y	Y		S				S	S	
Qatar	Y	Y	Y	Y	Y	Y	Y		Y	Y					S	S	Y	
Republic of Korea	Y		Y	Y		Y	Y		Y	Y						S[17]	S	
Republic of Moldova	Y	Y	Y	Y	Y		Y		Y	Y								
Romania	Y	Y		Y			Y	Y		Y							Y	
Russian Federation	Y	Y	Y	Y		Y	Y		Y	Y								
Rwanda*	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	
Samoa	Y			Y			Y			Y								
San Marino	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sao Tome and Principe*	Y			Y			Y			Y					Y			
Saudi Arabia*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				Y[18]			Y	
Senegal	Y	Y		Y			Y			Y								
Serbia*	Y	Y		Y			Y			Y								
Seychelles*	Y	Y		Y			Y	Y		Y							Y	
Sierra Leone	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Singapore	Y		Y	Y		Y	Y		Y	Y						S		

[11] Or antigen test.
[12] Antibody test.
[13] Antibody test.
[14] Or antigen test.
[15] Or antigen test.
[16] Or antien test.
[17] Antibody test.
[18] Or antigen test.

Country	HIV1+2			Hepatitis B			Hepatitis C			Syphilis		Chagas disease		Malaria			HTLV-1/2	
	Ab	Ag	NAT	HBsAg	Anti-HBc Ab	NAT	Anti-HCV Ab	Ag	NAT	Serological testing	Others	Ab	Others	Smear microscopy	Ag	Others	Ab	Others
Slovakia	Y	Y		Y	Y		Y			Y								
Slovenia	Y	Y	Y	Y		Y	Y		Y	Y								
Solomon Islands	Y			Y			Y			Y								
Somalia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
South Africa	Y	Y	Y	Y	S	Y	Y	S	Y	Y								
South Sudan	Y	Y		Y			Y			Y								
Spain	Y		Y	Y		Y	Y		Y	Y		S				S[19]	S	
Sri Lanka	Y	Y	S	Y	Y	S	Y	Y	S	Y				Y				
Sudan*	Y	Y		Y			Y			Y								
Suriname	Y	Y		Y			Y			Y		Y		Y			Y	
Sweden	Y	Y		Y	Y		Y	Y		Y		S			S		S	
Switzerland	Y		Y	Y		Y	Y		Y	Y		S				S[20]		
Syrian Arab Republic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tajikistan	Y	Y	Y	Y		Y	Y	Y	Y	Y				Y				
Thailand	Y	Y	Y	Y		Y	Y		Y	Y								
Timor-Leste	Y	Y		Y	Y		Y	Y		Y		Y		Y	Y	Y		
Togo	Y	Y		Y			Y	y		Y								
Tonga	Y	Y		Y			Y	Y		Y								
Trinidad and Tobago	Y	Y		Y			Y			Y		Y					Y	
Tunisia	Y	Y		Y			Y	Y		Y								
Turkey	Y	Y	Y	Y		Y	Y		Y	Y								
Turkmenistan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuvalu	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Uganda	Y	Y		Y			Y			Y								
Ukraine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
United Arab Emirates	Y	Y	Y	Y	Y	Y	Y		Y	Y						S	Y	
United Kingdom of Great Britain and Northern Ireland*	Y	Y	Y	Y		Y	Y		Y	Y						S[21]	S	
United Republic of Tanzania	Y	Y		Y	Y		Y	Y										
United States of America	Y		Y	Y	Y	Y	Y		Y	Y		S					Y	
Uruguay	Y	Y		Y	Y		Y	Y		Y		Y					Y	
Uzbekistan*	Y	Y		Y			Y			Y				Y				
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				S			S	
Yemen	Y	Y		Y	Y		Y	Y		Y						Y		
Zambia*	Y	Y		Y			Y			Y								
Zimbabwe	Y	Y		Y			Y			Y								

[19] Antibody test.

[20] Antibody test.

[21] Antibody test.

Annex 5. Number and proportion of donations tested positive/reactive for TTI markers 2014–2018

… Not reported/not available.
Blank cell: 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	2014	75	122 695	0.06	3 878	122 695	3.16	733	122 695	0.59	449	122 695	0.36
	2015	105	155 715	0.07	4 752	155 715	3.05	949	155 715	0.60	610	155 715	0.39
	2017	89	198 274	0.04	8 733	257 695	3.38	2 541	257 695	0.98	…	257 696	…
	2018	88	230 777	0.04	5 657	247 608	2.28	2 058	247 608	0.83	1 486	247 608	0.60
Albania	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	13	29 688	0.04	1 527	29 688	5.14	218	29 688	0.73	54	29 688	0.18
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	5	23 312	0.02	1 060	23 312	4.54	132	23 312	0.59	18	23 312	0.08
Algeria	2014	262	517 775	0.05	1 297	517 775	0.25	590	517 775	0.11	975	517 775	0.19
	2015	266	488 850	0.05	1 424	488 850	0.28	706	488 850	0.14	1 514	477 459	0.32
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	237	592 680	0.04	1 007	592 680	0.17	534	592 680	0.09	1 067	592 680	0.18
Andorra	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Angola	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	852	106 493	0.80	6 603	106 493	6.20	852	106 493	0.80	1 065	106 493	1.00
Antigua and Barbuda	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2016	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
Argentina	2014	1 727	959 233	0.18	1 918	959 233	0.20	3 837	959 233	0.40	9 592	959 233	1.00
	2015	2 067	980 988	0.21	5 016	980 988	0.51	3 345	980 988	0.34	10 202	980 988	1.04
	2016	1 664	917 868	0.18	1 757	917 868	0.19	2 496	917 868	0.27	8 600	917 868	0.94
	2017	1 654	1 102 875	0.15	2 206	1 102 875	0.20	3 529	1 102 875	0.32	13 786	1 102 875	1.25
Armenia	2014	10	13 695	0.07	279	13 695	2.04	56	13 695	0.41	14	13 695	0.10
	2015	4	13 716	0.03	274	13 716	1.99	31	13 716	0.23	18	13 716	0.13
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Australia[1]	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	3	1 273 051	<0.001	75	1 273 051	0.006	48	1 273 051	0.004	…	…	…
	2018	7	1 329 849	<0.001	79	1 329 849	0.006	53	1 329 849	0.004	…	…	…

[1] Data source: Transfusion-transmissible infections in Australia: 2019 Surveillance Report. Kirby Institute, UNSW Sydney, and the Australian Red Cross Lifeblood; 2018; Transfusion-transmissible infections in Australia: 2019 Surveillance Report. Kirby Institute, UNSW Sydney, and the Australian Red Cross Lifeblood; 2019. Available at: http://www.kirby.unsw.edu.au. Number of total donations was used as denominator to calculate the proportion.

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	%*
Austria[2]	2014	4	251 126	0.002	15	251 126	0.006	4	251 126	0.002	15	251 126	0.006
	2015	1	258 488	<0.001	13	258 488	0.005	11	258 488	0.004	25	258 488	0.01
	2017	…	…	…	…	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Azerbaijan	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Bahamas	2014	0	4 563	0	6	4 563	0.13	2	4 563	0.04	16	4 563	0.35
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2016	8	5 759	0.13	29	5 759	0.50	16	5 759	0.27	45	5 759	0.78
	2017	8	5 619	0.14	30	5 619	0.53	15	5 619	0.27	45	5 619	0.80
Bahrain	2014	0	19 412	0	15	19 412	0.07	19	19 412	0.09	20	19 412	0.10
	2015	0	19 152	0	13	19 152	0.06	15	19 152	0.07	20	19 152	0.10
	2017	4	18 837	0.02	10	18 837	0.05	8	18 837	0.04	19	18 837	0.10
	2018	1	19 546	0.005	7	19 546	0.03	5	19 546	0.02	20	19 546	0.10
Bangladesh	2014	74	651 718	0.01	5 529	651 718	0.84	462	651 718	0.07	754	651 718	0.11
	2015	46	679 681	0.01	5 428	679 681	0.80	752	679 681	0.11	605	679 681	0.09
	2017	66	703 424	0.009	5 033	703 424	0.71	240	703 424	0.03	954	703 424	0.14
	2018	77	761 115	0.01	5 797	761 115	0.76	246	761 115	0.03	1 179	761 115	0.15
Barbados	2014	7	4 686	0.15	15	4 686	0.32	24	4 686	0.51	57	4 686	1.22
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2016	12	5 238	0.23	16	5 238	0.31	17	5 238	0.33	85	5 238	1.62
	2017	7	5 243	0.13	10	5 243	0.19	21	5 243	0.40	69	5 243	1.32
Belarus	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Belgium	2014	4	596 054	0.0006	47	596 054	0.007	16	596 054	0.002	38	596 054	0.006
	2015[3]	4	282 465	0.001	35	282 465	0.01	10	282 465	0.004	29	282 465	0.01
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Belize	2014	7	4 329	0.16	22	4 329	0.50	10	4 329	0.23	29	4 329	0.67
	2015	11	5 564	0.19	14	5 564	0.25	5	5 564	0.09	25	5 564	0.44
	2016	8	5 826	0.14	27	5 826	0.46	15	5 826	0.26	5	5 826	0.09
	2017	6	6 092	0.10	10	6 092	0.16	3	6 092	0.05	12	6 092	0.20
Benin	2014	1 233	74 011	1.67	5 155	74 011	6.97	1 518	74 011	2.05	574	74 011	0.77
	2015	1 129	71 644	1.58	5 409	71 644	7.55	1 477	71 644	2.06	566	71 644	0.79
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	1 523	83 203	1.83	5 009	83 203	6.02	1 290	83 203	1.55	1 257	83 203	1.51
Bhutan	2014	7	9 375	0.07	71	9 375	0.75	27	9 375	0.29	117	9 375	1.25
	2015	3	8 794	0.03	66	8 794	0.75	7	8 794	0.08	138	8 794	1.57
	2017	5	9 997	0.05	67	9 997	0.67	0	9 997	0	170	9 997	1.70
	2018	0	7 770	0	64	7 770	0.82	0	7 770	0	144	7 770	1.85

[2] The denominators are the total numbers of donors tested.

[3] The denominators are the total number of donors that were 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	%*
Bolivia	2014	251	101 166	0.25	248	101 166	0.25	365	101 166	0.36	760	101 166	0.75
	2015	263	108 132	0.24	245	108 132	0.22	409	108 132	0.37	832	108 132	0.76
	2016	357	112 536	0.32	267	112 536	0.24	480	112 536	0.43	1 121	112 536	1.00
	2017	348	119 663	0.29	284	119 663	0.24	358	119 663	0.30	911	119 663	0.76
Bosnia and Herzegovina	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	1	15 209	0.007	24	15 209	0.16	7	15 209	0.05	2	15 209	0.01
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Botswana	2014	314	25 510	1.23	261	25 510	1.02	68	25 510	0.26	475	25 510	1.86
	2015	521	27 444	1.89	213	27 444	0.77	219	27 444	0.70	505	27 444	1.84
	2017	344	…	1.43	245	…	1.02	106	…	0.44	360	…	1.49
	2018	352	24 088	1.46	289	24 088	1.20	108	24 088	0.45	368	24 088	1.53
Brazil	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	5 336	2 356 414	0.22	4 939	2 356 414	0.21	7 795	2 356 414	0.33	25 467	2 356 414	1.08
	2016	7 294	3 463 353	0.21	6 976	3 463 353	0.20	10 898	3 463 353	0.32	34 863	3 463 353	1.01
	2017	8 636	3 143 417	0.28	7 179	3 143 417	0.23	10 289	3 143 417	0.33	33 738	3 143 417	1.07
Brunei Darussalam	2014	1	15 522	0.006	49	15 522	0.31	16	15 522	0.10	64	15 522	0.41
	2015	3	15 668	0.02	39	15 668	0.24	9	15 668	0.06	54	15 668	0.34
	2017	4	16 639	0.02	38	16 639	0.23	6	16 639	0.04	35	16 639	0.21
	2018	7	15 988	0.04	28	15 988	0.18	8	15 988	0.05	45	15 988	0.28
Bulgaria	2014	5	169 481	0.003	1 085	169 481	0.64	119	169 481	0.07	220	169 481	0.13
	2015	12	168 334	0.007	718	168 334	0.43	89	168 334	0.05	137	168 334	0.08
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	143	169 633	0.08	962	169 633	0.57	380	169 633	0.22	504	169 633	0.30
Burkina Faso	2014	2 702	113 114	2.38	11 021	113114	9.74	5 969	113 114	5.27	2 149	113 114	1.89
	2015	2 314	119 366	1.93	10 575	119366	8.85	5 363	119 366	4.49	2 553	119 366	2.14
	2017	3 660	115 874	3.16	10 810	115874	9.33	5 467	115 874	4.72	1 946	115 874	1.68
	2018	1 434	106 235	1.34	6 672	106,235	6.28	2 877	106 235	2.71	791	106 235	0.74
Burundi	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	517	60 084	0.86	1 743	60 084	2.9	2 992	60 084	4.97	100	60 084	0.16
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	330	82 524	0.40	1 733	82 524	2.20	2 475	82 524	3.00	495	82 524	0.60
Cabo Verde	2014	4	3 255	0.12	65	3 255	1.99	2	3 255	0.06	4	3 255	0.12
	2015	3	3 317	0.09	45	3 317	1.35	1	3 317	0.03	3	3 317	0.09
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	1	3 352	0.03	53	3 352	1.58	2	3 352	0.06	6	3 352	0.18
Cambodia	2014	78	52 864	0.15	2 744	52 864	5.19	297	52 864	0.56	293	52 864	0.55
	2015	83	54 829	0.15	2 668	54 829	4.87	265	54 829	0.48	292	54 829	0.51
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Cameroon	2014	2 373	49 083	4.83	3 111	49 083	6.33	1 843	49 083	3.75	1 663	49 083	3.38
	2015	2 199	73 062	3.01	3 128	73 062	4.28	971	73 062	1.32	1 336	73 062	1.82
	2017	2 085	91 047	2.29	4 478	91 047	4.92	2 102	91 047	2.31	2 187	91 047	2.40
	2018	1 277	94 873	1.35	3 783	94 873	3.99	2 776	94 873	2.93	1 862	94 873	1.96

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	%*
Canada	2014	3	864 173	<0.001	38	864 173	0.004	50	864 173	0.006	31	864 173	0.004
	2015	4	923 224	<0.001	54	923 224	0.006	56	923 224	0.006	32	923 224	0.003
	2017	2	850 585	<0.001	59	850 585	0.007	52	850 585	0.006	46	850 585	0.005
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Central African Republic	2014	635	12 215	5.20	1 390	12 215	11.38	573	12 215	4.69	901	12 215	7.38
	2015	733	15 480	4.74	1 566	15 480	10.12	322	15 480	2.08	781	15 480	5.04
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	868	21 000	4.13	2 132	21 000	10.15	341	21 000	1.62	418	21 000	1.99
Chad	2014	1 775	77 490	2.29	7 310	77 490	9.43	2 387	77 490	3.08	1 766	77 490	2.28
	2015	1 948	79 535	2.44	7 154	79 535	8.99	1 671	79 535	2.10	2 750	79 535	3.45
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	1 664	74 468	2.23	6 673	74 447	8.96	1 656	74 229	2.23	2 691	73 322	3.67
Chile	2014	275	235 323	0.11	18	235 283	0.008	26	235 789	0.01	2 208	235 533	0.93
	2015	103	246 900	0.04	29	246 900	0.01	57	246 900	0.02	782	246 900	0.32
	2016	…	…	0.04	…	…	0.19	…	…	0.01	…	…	0.40
	2017	110	265 653	0.04	37	265 653	0.01	70	265 653	0.03	…	…	…
China	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	18 909	13 312 002	0.14	69 873	13 312 002	0.42	41 831	13 312 002	0.31	63 734	13 312 002	0.48
	2017	…	…	…	…	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Colombia	2014	1 711	756 370	0.22	1 092	756 370	0.14	2 956	756 370	0.39	11 420	756 370	1.51
	2015	1 568	795 792	0.20	1 176	795 792	0.15	2 771	795 792	0.35	11 378	795 792	1.43
	2016	1 726	817 004	0.21	971	817 004	0.12	3 016	817 004	0.37	10 714	817 004	1.31
	2017	1 746	830 291	0.21	994	830 291	0.12	3 058	830 291	0.37	9 870	830 291	1.19
Comoros	2014	0	2 320	0	90	2 320	3.88	54	2 320	2.33	22	2 320	0.95
	2015	0	2 391	0	48	2 391	2.01	8	2 391	0.33	10	2 391	0.42
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	0	1 680	0	53	1 680	3.15	15	1 512	0.99	27	1 370	1.97
Congo	2014	1 552	54 294	2.86	3 896	54 294	7.18	1 361	54 294	2.51	111	54 294	0.20
	2015	1 589	60 137	2.64	3 960	60 137	6.58	975	60 137	1.62	94	60 137	0.16
	2017	1 394	56 111	2.48	3 220	56 112	5.74	628	56 111	1.12	72	56 111	0.13
	2018	2 216	88 332	2.51	5 164	88 332	5.85	1 352	88 332	1.53	138	88 332	0.16
Cook Islands	2014	0	193	0	0	193	0	193	193	0	0	193	0
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	0	262	0	0	262	0	0	262	0	0	262	0
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Costa Rica	2014	55	73 057	0.07	303	73 057	0.41	155	73 057	0.21	403	73 057	0.62
	2015	82	75 733	0.10	87	75 733	0.11	168	75 733	0.22	332	75 733	0.43
	2016	55	77 607	0.07	54	77 607	0.07	131	77 607	0.17	636	77 607	0.82
	2017	60	77 389	0.08	204	77 389	0.26	138	77 389	0.18	372	77 389	0.48
Côte d'Ivoire	2014	334	168 025	0.20	11 396	168 025	6.78	2 995	168 025	1.78	522	168 025	0.31
	2015	62	155 534	0.04	10 873	155 534	6.99	2 456	155 534	1.58	623	155 534	0.4
	2017	84	153 754	0.05	7 572	153 754	4.92	2 082	153 754	1.35	375	153 754	0.24
	2018	…	158 539	…	11 010	158 539	6.94	3 473	158 539	2.19	312	158 539	0.20

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	%*
Croatia	2014	2	180 005	0.001	33	180 005	0.01	7	180 005	0.003	7	180 005	0.004
	2015	4	191 442	0.002	22	191 442	0.01	7	191 442	0.003	10	191 442	0.005
	2017	2	199 725	0.001	17	199 725	0.009	5	199 725	0.003	6	199 725	0.003
	2018	2	195 563	0.001	7	195 563	0.004	1	195 563	0.0005	5	195 563	0.003
Cuba	2014	99	415 902	0.02	1 714	415 902	0.41	3 837	415 902	0.92	2 123	415 902	0.51
	2015	81	416 923	0.01	2 457	416 923	0.58	4 960	416 923	1.19	2 207	416 923	0.52
	2016	—	—	—	—	—	—	—	—	—	—	—	—
	2017	2 269	411 979	0.55	1 669	411 979	0.41	3 799	411 979	0.92	1 424	411 979	0.35
Cyprus	2014	19	31 444	0.06	15	31 444	0.04	75	31 444	0.24	15	31 444	0.04
	2015	21	30 711	0.06	18	30 711	0.05	41	30 711	0.13	17	30 711	0.05
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	2	63 008	0.003	24	63 008	0.04	5	63 008	0.008	19	63 008	0.03
Czechia	2014	6	1 095 000	<0.001	37	1 095 000	0.003	138	1 095 000	0.01	35	1 095 000	0.003
	2015	9	1 092 400	<0.001	27	1 092 400	0.002	149	1 092 400	0.01	26	1 092 400	0.002
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	0	635 883	0	10	635 883	0.002	15	635 883	0.002	9	635 883	0.001
Democratic People's Republic of Korea	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Democratic Republic of the Congo	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	8 403	397 530	2.11	10 924	388 735	2.81	9 663	373 277	2.59	6 722	370 670	1.81
Denmark	2014	—	—	—	—	—	—	—	—	—			
	2015	—	—	—	—	—	—	—	—	—			
	2017	1	272 593	<0.001	11	272 593	0.004	3	272 593	0.001			
	2018	0	278 975	0	4	278 975	0.001	2	278 975	<0.001			
Djibouti	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Dominica	2014	0	1 006	0	2	1 006	0.19				19	1 006	1.88
	2015	—	—	—	—	—	—				—	—	—
	2016	1	1 165	0.09	2	1 165	0.17				13	1 165	1.12
	2017	2	893	0.22	0	893	0				6	893	0.67
Dominican Republic	2014	256	92 621	0.27	945	92 622	1.02	194	92 623	0.21	653	92 624	0.70
	2015	134	77 840	0.17	742	78 533	0.94	116	78 533	0.14	462	78 533	0.58
	2016	191	107 943	0.18	1 666	107 943	1.54	191	107 943	0.18	759	107 943	0.70
	2017	159	105 134	0.15	723	105 134	0.69	174	105 134	0.17	542	105 134	0.52
Ecuador	2014	687	232 215	0.29	524	232 215	0.22	587	232 215	0.25	2 912	232 215	0.25
	2015	905	246 887	0.36	572	246 887	0.23	608	246 887	0.24	3 499	246 887	1.41
	2016	842	236 370	0.36	491	236 370	0.21	570	236 370	0.24	3 309	236 370	1.40
	2017	783	249 363	0.31	377	249 363	0.15	643	249 363	0.26	3 010	249 363	1.21

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	%*
Egypt	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	534	55 673	0.95	3 086	55 673	5.54	…	55 673	…	373	55 673	0.66
	2017	1 017	469 958	0.22	3 863	469 958	0.82	11 730	469 958	2.49	1 594	469 958	0.34
	2018	985	428 759	0.23	3 269	428 759	0.76	9 978	428 759	2.33	1 038	428 759	0.24
El Salvador	2014	89	98 090	0.09	115	98 090	0.11	220	98 090	0.22	1 166	98 090	1.18
	2015	118	92 882	0.13	116	92 882	0.12	840	92 882	0.10	498	92 882	1.5
	2016	98	104 616	0.09	108	104 616	0.10	128	104 616	0.12	1 551	104 616	1.48
	2017	342	101 605	0.34	172	101 605	0.17	153	101 605	0.15	1 266	101 605	1.25
Equatorial Guinea	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Eritrea	2014	21	8 069	0.26	192	8 069	2.38	67	8 069	0.83	13	8 069	0.16
	2015	16	7 022	0.23	171	7 022	2.43	45	7 022	0.64	25	7 022	0.36
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	26	9 275	0.28	110	9 275	1.19	24	9 275	0.26	45	9 275	0.49
Estonia	2014	3	60 531	0.004	5	60 531	0.008	32	60 531	0.05	13	60 531	0.02
	2015	5	59 013	0.008	8	59 013	0.01	22	59 013	0.03	17	59 013	0.02
	2017	1	55 057	0.002	7	55 057	0.01	24	55 057	0.04	13	55 057	0.02
	2018	3	53 486	0.006	5	53 486	0.009	21	53 486	0.04	14	53 486	0.03
Eswatini	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	149	14 675	1.02	340	14 675	2.32	69	14 675	0.47	101	14 675	0.69
	2014	—	—	—	—	—	—	—	—	—	—	—	—
Ethiopia	2014	692	87 685	0.78	3 055	87 685	3.48	619	87 685	0.71	192	87 685	0.21
	2015	659	128 153	0.51	3 771	128 153	2.94	865	128 153	0.67	730	128 153	0.57
	2017	655	186 853	0.35	2 875	186 853	1.54	385	186 853	0.21	1 792	186 853	0.96
	2018	653	186 497	0.35	1 754	186 497	0.94	386	186 497	0.21	1 788	186 497	0.96
Fiji	2014	12	13 432	0.09	164	13 432	1.22	0	13 432	0	445	13 432	3.31
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Finland	2014	2	214 713	0	3	214 713	0	5	214 713	0	5	214 713	0
	2015	1	211 536	<0.001	7	211 536	0.003	7	211 536	0.003	4	211 536	0.001
	2017	1	204 024	<0.001	3	204 024	0.001	4	204 024	0.002	6	204 024	0.003
	2018	2	206 610	0.001	0	206 610	0	1	206 610	<0.001	7	205 391	0.003
France	2014	36	2 826 712	0.001	256	2 826 712	0.009	127	2 826 712	0.004	369	2 826 712	0.01
	2015	24	2 958 120	<0.001	225	2 958 120	0.007	110	2 958 120	0.003	410	2 958 120	0.01
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	25	2 926 942	<0.001	139	2 926 942	0.005	75	2 926 942	0.003	336	2 926 942	0.01
Gabon	2014				918	20 897	4.39						
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	300	20 293	1.48	688	21 347	3.22	102	21 624	0.47	384	21 457	1.79
	2018	303	23 000	1.32	762	23 000	3.31	155	23 000	0.67	388	23 000	1.69

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	%*
Gambia	2014	71	10 686	0.66	511	8 029	6.36	18	6 556	0.27	2	3 560	0.05
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	15	11 989	0.13	423	11 378	3.71	13	11 161	0.12	5	6 641	0.08
Georgia	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Germany	2014	67	7 201 986	<0.001	362	7 201 986	0.005	233	7 201 986	0.003	354	7 201 986	0.005
	2015	58	6 762 964	<0.001	303	6 762 964	0.004	221	6 762 964	0.003	265	6 762 964	0.003
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Ghana	2014	3 157	150 322	2.10	4 059	150 322	2.70	3 006	150 322	1.90	7 516	150 322	4.99
	2015	1 863	155 250	1.20	4 580	155 250	2.95	1 856	155 250	1.19	4 658	155 250	3.00
	2017	1 987	162 226	1.22	4 150	162 226	2.56	3 105	162 226	1.91	3 871	162 226	2.39
	2018	479	55 315	0.87	1 537	55 315	2.78	768	55 315	1.39	1 897	55 315	3.43
Greece	2014	38	541 662	0.007	430	541 662	0.08	107	541 662	0.02	137	541 662	0.02
	2015[4]	39	367 261	0.01	426	367 261	0.12	108	367 261	0.03	145	367 261	0.04
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Grenada	2014	4	1 267	0.31	9	1 267	0.71	3	1 267	0.23	3	1 267	0.23
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Guatemala	2014	174	114 404	0.15	396	114 404	0.34	649	114 404	0.56	1 789	114 404	0.56
	2015	299	126 244	0.24	474	126 244	0.38	683	126 244	0.54	1 782	126 244	1.14
	2016	364	135 396	0.27	584	135 396	0.43	764	135 396	0.56	1 682	135 396	1.24
	2017	234	136 241	0.17	500	136 241	0.37	768	136 241	0.56	1 560	136 241	1.15
Guinea	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Guinea-Bissau	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Guyana	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	95	9 696	0.98	137	9 696	1.41	104	9 696	1.07	82	9 696	0.84
	2016	87	10 200	0.85	156	10 200	1.52	118	10 200	1.15	61	10 200	0.59
	2017	61	9 755	0.63	183	9 755	1.88	103	9 755	1.06	109	9 755	1.12
Haiti	2014	282	28 867	0.98	987	28 867	3.42	247	28 867	0.86	743	28 867	2.57
	2015	220	27 752	0.79	1 020	27 752	3.67	235	27 752	0.84	972	27 752	3.50
	2016	157	25 699	0.61	838	25 699	3.26	175	25 699	0.68	656	25 699	2.55
	2017	148	28 018	0.53	656	28 018	2.34	155	28 018	0.55	440	28 018	1.57

[4] The denominators are the total number of donors that were 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	%*
Honduras	2014	162	58 108	0.28	150	58 126	0.26	260	58 167	0.45	463	58 148	0.80
	2015	67	71 660	0.09	130	71 660	0.18	269	71 660	0.37	499	71 660	0.69
	2016	88	79 830	0.11	147	79 793	0.18	301	79 797	0.38	719	79 830	0.90
	2017	96	80 850	0.12	192	80 850	0.24	310	80 850	0.38	589	80 850	0.73
Hungary	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Iceland	2014	0	12 328	0	0	12 328	0	0	12 328	0			
	2015	0	11 608	0	0	11 608	0	0	11 608	0			
	2017	0	11 520	0	0	11 520	0	0	11 520	0			
	2018	—	—	—	—	—	—	—	—	—	—	—	—
India	2014	…	…	0.14	…	…	0.85	…	…	0.33	…	…	0.18
	2015	…	…	0.14	…	…	0.86	…	…	0.34	…	…	0.15
	2017	…	…	0.13	…	…	0.89	…	…	0.29	…	…	0.18
	2018	…	…	0.14	…	…	0.78	…	…	0.33	…	…	0.23
Indonesia	2014	8 028	3 043 194	0.26	46 161	3 045 103	1.51	12 113	3 042 770	0.39	26 287	3 044 167	0.86
	2015	7 601	2 860 082	0.26	40 116	2 860 994	1.40	11 442	2 860 141	0.40	23 808	2 860 767	0.83
	2017	8 473	3 474 125	0.24	42 437	3 474 125	1.22	11 536	3 474 125	0.33	22 056	3 474 125	0.63
	2018	11 791	3 813 871	0.31	41 642	3 816 122	1.09	11 710	3 812 617	0.31	24 368	3 814 533	0.64
Iran (Islamic Republic of)	2014	68	2 052 549	0.003	2 728	2 052 549	0.13	899	2 052 549	0.04	16	2 052 549	<0.001
	2015	69	2 066 849	0.003	2 425	2 066 849	0.11	847	2 066 849	0.04	10	2 066 849	<0.001
	2017	51	20 72 370	0.002	1 107	2 072 370	0.53	543	2 072 370	0.03	6	2 072 370	<0.001
	2018	51	2 069 273	0.002	937	2 069 273	0.05	360	2 069 273	0.02	5	2 069 273	<0.001
Iraq	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Ireland	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Israel	2014	3	262 605	0.001	96	262 605	0.03	117	262 605	0.04	19	262 605	0.007
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Italy	2014	128	3 081 777	0.004	731	3 081 777	0.02	309	3 081 777	0.01	535	3 081 777	0.02
	2015	105	3 061 479	0.003	501	3 061 479	0.01	180	3 061 479	0.005	456	3 061 479	0.01
	2017	80	3 006 726	0.003	599	3 006 726	0.02	232	3 006 726	0.008	499	3 006 726	0.02
	2018	83	2 991 082	0.003	521	2 991 082	0.02	163	2 991 082	0.005	548	2 991 082	0.02
Jamaica	2014	129	29 390	0.44	221	29 390	0.75	78	29 390	0.27	507	29 390	1.23
	2015	87	28 869	0.30	186	28 869	0.64	144	28 869	0.49	581	28 869	2.01
	2016	…	…	…	…	…	…	…	…	…	…	…	…
	2017	…	…	0.30	…	…	0.65	…	…	0.44	…	…	1.25

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	%*
Japan	2014	2 765	4 999 127	0.06	22 436	4 999 127	0.45	1 358	4 999 127	0.03	4 662	4 999 127	0.09
	2015	2 966	4 909 156	0.06	20 243	4 909 156	0.41	1 351	4 909 156	0.03	4 553	4 909 156	0.09
	2017	3 020	4 775 648	0.06	14 023	4 775 648	0.29	1 335	4 775 648	0.03	4 670	4 775 648	0.10
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Jordan	2014	3	122 789	0.002	3 142	122 789	2.56	135	122 789	0.11	3	122 789	0.002
	2015	…	117 884	…	2 947	117 884	2.50	153	117 884	0.13	15	117 884	0.01
	2017	…	…	…	…	…	…	…	…	…	…	…	…
	2018	1	64 823	0.002	87	64 823	0.13	55	64 823	0.08	13	64 823	0.02
Kazakhstan	2014	73	291 574	0.02	3 513	291 574	1.20	2 123	291 574	0.72	2 599	291 574	0.89
	2015	83	284 012	0.02	3 208	284 012	1.12	1 857	284 012	0.65	2 458	284 012	0.86
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	62	211 469	0.03	1 287	211 469	0.61	631	211 469	0.30	1 120	211 469	0.53
Kenya	2014	1 217	183 406	0.66	2 796	183 406	1.52	1 429	183 406	0.78	987	183 406	0.54
	2015	1 320	155 081	0.85	3 800	155 081	2.45	1 817	155 081	1.17	1 080	155 081	0.69
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	1 029	164 275	0.63	2 048	164 275	1.25	893	164 275	0.54	510	164 275	0.31
Kiribati	2014	2	1 849	0.11	286	1 849	15.46	0	1 849	0	231	1 849	12.49
	2015	0	2 171	0	146	2 171	6.72	0	2 171	0	50	2 171	2.30
	2017	0	1 436	0	150	1 443	10.39	0	1 430	0	28	1 408	1.99
	2018	0	2 171	0	146	2 171	6.73	0	2 171	0	50	2 171	2.30
Kuwait	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	11	77 700	0.01	77	77 700	0.10	173	77 700	0.22	127	77 700	0.16
	2017	85	82 937	0.10	44	82 937	0.05	124	82 937	0.15	136	82 937	0.16
	2018	90	85 847	0.10	66	85 847	0.08	168	85 847	0.20	93	85 847	0.11
Kyrgyzstan	2014	157	41 156	0.38	1 818	41 156	4.41	750	41 156	1.82	479	41 156	1.16
	2015	152	41 946	0.36	1 860	41 946	4.43	825	41 946	1.97	691	41 946	1.65
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Lao People's Democratic Republic	2014	31	35 047	0.08	1 544	35 047	4.40	64	35 047	0.18	1	35 047	0.002
	2015	28	36 740	0.08	1 572	35 740	5.28	42	36 740	0.11	4	36 740	0.01
	2017	97	45 735	0.21	1 916	45 735	4.19	59	45 735	0.13	37	45 735	0.08
	2018	129	49 070	0.26	1 855	49 070	3.78	61	49 070	0.12	40	49 070	0.08
Latvia	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	3	52 250	0.006	14	52 250	0.03	33	52 250	0.06	10	52 250	0.02
	2018	9	56 960	0.02	16	56 960	0.28	28	56 960	0.05	17	56 960	0.03
Lebanon	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Lesotho	2014	219	8 373	2.61	65	8 373	0.77	29	8 373	0.34	205	8 373	2.44
	2015	191	7 879	2.42	68	7 879	0.86	37	7 879	0.47	192	7 879	2.43
	2017	108	5 439	1.99	54	5 439	0.99	29	5 439	0.53	234	5 439	4.30
	2018	199	6 418	3.10	71	6 418	1.11	32	6 418	0.50	232	6 418	3.61

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	%*
Liberia	2014	5	578	0.86	59	578	10.20	2	578	0.35	2	578	0.35
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	256	11 023	2.32	1 510	11 023	13.70	44	11 023	0.40	143	11 023	1.30
Libya	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	58	142 572	0.04	233	142 572	0.23	255	142 572	0.18	22	142 572	0.02
	2018	75	148 330	0.05	281	148 330	0.19	200	148 330	0.13	31	148 330	0.02
Lithuania	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Luxembourg	2014	0	23 937	0	1	23 937	0.004	0	23 937	0	72	23 937	0.30
	2015	0	23 713	0	0	23 713	0	3	23 713	0.001	37	23 713	0.16
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	0	22 603	0	0	22 603	0	1	22 603	0.004	6	22 603	0.03
Madagascar	2014	90	30 970	0.29	1 081	30 970	3.49	280	30 970	0.90	445	30 970	1.43
	2015	69	33 162	0.21	1 094	33 162	3.29	201	33 162	0.60	395	33 162	1.19
	2017	167	39 210	0.43	1 542	39 210	5.93	376	39 210	0.96	375	39 210	0.96
	2018	225	48 923	0.46	2 163	48 923	4.42	507	48 923	1.04	507	48 923	1.04
Malawi	2014	1 530	52 065	2.94	1 625	52 065	3.12	436	52 065	0.84	1 191	52 065	2.29
	2015	1 204	52 160	2.31	1 666	52 160	3.19	505	52 160	0.97	1 230	52 160	2.36
	2017	1 046	60 938	1.72	1 295	60 938	2.13	825	60 938	1.36	1 405	60 938	2.31
	2018	1 008	63 000	1.60	1 512	63 000	2.40	1 890	63 000	3.00	1 449	63 000	2.30
Malaysia	2014	196	675 315	0.03	1 545	675 315	0.22	392	675 315	0.05	374	675 315	0.05
	2015	235	707 419	0.03	1 302	707 419	0.18	353	707 419	0.05	374	707 419	0.05
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Maldives	2014	6	10 651	0.05	44	10 651	0.41	60	10 651	0.56	30	10 651	0.28
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	5	6 562	0.08	9	6 562	0.14	26	6 562	0.40	3	6 562	0.05
Mali	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	1 279	45 034	2.84	7 014	45 034	15.57	1 561	45 034	3.47	56	45 034	0.12
	2017	1 136	48 508	2.34	5 200	48 508	10.72	743	48 508	1.53	0	48 508	0
	2018	829	56 006	1.48	5 634	56 006	10.06	935	56 006	1.67	22	56 006	0.04
Malta	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	0	17 014	0	2	17 014	0.01	1	17 014	0.005	2	17 014	0.01
	2017	0	15 917	0	2	15 917	0.01	0	15 917	0	0	15 917	0
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Marshall Islands	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	…	…	…	…

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	%*
Mauritania	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	34	18 393	0.18	2 301	18 393	12.51	1	18 393	0.005	79	18 393	0.43
Mauritius	2014	21	45 695	0.04	19	45 695	0.04	118	45 695	0.25	164	45 695	0.35
	2015	15	46 536	0.03	41	46 536	0.08	116	46 536	0.25	131	46 536	0.28
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	27	44 731	0.06	42	44 731	0.09	110	44 731	0.25	171	44 731	0.38
Mexico	2014	4 955	1 939 060	0.26	3 173	1 939 060	0.16	11 542	1 939 060	0.60	11 188	1 939 060	0.58
	2015	5 214	2 170 002	0.24	3 247	2 170 002	0.15	10 414	2 170 002	0.48	12 245	2 170 002	0.56
	2016	6 614	2 356 388	0.28	5 602	2 356 388	0.24	12 231	2 356 388	0.52	31 779	2 356 388	1.35
	2017	6 487	2 394 836	0.27	6 258	2 394 836	0.26	12 899	2 394 836	0.54	21 077	2 394 836	0.88
Micronesia (Federated States of)	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	2	1 721	0.12	14	1 721	0.81	3	1 721	0.17	31	1 721	1.80
	2017	0	1 667	0	14	1 667	0.84	0	1 667	0	17	1 667	1.02
	2018	0	1 736	0	14	1 736	0.81	0	1 736	0	18	1 736	1.04
Monaco	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Mongolia	2014	3	26 097	0.01	955	26 097	3.6	638	26 097	2.4	736	26 097	2.80
	2015	1	30 396	0.003	691	30 396	2.27	771	30 396	2.5	763	30 396	2.50
	2017	0	33 407	0	519	33 407	1.55	405	33 407	1.21	675	33 407	2.02
	2018	0	34 296	0	230	34 296	0.67	170	34 296	0.50	363	34 296	1.06
Montenegro	2014	0	16 651	0	11	16 651	0.17	2	16 651	0.03	9	16 651	0.14
	2015	1	17 159	0.006	9	17 159	0.05	6	17 159	0.03	9	17 159	0.05
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	2	18 653	0.01	10	18 653	0.05	3	18 653	0.02	23	18 653	0.12
Morocco	2014	56	296 946	0.02	2 698	296 946	0.90	118	296 946	0.04	3 810	296 946	1.28
	2015	94	297 073	0.01	2 859	297 073	0.96	630	297 073	0.04	3 689	297 073	1.24
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	49	321 336	0.02	2 909	321 336	0.91	37	321 336	0.01	5 115	321 336	1.59
Mozambique	2014	6 374	121 091	5.27	5 055	121 091	4.18	790	121 091	0.66	4 054	121 091	3.35
	2015	6 161	126 068	4.89	5 313	126 068	4.21	842	126 068	0.67	4 884	126 068	3.87
	2017	4 084	132 057	3.09	5 088	132 057	3.85	1 316	132 057	0.99	3 137	132 057	2.38
	2018	5 171	136 091	3.80	5 022	136 091	3.69	1 606	136 091	1.18	4 260	136 091	3.13
Myanmar	2014	565	313 662	0.18	7 497	313 662	2.39	1 569	313 662	0.5	2 509	313 662	0.79
	2015	798	379 088	0.21	8 719	379 088	2.30	1 895	379 088	0.50	3 411	379 088	0.90
	2017	848	421 659	0.20	8 186	421 659	1.94	1 546	421 659	0.37	3 165	421 659	0.75
	2018	879	457 657	0.19	7 779	457 657	1.70	1 473	457 657	0.32	3 221	457 657	0.70
Namibia	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015[5]	75	33 975	0.22	229	33 975	0.67	149	33 975	0.44	135	33 975	0.40
	2017	66	37 785	0.17	251	37 785	0.66	…	37 785	…	89	37 785	0.24
	2018	105	37 672	0.28	354	37 672	0.94	72	37 672	0.19	127	37 672	0.34

[5] 2016 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	%*
Nauru	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Nepal	2014	68	217 160	0.03	617	217 160	0.31	422	217 160	0.21	760	217 160	0.38
	2015	77	231 000	0.03	703	231 000	0.30	518	231 000	0.22	972	231 000	0.42
	2017	66	262 440	0.03	466	262 440	0.18	351	262 440	0.13	714	262 440	0.27
	2018	113	271 922	0.04	700	271 922	0.26	424	271 922	0.16	1 229	271 922	0.45
Netherlands	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
New Zealand	2014	1	162 337	<0.001	10	162 337	0.006	5	162 337	0.003	7	162 337	0.004
	2015	0	169 914	0	28	169 914	0.02	8	169 914	0.005	5	169 914	0.003
	2017	1	168 080	<0.001	19	168 080	0.01	6	168 080	0.004	16	168 080	0.01
	2018	0	174 705	0	13	174 705	0.007	5	174 705	0.003	8	174 705	0.005
Nicaragua	2014	53	75 035	0.07	158	75 035	0.21	226	75 035	0.30	222	75 035	0.29
	2015	68	74 955	0.09	136	74 955	0.18	254	74 955	0.33	236	74 955	0.31
	2016	65	76 697	0.09	175	76 697	0.23	210	76 697	0.27	440	76 697	0.57
	2017	49	84 682	0.06	164	84 682	0.19	225	84 682	0.27	251	84 682	0.30
Niger	2014	1 245	78 357	1.58	6 735	78 357	8.59	812	78 357	1.03	550	78 357	0.70
	2015	983	87 788	1.12	6 838	87 788	7.78	750	87 788	0.85	427	87 788	0.48
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	2 142	137 715	1.56	11 001	137 715	7.99	1 999	137 715	1.45	1 153	137 715	0.84
Nigeria	2014	1 088	80 043	1.35	4 600	80 043	5.74	1 428	80 043	1.78	829	80 043	1.03
	2015	1 318	98 985	1.33	6 409	98 985	6.47	1 689	98 985	1.70	1 253	98 985	1.26
	2017	971	74 240	1.31	4 110	74 240	5.54	1 826	74 240	2.46	823	74 240	1.11
	2018	1 972	165 605	1.19	6 102	165 605	3.68	3 689	165 605	2.23	1 522	165 605	0.92
Niue	2014	0	17	0	0	17	0	0	17	0	0	17	0
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	…	…	…	…
North Macedonia	2014	3	33 000	0.004	119	33 000	0.37	15	33 000	0.05	61	33 000	0.19
	2015	30	30 000	0.1	161	30 000	0.43	77	30 000	0.26	40	30 000	0.13
	2017	0	29 900	0	71	29 900	0.23	45	29 900	0.15	21	29 900	0.07
	2018	0	20 771	0	51	20 771	0.25	7	20 771	0.03	…	…	…
Norway	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	0	193 720	0	2	193 720	0.001	3	193 720	0.002	2	19 032	0.01
	2018	0	190 408	0	0	190 408	0	1	190 408	0.0005	0	11 5797	0
Oman	2014	9	57 635	0.01	699	57 635	1.21	203	57 635	0.35	50	57 635	0.08
	2015	9	56 640	0.02	976	56 640	1.70	170	56 640	0.30	70	56 640	0.12
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	8	58 342	0.01	326	58 342	0.56	213	58 342	0.37	91	58 342	0.16

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	%*
Pakistan	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	276	1 380 285	0.02	23 465	1 380 285	1.70	38 648	1 380 285	2.80	7 584	697 275	1.09
	2017	…	…	…	…	…	…	…	…	…	…	…	…
	2018	1 999	2 004 007	0,10	39 800	2 031 244	1.96	50 478	2 030 079	2.49	12 872	1 872 687	0.69
Palau	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	0	879	0	9	879	1.02	2	879	0.23	15	879	1.70
Panama	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	87	55 764	0.16	120	55 764	0.21	202	55 764	0.36	491	55 764	0.88
	2016	98	57 102	0.17	126	57 102	0.22	224	57 102	0.39	559	57 102	0.98
	2017	84	54 066	0.16	125	54 066	0.23	176	54 066	0.33	460	54 066	0.85
Papua New Guinea	2014	336	28 367	1.18	3 355	28 367	11.82				3 602	28 367	12.69
	2015	353	33 196	1.06	4 112	33 196	12.4				13	33 196	0.03
	2017	579	38 544	1.50	4 325	38 544	11.22				4 211	38 544	10.93
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Paraguay	2014	295	87 888	0.33	296	87 888	0.33	323	87 888	0.36	5 778	87 888	6.57
	2015	288	98 945	0.29	294	98 945	0.29	333	98 945	0.33	5 934	98 945	5.99
	2016	291	94 666	0.31	286	94 666	0.30	463	94 666	0.49	5 522	94 666	5.83
	2017	196	89 007	0.22	331	89 007	0.37	476	89 007	0.54	4 744	89 007	5.33
Peru	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2016	929	343 608	0.27	1 142	343 608	0.33	1 469	343 608	0.43	3 192	343 608	0.93
	2017	794	359 458	0.22	1 478	359 458	0.41	2 162	359 458	0.60	3 536	359 458	0.98
Philippines	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	1 183	866 295	0.13	20 787	868 289	2.39	2 291	867 551	0.26	4 373	867 865	0.50
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Poland	2014	41	1 235 400	0.003	394	1 235 400	0.03	457	1 235 400	0.03	158	1 235 400	0.01
	2015	46	1 276 284	0.003	337	1 276 284	0.02	305	1 276 284	0.02	151	1 276 284	0.01
	2017	35	1 305 998	0.003	220	1 305 998	0.02	203	1 305 998	0.02	164	1 305 998	0.01
	2018	34	1 293 424	0.003	204	1 293 424	0.02	187	1 293 424	0.01	134	1 293 424	0.01
Portugal	2014	26	353 459	0.01	41	353 459	0.01	22	353 459	0.01	…	…	…
	2015	28	337 580	0.01	37	337 580	0.01	21	337 580	0.01	…	…	…
	2017	13	325 043	0.004	30	325 043	0.009	22	325 043	0.007	108	325 043	0.03
	2018	10	314 091	0.003	16	314 091	0.005	9	314 091	0.003	90	314 091	0.03
Qatar	2014	7	25 099	0.02	63	25 099	0.25	60	25 099	0.23	57	25 099	0.22
	2015	4	27 038	0.02	77	27 038	0.28	59	27 038	0.21	54	27 038	0.192
	2017	9	27 389	0.03	61	27 389	0.22	164	27 389	0.60	101	27 389	0.37
	2018	4	30 125	0.01	38	30 125	0.13	59	30 125	0.20	62	30 125	0.21
Republic of Korea	2014	2 041	3 044 274	0.06	1 738	3 044 274	0.05	3 635	3 044 274	0.11	759	3 044 274	0.02
	2015	1 691	3 074 278	0.05	1 036	3 074 278	0.03	3 722	3 074 278	0.12	626	3 074 278	0.02
	2017	4 018	2 835 639	0.14	1 105	2 835 639	0.04	196	2 835 639	0.007	362	2 835 639	0.01
	2018	3 611	2 876 459	0.13	1 003	2 876 459	0.03	302	2 876 459	0.01	322	2 876 459	0.01

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	%*
Republic of Moldova	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	115	75 421	0.15	558	75 421	0.74	745	75 421	0.99	807	75 421	1.07
Romania	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	49	417 114	0.01	1 676	417 114	0.40	301	417 114	0.07	1 136	417 114	0.27
	2018	41	423 487	0.01	1 651	423 487	0.39	262	423 487	0.06	1 043	423 487	0.25
Russian Federation	2014	1 669	3 104 349	0.05	5 522	3 104 349	0.17	13 150	3 104 349	0.42	6 614	3 104 349	0.21
	2015	1 814	2 981 475	0.06	7 103	2 981 475	0.23	10 169	2 981 475	0.34	6 267	2 981 475	0.21
	2017	1 416	2 750 302	0.05	3 740	2 750 302	0.14	6 262	2 750 302	0.23	4 492	2 750 302	0.16
	2018	1 209	2 763 217	0.04	2 334	2 763 217	0.08	5 049	2 763 217	0.18	3 907	2 763 217	0.14
Rwanda	2014	168	42 789	0.39	475	42 789	1.11	466	42 789	1.09	265	42 789	0.62
	2015	208	53 436	0.39	593	53 436	1.11	582	53 436	1.09	331	53 436	0.62
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	43	65 512	0.07	549	65 512	0.84	328	65 512	0.50	254	65 512	0.39
Saint Kitts and Nevis	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	0	408	0	12	408	2.94	1	408	0.24	7	408	1.71
	2016	0	542	0	14	542	2.58	4	542	0.74	10	542	1.85
	2017	0	571	0	22	571	3.85	1	571	0.18	3	571	0.52
Saint Lucia	2014	2	2 456	0.08	31	2 456	1.26	3	2 456	0.12	43	2 456	1.75
	2015	4	2 463	0.16	22	2 463	0.89	1	2 463	0.04	34	2 463	1.38
	2016	4	2 563	0.16	13	2 563	0.51	2	2 563	0.08	23	2 563	0.90
	2017	4	2 773	0.14	12	2 773	0.43	2	2 773	0.07	26	2 773	0.94
Saint Vincent and the Grenadines	2014	1	995	0.10	8	995	0.80	3	995	0.30	27	995	2.71
	2015	1	1 028	0.09	5	1 028	0.48	2	1 028	0.19	23	1 028	2.23
	2016	1	1 103	0.09	9	1 103	0.81	2	1 103	0.18	10		0.91
	2017	2	1 295	0.15	11	1 295	0.85	2	1 295	0.15	12	1 295	0.93
Samoa	2014	0	0	0	78	1 712	4.55	12	1 712	0.70	0	0	0
	2015	10	2 479	0.40	84	2 479	3.39	1	2 479	0.04	7	2 479	0.28
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
San Marino	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	2014	3	869	0.35	116	869	13.35	1	424	0.24	1	869	0.12
	2015	7	1 010	0.69	88	1 010	8.71	4	908	0.44	8	1 010	0.79
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	5	1 194	0.42	93	1 194	7.79	6	1 194	0.50	18	1 194	1.50
Saudi Arabia	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—

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	%*
Senegal	2014	186	78 548	0.24	7 763	78 548	9.88	370	78 548	0.47	143	78 548	0.18
	2015	171	69 295	0.24	6 758	69 295	9.75	452	69 295	0.65	128	69 295	0.18
	2017	196	88 905	0.22	8 757	88 905	9.85	585	88 905	0.66	172	88 905	0.19
	2018	161	97 958	0.16	8 458	97 958	8.63	326	97 958	0.33	124	97 958	0.13
Serbia	2014	5	64 846	0.007	26	64 846	0.04	30	64 846	0.04	17	64 846	0.02
	2015	6	63 440	0.09	37	63 440	0.05	26	63 440	0.04	13	63 440	0.02
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Seychelles	2014	8	1 822	0.44	4	1 822	0.22	2	1 822	0.11	8	1 822	0.44
	2015	10	1 863	0.53	1	1 863	0.05	2	1 863	0.11	8	1 863	0.42
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Sierra Leone	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Singapore	2014	6	117 491	0.005	115	117 491	0.09	15	117 491	0.01	39	117 491	0.03
	2015	3	122 111	0.002	114	122 111	0.09	10	122 111	0.008	29	122 111	0.02
	2017	9	125 207	0.007	109	125 207	0.09	14	125 207	0.01	29	125 207	0.02
	2018	6	124 229	0.004	128	124 229	0.10	7	124 229	0.006	38	124 229	0.03
Slovakia	2014[6]	2	134 179	0.001	22	134 179	0.02	3	134 179	0.002	24	134 179	0.02
	2015	1	227 584	<0.001	18	227 584	0.007	14	227 584	0.006	28	227 584	0.01
	2017	1	221 297	<0.001	28	221 297	0.01	7	221 297	0.003	15	221 297	0.007
	2018	4	227 560	0.002	24	227 560	0.01	9	227 560	0.004	23	227 560	0.01
Slovenia	2014	3	87 826	0.003	9	87 826	0.01	4	87 826	0.004	4	87 826	0.004
	2015	0	87 697	0	9	87 697	0.01	4	87 697	0.004	4	87 697	0.004
	2017	0	89 580	0	5	89 580	0.005	1	89 580	0.001	5	89 580	0.005
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Solomon Islands	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Somalia	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
South Africa	2014	1 884	977 904	0.19	827	977 904	0.08	70	977 904	0.007	1 712	977 904	0.17
	2015	1 872	1 005 516	0.18	810	1 005 516	0.08	73	1 005 516	0.007	1 779	1 005 516	0.17
	2017	1 529	983 793	0.16	731	983 793	0.07	75	983 793	0.008	2 617	983 793	0.27
	2018	1 536	982 010	0.16	729	982 010	0.07	112	982 010	0.01	2 846	982 010	0.29
South Sudan	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	9	6 533	0.14	51	6 533	0.78	37	6 533	0.57	41	6 533	0.63

[6] The denominators are the total number of donors 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	%*
Spain	2014	131	1 671 325	0.007	408	1 671 325	0.02	188	1 671 325	0.01	633	1 671 325	0.03
	2015	119	1 699 817	0.007	355	1 699 817	0.02	184	1 699 817	0.01	793	1 699 817	0.04
	2017	98	1 681 793	0.006	283	1 681 793	0.02	140	1 681 793	0.008	660	1 681 793	0.04
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Sri Lanka	2014	26	381 685	0.006	394	381 685	0.10	654	381 685	0.17	152	381 685	0.04
	2015	21	397 034	0.005	409	397 034	0.10	800	397 034	0.2	175	397 034	0.04
	2017	28	423 668	0.007	618	423 668	0.15	905	423 668	0.21	152	423 668	0.04
	2018	29	450 640	0.006	513	450 640	0.11	898	450 640	0.20	107	450 640	0.02
Sudan	2014	2 014	257 107	0.78	10 344	238 679	4.33	4 909	241 470	2.03	7 309	249 485	2.92
	2015	…	…	0.70	…	…	4.30	…	…	1.15	…	…	3.26
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Suriname	2014	1	10 521	0.01	9	10 521	0.09	3	10 521	0.03	3	10 521	0.03
	2015	0	10 296	0	5	10 296	0.06	9	10 296	0.01	11	10 296	0.02
	2016	3	10 432	0.03	4	10 432	0.04	4	10 432	0.04	5	10 432	0.05
	2017	…	…	0.07	…	…	0.05	…	…	0.07	…	…	0.24
Sweden	2014	0	498 004	0	1	498 004	<0.001	1	498 004	<0.001	1	498 004	<0.001
	2015	1	525 569	<0.001	2	525 569	<0.001	1	525 569	<0.001	1	525 569	<0.001
	2017	1	499 944	<0.001	2	499 944	<0.001	2	499 944	<0.001	2	499 944	<0.001
	2018	0	491 036	0	0	491 036	0	2	491 036	0.0004	2	491 036	<0.001
Switzerland	2014	6	329 875	0.001	17	329 875	0.005	13	329 875	0.003	16	329 875	0.004
	2015	2	311 050	<0.001	34	311 050	0.01	8	311 050	0.002	21	311 050	0.006
	2017	2	282 507	<0.001	39	282 507	0.01	12	282 507	0.004	13	282 507	0.005
	2018	3	277 808	0.001	33	277 808	0.01	6	277 808	0.002	16	277 808	0.006
Syrian Arab Republic	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Tajikistan	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	89	42 935	0.21	1 027	42 935	2.39	460	42 935	0.37	546	42 935	1.27
	2017	46	40 219	0.11	1 506	40 219	3.74	1 296	40 219	3.22	1 741	40 219	4.33
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Thailand	2014	599	638 117	0.09	1 810	638 117	0.28	1 010	638 117	0.16	626	638 117	0.10
	2015	670	665 920	0.10	1 716	665 920	0.25	1 049	665 920	0.15	557	665 920	0.08
	2017	921	1 065 275	0.09	3 151	1 065 275	0.29	1 623	1 065 275	0.15	1 114	1 065 275	0.10
	2018	821	1 122 497	0.07	821	1 122 497	0.32	821	1 122 497	0.12	821	1 122 497	0.09
Timor-Leste	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	12	4 460	0.27	267	4 460	5.99	22	4 460	0.49	196	4 460	4.40
Togo	2014	320	48 408	0.66	1 152	48 408	2.37	684	48 408	1.41	…	48 408	…
	2015	295	44 751	0.65	1 521	44 751	3.39	538	44 751	1.20	239	31 585	0.75
	2017	190	42 906	0.44	1 051	42 906	2.45	343	42 906	0.80	151	42 906	0.35
	2018	251	50 023	0.50	1 385	50 023	2.77	285	50 023	0.57	149	50 023	0.30

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	%*
Tonga	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	…	…	…	…	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Trinidad and Tobago	2014	…	…	…	…	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2016	42	21 870	0.19	37	21 870	0.17	23	21 870	0.11	242	21 870	1.11
	2017	49	21 645	0.23	199	21 645	0.92	91	21 645	0.42	243	21 645	1.12
Tunisia	2014	17	216 752	0.008	3 201	217 217	1.47	799	216 941	0.37	168	216 907	0.07
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	…	…	…	…	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…	…	…	…	…
Turkey	2014	2 379	1 860 258	0.13	8 545	1 860 258	0.46	2 141	1 860 258	0.12	2 421	1 860 258	0.13
	2015	123	1 937 932	0.006	6 597	1 937 932	0.33	284	1 937 932	0.01	1 175	1 937 932	0.06
	2017	218	2 391 573	0.009	6 370	2 391 573	0.27	320	2 391 573	0.01	1 166	2 391 573	0.05
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Turkmenistan	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Tuvalu	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Uganda	2014	2 371	217 945	1.08	5 019	217 945	2.30	3 467	217 945	1.59	291	217 945	0.13
	2015	1 470	230 995	0.63	5 426	230 995	2.34	3 572	230 995	1.54	656	230 995	0.28
	2017	…	…	…	…	…	…	…	…	…	…	…	…
	2018	1 783	254 750	0.70	11 464	254 750	4.50	9 681	254 750	3.80	1 774	254 750	0.70
Ukraine	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
United Arab Emirates	2014	10	101 849	0.01	86	101 849	0.08	181	101 849	0.18	200	101 849	0.20
	2015	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	12	132 849	0.009	97	80 896	0.12	201	132 849	0.15	151	80 896	0.19
United Kingdom of Great Britain and Northern Ireland[7]	2014	0	285 381	0	10	285 381	0.004	14	285 381	0.005	9	285 381	0.003
	2015	1	271 327	<0.001	8	271 327	0.002	14	271 327	0.005	12	271 327	0.004
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
United Republic of Tanzania	2014	1 876	128 915	1.46	6 304	128 915	4.89	2 017	128 915	1.56	1 656	128 915	1.28
	2015	1 087	67 980	1.60	3 467	67 980	5.10	1 395	67 980	2.05	1 367	67 980	2.01
	2017	3 509	233 953	1.50	11 464	233 953	4.90	1 170	233 953	0.50	4 445	233 953	1.90
	2018	3 227	307 835	1.05	13 613	307 835	4.42	1 092	307 835	0.35	6 801	307 835	2.21

[7] Subnational data provided by Scottish National Blood Transfusion Service and Welsh Blood Service.

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 States of America	2014	158	6 566 047	0.002	549	6 566 147	0.008	1 102	6 566 135	0.02	1 611	6 564 758	0.02
	2015	109	6 243 465	0.001	433	6 243 488	0.006	1 084	6 243 479	0.02	1 246	6 242 194	0.01
	2017	428	5 998 504	0.007	1 776	5 998 753	0.03	2 552	5 998 914	0.04	1 767	5 997 133	0.03
	2018	855	6 951 668	0.01	1 950	6 951 952	0.03	3 184	6 951 892	0.05	3 032	6 949 911	0.04
Uruguay	2014	90	100 164	0.09	102	100 164	0.10	320	100 164	0.31	510	100 164	0.50
	2015	103	96 304	0.11	102	96 304	0.10	295	96 304	0.30	399	96 304	0.41
	2016	108	90 064	0.12	105	90 064	0.12	266	90 064	0.30	366	90 064	0.41
	2017	90	92 674	0.10	145	92 674	0.16	314	92 674	0.34	451	92 674	0.49
Uzbekistan	2014	921	135 859	0.67	6 876	135 859	5.06	4 135	135 859	3.04	1 860	135 859	1.36
	2015	852	142 723	0.59	6 580	142 723	4.61	3 832	142 723	2.68	2 255	142 723	1.57
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Vanuatu	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	0	1 322	0	17	1 322	1.29	3	1 322	0.23	12	1 322	0.91
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Venezuela (Bolivarian Republic of)	2014	775	312 048	0.24	1 145	312 048	0.36	881	312 048	0.28	5 209	312 048	1.66
	2015	737	299 879	0.24	1 154	299 879	0.38	1 016	299 879	0.33	4 644	299 879	1.54
	2016	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
Viet Nam	2014	3 242	1 037 154	0.31	25 583	1 037 154	2.47	6 313	1 037 154	0.61	3 421	1 037 154	0.33
	2015	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—
Yemen	2014	—	—	—	—	—	—	—	—	—	—	—	—
	2015	32	9 687	0.33	1 468	9 687	15.3	77	9 687	0.80	25	9 687	0.25
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	131	17 913	0.73	341	17 913	1.90	138	17 913	0.77	158	17 913	0.88
Zambia	2014	3 824	109 269	3.49	6 009	109 269	5.49	1 529	109 269	1.40	1 311	109 269	1.20
	2015	3 003	100 110	3.00	5 305	100 110	5.30	900	100 110	0.90	900	100 110	0.90
	2017	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	
Zimbabwe	2014	304	58 603	0.51	334	58 603	0.56	0	58 603	0	34	58 603	0.06
	2015	259	59 947	0.43	207	59 947	0.34	1	59 947	0.001	34	59 947	0.05
	2017	199	65 164	0.31	147	65 164	0.23	1	65 164	0.002	40	65 164	0.06
	2018	317	82 257	0.39	169	82 257	0.21	4	82 257	0.005	42	82 257	0.05

Annex 5. Number and proportion of donations tested positive/reactive for TTI markers 2014–2018 (continued)

… Not reported/not available.
Blank cell: Not required/not applicable.
— No response.
* Proportion, expressed as positive/reactive per 100 donations tested.

Country	Data year	Chagas disease			Malaria			HTLV-1/2		
		Positive/ reactive, no.	No. donations screened	%*	Positive/ reactive, no.	No. screened	%*	Positive/ reactive, no.	No. screened	%*
Angola	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018				…	…	…			
Argentina	2014	21 103	959 233	2.46				1 535	959 233	0.18
	2015	14 711	980 988	1.50				1 348	980 988	0.14
	2016	18 126	917 868	1.98				1 387	917 868	0.15
	2017	16 653	1 102 875	1.51				2 426	1 102 875	0.22
Australia	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	3	1 273 051	<0.001
	2018	—	—	—	—	—	—	3	1 329 849	<0.001
Bahamas	2014							4	4 563	0.09
	2015							…	…	…
	2016							19	5 759	0.33
	2017							29	5 619	0.52
Bangladesh	2014				48	651 718	0.007			
	2015				72	679 681	0.01			
	2017				77	703 424	0.009			
	2018				120	761 115	0.02			
Barbados	2014							20	4 686	0.42
	2015	—	—	—	—	—	—	—	—	—
	2016							25	5 238	0.48
	2017							17	5 243	0.32
Belize	2014	8	4 329	0.18						
	2015	7	5 564	0.12						
	2016	14	5 826	0.24						
	2017	7	6 092	0.12						
Bhutan	2014				0	9 375	0			
	2015				0	2 066	0			
	2017				0	9 997	0			
	2018				0	7 770	0			
Bolivia	2014	3 948	101 166	3.90						
	2015	2 717	108 132	2.51						
	2016	2 428	112 536	2.16						
	2017	2 462	119 663	2.06						

Country	Data year	Chagas disease			Malaria			HTLV-1/2		
		Positive/ reactive, no.	No. donations screened	%*	Positive/ reactive, no.	No. screened	%*	Positive/ reactive, no.	No. screened	%*
Brazil	2014	—	—	—	—	—	—	—	—	—
	2015	5 096	2 356 414	0.22				5 581	2 356 414	0.24
	2016	5 721	3 463 353	0.17				7 924	3 463 353	0.23
	2017	8 088	3 143 417	0.26				9 631	3 143 417	0.31
Cambodia	2014				6	52 864	0.01			
	2015				…	…	…			
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Canada	2014	5	15 026	0.03				11	923 224	0.001
	2015	1	15 265	0.006				9	864 173	0.001
	2017	0	18 600	0				13	850 585	0.002
	2018	—	—	—				—	—	—
Chile	2014	280	235 897	0.11				184	235 735	0.07
	2015	310	246 900	0.13				276	246 900	0.11
	2016	…	…	0.08				…	…	0.05
	2017	235	265 653	0.09				147	265 653	0.06
Colombia	2014	3 088	756 370	0.40				2 136	704 280	0.30
	2015	3 015	795 792	0.38				2 551	795 792	0.32
	2016	2 194	817 004	0.27				2 035	817 004	0.25
	2017	1 577	830 291	0.19				1 818	830 291	0.22
Costa Rica	2014	107	73 057	0.15				57	73 057	0.08
	2015	101	75 733	0.13				95	75 733	0.13
	2016	110	77 607	0.14				62	77 607	0.08
	2017	187	77 389	0.24				78	77 389	0.10
Dominica	2014							8	1 006	0.79
	2015							6	1 037	0.57
	2016							8	1 165	0.69
	2017							9	893	1.01
Dominican Republic	2014							151	92 626	0.16
	2015							159	77 563	0.21
	2016							223	107 943	0.21
	2017							296	105 134	0.28
Ecuador	2014	576	232 215	0.25				2	15 342	0.01
	2015	843	246 887	0.34				10	16 848	0.06
	2016	962	236 370	0.41				76	19 381	0.39
	2017	1 333	249 363	0.53				157	23 883	0.66[1]
El Salvador	2014	2 260	98 090	2.30						
	2015	2 458	92 882	2.65						
	2016	4 043	104 616	3.86						
	2017	2 104	101 605	2.07						
Finland	2014									
	2015									
	2017				0	686	0	0	7	0
	2018				38	694	5.48	0	5	0

[1] HTLV-1/2 screening was performed in 9.58% of the units

Country	Data year	Chagas disease			Malaria			HTLV-1/2		
		Positive/ reactive, no.	No. donations screened	%*	Positive/ reactive, no.	No. screened	%*	Positive/ reactive, no.	No. screened	%*
France	2014							30	2 826 712	0.001
	2015							17	2 958 120	<0.001
	2017	—	—	—	—	—	—	—	—	—
	2018	1	68 805	0.001	1 332	229 662	0.58	23	2 926 942	<0.001
Greece	2014							1	541 662	<0.001
	2015							3	367261[2]	<0.001
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Guatemala	2014	1 187	114 404	1.04						
	2015	1 173	126 244	0.93						
	2016	1 126	135 396	0.83						
	2017	985	136 241	0.72						
Guyana	2014	—	—	—				—	—	—
	2015	32	9 698	0.33				98	9 696	1.01
	2016	46	10 200	0.45				84	10 200	0.82
	2017	155	9 755	1.59				99	9 755	1.02
Haiti	2014							198	28 867	
	2015							215	27 752	0.78
	2016							197	25 699	0.77
	2017							151	28 018	0.54
Honduras	2014	550	58 172	0.96				104	57 820	0.18
	2015	531	71 660	0.74				107	71 555	0.15
	2016	567	79 830	0.71				138	79 830	0.17
	2017	626	80 850	0.77				147	80 850	0.18
India	2014				…	…	0.8			
	2015				…	…	0.7			
	2017				…	…	0.07			
	2018				…	…	0.05			
Indonesia	2014				907	140 258	0.64			
	2015				287	107 198	0.26			
	2017				218	74 056	0.29			
	2018				175	129 902	0.13			
Iran (Islamic Republic of)	2014							308	411 444	0.07
	2015							245	410 687	0.05
	2017							191	435 784	0.04
	2018							146	450 613	0.03
Israel	2014							0	262 605	0
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Jamaica	2014							444	29 390	1.51
	2015							440	28 869	1.52
	2016							…	…	…
	2017							455	32 092	1.42

[2] Total number of donors tested.

Country	Data year	Chagas disease			Malaria			HTLV-1/2		
		Positive/ reactive, no.	No. donations screened	%*	Positive/ reactive, no.	No. screened	%*	Positive/ reactive, no.	No. screened	%*
Japan	2014							2 590	4 999 127	0.05
	2015							2 477	4 909 156	0.05
	2017							5 381	4 775 648	0.11
	2018							—	—	—
Kuwait	2014	—	—	—	—	—	—	—	—	—
	2015				637	12 679	5.02	21	77 700	0.02
	2017				497	9 858	5.04	28	82 937	0.03
	2018				1 218	11 442	10.65	38	85 847	0.04
Luxembourg	2014	0	17	0	0	1 774	0	0	933	0
	2015	0	37	0	0	1 730	0	0	804	0
	2017	—	—	—	—	—	—	—	—	—
	2018				17	2 350	0.72	1	1 259	0.03
Madagasgar	2014				…	…	…			
	2015				…	…	…			
	2017				—	—	—			
	2018				28	39 210	0.07			
Malawi	2014				452	52 065	0.87			
	2015				…	…	…			
	2017				…	…	…			
	2018				…	…	0.54			
Mexico	2014	8 910	1 870 303	0.48						
	2015	7 961	2 168 737	0.37						
	2016	8 830	2 356 388	0.38						
	2017	8 767	2 394 836	0.37						
New Zealand	2014	1	161	0.62	356	6 737	5.28	2	15 746	0.01
	2015	0	183	0	344	7 498	4.59	1	16 044	0.006
	2017	0	194	0	2	8 171	0.02	0	16 164	0
	2018	0	255	0	1	8 998	0.01	1	16 876	0.006
Nicaragua	2014	230	75 035	0.30						
	2015	256	74 955	0.34						
	2016	382	76 697	0.50						
	2017	188	84 682	0.22						
Norway	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017				15	1 358	1.10			
	2018				12	3 655	0.33			
Oman	2014									
	2015									
	2017									
	2018							69	58 342	0.12
Pakistan	2014	—	—	—	—	—	—	—	—	—
	2015				1 086	613 674	0.18			
	2017				…	…	…			
	2018				14 800	1 751 296	0.85			

Country	Data year	Chagas disease			Malaria			HTLV-1/2		
		Positive/ reactive, no.	No. donations screened	%*	Positive/ reactive, no.	No. screened	%*	Positive/ reactive, no.	No. screened	%*
Panama	2014	209	56 426	0.37				183	56 426	0.32
	2015	292	55 764	0.52				244	55 764	0.44
	2016	136	57 102	0.24				227	57 102	0.40
	2017	103	54 066	0.19				180	54 066	0.33
Paraguay	2014	2 050	87 888	2.33				182	87 888	0.21
	2015	2 343	98 945	2.37				317	98 945	0.32
	2016	1 971	94 666	2.08				270	94 666	0.29
	2017	1 560	89 007	1.75				239	89 007	0.27
Peru	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2016	1 227	343 608	0.36				2 623	343 608	0.76
	2017	1 627	359 458	0.45				2 809	359 458	0.78
Philippines	2014				588	865 283	0.06			
	2015				588	865 283	0.06			
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Portugal	2014				…	…	…	…	…	…
	2015				…	…	…	…	…	…
	2017				1	4 448	0.02	3	43 480	0.007
	2018				8	4 835	0.17	4	40 315	0.01
Qatar	2014				0	25 099	0	10	25 099	0.03
	2015				0	15 555	0	9	27 038	0.03
	2017				0	15 444	0	46	27 389	0.17
	2018				0	17 457	0	4	30 125	0.01
Republic of Korea	2014				1 280	1 377 253	0.09	309	2 324 443	0.01
	2015				569	3 318 313	0.01	409	2 377 726	0.01
	2017				981	1 224 636	0.08	385	2 311 258	0.02
	2018				1 614	1 275 356	0.13	304	1 244 660	0.02
Republic of Moldova	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018				115	58 821	0.20	558	58 821	0.95
Romania	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017							30	417 114	0.007
	2018							15	423 487	0.004
Saint Kitts and Nevis	2014							—	—	—
	2015							6	408	1.47
	2016							14	542	2.58
	2017							5	571	0.88
Saint Lucia	2014							15	2 456	0.61
	2015							21	2 463	0.85
	2016							20	2 563	0.78
	2017							7	2 773	0.25

Country	Data year	Chagas disease			Malaria			HTLV-1/2		
		Positive/ reactive, no.	No. donations screened	%*	Positive/ reactive, no.	No. screened	%*	Positive/ reactive, no.	No. screened	%*
Saint Vincent and the Grenadines	2014							22	995	2.22
	2015							22	1 028	2.14
	2016							21	1 103	1.90
	2017							27	1 295	2.08
Seychelles	2014							7	1 822	0.38
	2015							10	1 863	0.54
	2017							—	—	—
	2018							—	—	—
Singapore	2014				230	10 176	2.26			
	2015				221	10 458	2.11			
	2017				148	10 133	1.46			
	2018				135	9 916	1.36			
Spain	2014	77	98 554	0.08	109	14 033	0.78	16	512 757	0.003
	2015	70	74 536	0.09	96	28 577	0.34	20	486 957	0.004
	2017	38	70 738	0.05	217	26 716	0.81	18	453 679	0.004
	2018	—	—	—	—	—	—	—	—	—
Sri Lanka	2014				0	381 685	0			
	2015				0	397 034	0			
	2017				0	423 668	0			
	2018				0	450 640	0			
Suriname	2014							2	10 521	0.02
	2015	0	10 296	0				0	10 432	0
	2016	0	10 432[3]	0				0	10 432[4]	0
	2017	…	…	0.01				…	…	0.08
Sweden	2014							…	…	…
	2015							…	…	…
	2017							1	258 823[5]	<0.001
	2018							0	491 036	0
Trinidad and Tobago	2014	…	…	…				…	…	…
	2015	…	…	…				…	…	…
	2016	13	21 870	0.06				91	21 870	0.42
	2017	53	21 645	0.24				237	21 645	1.09
United Arab Emirates	2014							20	101 849	0.02
	2015							23	…	…
	2017							—	—	—
	2018							40	132 849	0.03
United Kingdom of Great Britain and Northern Ireland	2014				20	2 752	0.73	0	28 531	0
	2015				22	3 337	0.65	0	271 327	0
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
United States of America	2014	79	2 072 704	0.003				163	6 566 129	0.002
	2015	72	1 880 849	0.003						
	2017	135	1 429 411	0.009				270	5 998 695	0.005
	2018	349	2 482 711	0.01				729	6 951 685	0.01

[3] Inconclusive: 3.

[4] Inconclusive: 3.

[5] Total number of blood donors tested.

Country	Data year	Chagas disease			Malaria			HTLV-1/2		
		Positive/ reactive, no.	No. donations screened	%*	Positive/ reactive, no.	No. screened	%*	Positive/ reactive, no.	No. screened	%*
Uruguay	2014	206	100 164	0.20				98	100 164	0.10
	2015	188	96 304	0.19				214	96 304	0.22
	2016	157	90 064	0.17				114	90 064	0.13
	2017	139	92 674	0.15				148	92 674	0.16
Venezuela (Bolivarian Republic of)	2014	1 077	312 048	0.34				442	312 048	0.14
	2015	946	299 879	0.31				543	299 879	0.18
	2016	…	…	0.35				…	…	0.14
	2017	—	—	—				—	—	—
Viet Nam	2014				80	597 602	0.013	181	242 015	0.07
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Yemen	2014	—	—	—	—	—	—	—	—	—
	2015				121	9 687	1.3			
	2017	—	—	—	—	—	—	—	—	—
	2018				554	17 913	3.1			

Annex 6. Clinical use of blood and blood components 2014–2018

… 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 x 10^9 platelets.
Δ 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	Cryo-precipitate	
Afghanistan	2014	…	101 049	3 898	15	0	1 297	0	0	
	2015	…	142 336	6 343	5 213	0	1 783	0	40	
	2017	…	159 198	10 376	8 457	0	1 728	0	22	
	2018	…	179 878	14 340	12 959	0	3 381	0	69	
Albania	2014	—	—	—	—	—	—	—	—	—
	2015	32	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	32	391	22 452	4 217	…	14 508	7 643	466	Units issued
Algeria	2014	494	14 154	445 352	87 823	11 419	94 782	0	0	Units issued
	2015	494	13 588	434 122	98 678	7 989	80 046	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	494	8 544	508 765	103 292	…	82 796		0	
Andorra	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Angola	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	159	97 568	12 399	9 154	0	4 879	0	18	
Antigua and Barbuda	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2016	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
Argentina	2014	2 723	12 000	731 000	385 400	…	84 000	110 000	24 168	
	2015	2 365	1 120	524 136	445 676	3 692	226 922	31 769	86 230	
	2016	1 135	6 448	665 802	319 441	15 152	163 982	10 553	20 927	
	2017	1 135	7 335	1 016 808	491 700	59 197	291 240	12 281	23 000	
Armenia	2014	…	0	12 207	2 730	70	12 067	…	575	Units issued
	2015	127	0	12 341	3 035	50	11 452	0	739	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Australia	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—

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	
Austria	2014	163	…	291 593	6 748[Δ]	24 700	…[1]		12	Units transfused
	2015	181	…	329 841	11 219[Δ]	26 397	…[2]		26	Units transfused
	2017	179	0	319 935	…	…	6 677		…	
	2018	179	0	334 240	…	…	4 832		…	
Azerbaijan	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2016	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
Bahamas	2014	…	…	…	…	…	…	…	…	
	2015	…	…	…	…	…	…	…	…	
	2016	…	…	…	…	…	…	…	…	
	2017	3	…	…	…	…	…	…	…	
Bahrain	2014	20	…	18 237	15 659	108	…	…	…	Units transfused
	2015	193	100	14 831	18 522	85	…	…	…	Units transfused
	2017	16	…	…	…	…	…	…	…	
	2018	17	…	…	…	…	…	…	…	
Bangladesh	2014	244	…	…	…	…	…	…	…	
	2015	244	…	…	…	…	…	…	…	
	2017	198	652 924	50 500	300	50	32 000	300		Units issued
	2018	342	761 115	84 465	34 495	20	59 481	10	113	Units issued
Barbados	2014	3	3 565	4 293	532	82	967	0	0	
	2015	—	—	—	—	—	—	—	—	—
	2016	3	0	5 060	626	98	802	0	0	
	2017	3	0	4 700	195	121	763	0	0	
Belarus	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Belgium	2014	112	0	447 567	31 461[Δ]	36 096	62 359	0	0	Units transfused
	2015	…	0	434 145	31 503[Δ]	33 979	73 152	0	0	Units transfused
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Belize	2014	…	1 978	1 863	222	0	651	170	30	
	2015	14	1 764	1 629	227	0	452	174	6	
	2016	14	1 764	1 291	…	0	452	174	6	
	2017	14	2 217	2 075	139	0	714	63	8	
Benin	2014	50	72 769	16 061	477	0	3 581	0	0	Units issued
	2015	40	57 080	16 913	185	0	3 500	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	40	25 012	100 083	21	0	3 416		0	Units issued
Bhutan	2014	29	854	5 936	912	0	936	11		Units issued
	2015	29	3 142	4 808	1 391	0	1 265	0	0	Units issued
	2017	23	3 062	5 955	2 016	0	1 560			Units issued
	2018	27	1 446	5 019	2 208	0	1 528			Units issued

[1] Fresh frozen Plasma (quarantine): 7036 units. Fresh frozen Plasma (virus-inactivated): 4751 units.

[2] Fresh frozen Plasma (quarantine): 3695 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	Plasma	Cryo-precipitate	
Bolivia	2014	…	…	…	…	…	…	…	…	
	2015	…	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	95	495	78 100	28 409	265	44 573	490	5 628	
Bosnia and Herzegovina	2014	18	243	8 250	…	…	7 067	0	0	Units issued
	2015	18	97	12 815	7 314	785	10 165	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Botswana	2014	33	0	2 158	302	119	536			Units issued
	2015	33	…	…	…	…	…	…	…	
	2017	27	…	…	…	…	…	…	…	
	2018	27	…	…	…	…	…	…	…	
Brazil	2014	—	—	—	—	—	—	—	—	—
	2015	…	2 666	1 871 862	720 618	0	471 960	8 607	91 421	
	2016	…	1 818	658 723	27 525	95	199 705	0	8 885	
	2017	…	937	1 329 853	491 640		291 710	9 899	63 391	
Brunei Darussalam	2014	4	0	12 832	2 606	333	1 989	0	206	Units transfused
	2015	4	0	13 621	2 679	418	2 828	0	431	Units transfused
	2017	4	0	14 933	2 493	430	2 907	0	431	Units transfused
	2018	4	0	15 995	2 080	563	2 555	0	86	Units transfused
Bulgaria	2014	190	61	169 417	22 747	2 525	119 887	0	0	Units issued
	2015	249	200	168 521	26 175	2 390	93 409	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	172	92	155 525	26 712	2 145	100 310	100		Units issued
Burkina Faso	2014	48	27 775	74 795	2 071	0	2 435	0	0	Units issued
	2015	104	26 644	72 692	2 074	0	2 461	0	0	Units issued
	2017	62	27 604	73 219	2 035	0	2 503	0	0	Units issued
	2018	116	…	85 234	2 834	0	4730	0	0	Units issued
Burundi	2014	52	…	…	…	…	…	…	…	
	2015	91	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	65	75 589	1 902	0	0	0		0	
Cabo Verde	2014	6	0	2 897	193	0	400	0	184	Units transfused
	2015	6	3	3 093	165	0	403	0	87	Units transfused
	2017	6	0	2 897	193	0	400	0	184	Units transfused
	2018	6	32	3 093	165	0	403	0	87	Units transfused
Cambodia	2014	45	23 318	21 984	1 286	0	1 712	0	426	Units issued
	2015	45	27 937	22 156	1 729	0	1 706	0	151	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Cameroon	2014	15	18 262	0	0	0	0	0	0	Units transfused
	2015	37	56 902	0	0	0	0	0	0	Units transfused
	2017	49	74 189	0	0	0	0	0	0	Units transfused
	2018	58	73 113	5 290	591	0	1 325	0	0	Units transfused

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	
Canada	2014	460	0	736 086	62 683[A]	30 229	18 507	85 810[3]	59 159	Units issued
	2015	460	0	780 405	76 898[A]	37 865	0	129 010	61 531	Units transfused
	2017	460	0	714 996	69 808[A]	29 747	15 953	68 755	59 741	Units transfused
	2018	—	—	—	—	—	—	—	—	—
Central African Republic	2014	44	9 767	2 880	236	0	247	0	32	Units issued
	2015	44	12 859	0	0	0	0	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	23	16 316	0	0	0	0	0	0	Units issued
Chad	2014	69	60 127	2 040	172	0	1 974	0	0	Units issued
	2015	77	62 974	1 615	371	0	1 615	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	77	44 220	65	0	0	25		0	Units issued
Chile	2014	—	—	—	—	—	—	—	—	—
	2015	74	0	220 252	93 087	3 342	79 962	0	12 416	
	2016	74	0	234 894	140 116	1 850	77 434	0	18 285	
	2017	74	0	231 708	96 674	2 172	81 642	0	15 940	
China[4]	2014	…	73 955	19 814 868	405 815	1 254 774	…	…	…	Units issued
	2015	…	55 983	19 988 596	364 984	1 381 951	17 580 496	…	…	Units issued
	2017	…	30 662	22 002 222	390 864	1 614 378	18 966 728	…	…	Units issued
	2018	…	41 745	22 607 300	523 970	1 778 523	…	…	…	Units issued
Colombia	2014	414	8 250	664 457	162 495	128 445	201 360	0	44 396	
	2015	517	1 338	662 721	177 547	121 854	211 723	0	48 836	
	2016	581	1 818	658 723	181 133	153 745	199 705	0	50 612	
	2017	588	445	835 367	216 918	206 604	216 561	0	70 367	
Comoros	2014	5	1 913	0	0	0	0	0	0	Units issued
	2015	6	2 290	0	0	0	0	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	8	1 525	0	0	0	0	0	0	Units issued
Congo	2014	16	10 038	41 782	114	0	819	0	2	Units issued
	2015	34	14 539	29 761	97	0	391	0	0	Units issued
	2017	52	15 812	34 388	798	0	2 060	0	5	Units issued
	2018	52	9 380	68 714	262	0	888	0	2	Units issued
Cook Islands	2014	…	…	…	…	…	…	…	…	
	2015	…	…	…	…	…	…	…	…	
	2017	2	0	97	0	0	9	0	0	Units transfused
	2018	—	—	—	—	—	—	—	—	—
Costa Rica	2014	34	…	…	…	…	…	…	…	
	2015	32	…	…	…	…	…	…	…	
	2016	33	0	65 454	27 525	95	14 048	0	8 885	
	2017	33	0	64 044	32 048	111	17 436	0	11 552	
Côte d'Ivoire	2014	…	12 239	201 112	3 855	0	1 486	0	0	Units issued
	2015	…	3 441	179 734	3 495	0	2 300	0	8	Units issued
	2017	121	2 752	175 443	3 472	0	10 543	0	0	Units issued
	2018	162	3 373	166 583	3 509	0	9 623	0	0	Units issued

[3] Plasma data include apheresis plasma, cryosupernatant, frozen plasma.

[4] 1 unit of red cell products: 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	Cryo-precipitate	
Croatia[5]	2014	38	0	175 113	23 344[Δ]	0	49 132	0	6 770	Units issued
	2015	36	0	185 190	30 074[Δ]	0	56 681	0	975	Units issued
	2017	34	0	182 811	27 067[Δ]	0	49 625	0	1 300	Units issued
	2018	35	0	188 184	30 281[Δ]	0	51 029	0	1 324	Units issued
Cuba	2014	…	…	…	…	…	…	…	…	
	2015	…	0	241 071	49 254	0	39 139	5 917	12 071	
	2016	—	—	—	—	—	—	—	—	—
	2017	…	0	219 808	40 847	1 019	60 999	1 886	9 875	
Cyprus	2014	9	0	33 382	1 997[Δ]	1 54		6 605		Units issued
	2015	9	0	32 492	2 502[Δ]	176	0	7 388	0	Units transfused
	2017	—	—	—	—	—	—	—	—	—
	2018	65	0	61 574	5 208[Δ]	335	12 004		113	Units transfused
Czechia	2014	188	130	372 588	37 200	27 957	157 664			Units issued
	2015	188	79	386 700	10 400	30 400	154 500	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	188	1 577	404 501	96 500	22 800	163 000	0		Units issued
Democratic People's Republic of Korea	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Democratic Republic of the Congo	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	1527	278 403	121 171	2 485	0	1 845	0	0	
Denmark	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	…	0	194 731	32 142[Δ]	1 767	43 654	1 145	877	Units transfused
	2018	…	0	195 049	36 128[Δ]	1 948	40 438	1 441	956	Units transfused
Djibouti	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Dominica	2014	1	11	901	166	0	208	0	0	
	2015	—	—	—	—	—	—	—	—	—
	2016	1	18	992	219	0	261	0	0	
	2017	1	21	799	112	77	…	0	0	
Dominican Republic	2014	…	19 969	33 824	1 400	495	300	0	20	
	2015	…	6 152	1 378	197	0	39	0	0	
	2016	…	17 380	37 993	1 635	0	94	11	46	
	2017	…	1 867	3 889	851	0	409	0	72	
Ecuador	2014	…	…	…	…	…	…	…	…	
	2015	217	0	51 711	29 120	130	35 711	3 112	2688	
	2016	331	0	93 234	…	…	36 411	3 157	10 861	
	2017	353	110	107 445	39 437	444	41 807	2 708	4 346	

[5] Platelets data provided are total of whole blood-derived and apheresis platelets in units equivalent to adult dosage.

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	
Egypt	2014	—	—	—	—	—	—	—	—	—
	2015	…	1 719	915 142	95 389	23 701	300 524	100 686	76 727	Units issued
	2017	…	1 510	453 586	96 364	18 371	333 080	20 248	89 679	Units issued
	2018	…	1 276	411 288	91 907	20 816	311 797	17 129	76 620	Units issued
El Salvador	2014	…	…	…	…	…	…	…	…	
	2015	32	3 109	100 227	41 073	13 204	42 310	0	14 184	
	2016	22	680	108 595	…	…	49 856	54 175	10 861	
	2017	36	1 123	78 198	…	7 078	26 832	26 848	7 416	
Equatorial Guinea	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Eritrea	2014	26	415	6 645	196	0	403	0		Units issued
	2015	26	166	5 708	205	0	4 070	0	1	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	25	21	8 483	528	0	615	0	0	Units issued
Estonia	2014	24	36	57 747	22 960	1 516	25 843	0	2 260	Units issued
	2015	24	66	53 541	22 484	1 615	19 324	0	2 183	Units issued
	2017	24	17	49 734	55 00[Δ]	2 006	11 654	0	2 826	Units issued
	2018	23	17	48 682	51 15[Δ]	1 490	11 312	0	2 148	Units issued
Eswatini	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	…	0	13 263	0	600	4 380	0	0	Units issued
	2018	17	0	14 504	502	…	4 835		0	Units issued
Ethiopia	2014	263	50 820	…	…	..	...	...	…	Units issued
	2015	345	95 683	24 979	22 345	0	0	0	0	Units issued
	2017[6]	395	135 039	23 476	21 804	0	13 019	0	18	Units issued
	2018	429	…	36 654	36 649	0	36 637	0	70	
Fiji	2014	3	1 050	11 915	4 834	0	4 533	1 275	671	Units issued
	2015	—	—	—	—	—	—	—	—	Units issued
	2017	—	—	—	—	—	—	—	—	Units issued
	2018	3	1 050	11 915	4 834	0	4 533	1 275	671	Units issued
Finland[7]	2014	60	188	196 005	35 916[Δ]	3 496	41 034	0	0	Units issued
	2015	46	0	197 547	37 000[Δ]	3 497	0	0	0	Units issued
	2017	60	0	202 000	33 000[Δ]	2 500	34 000	0	0	Units issued
	2018	56	0	192 472	32 160[Δ]	5 500	192 000	0	0	Units issued
France	2014	1 392	0	2 445 775	161 254[Δ]	144 210	355 102	677	0	Units issued
	2015	1 419	0	2 546 678	173 548[Δ]	132 954	350 342	1 625	0	Units issued
	2017	—	—	—	—	—	—	—	—	
	2018	…	0	2 295 441	208 585[Δ]	118 859	287 922	0	0	Units transfused
Gabon	2014	106	0	17 435	629	0	1 485	0	0	Units issued
	2015	15	0	15 968	687	0	1 527	0	0	Units issued
	2017	40	5 000	21 032	1 735	0	1 940	0	0	Units issued
	2018	15	0	18 861	907	0	1 863	0	0	Units issued

[6] Data cover the national center in Addis Ababa only. Data of the whole blood cover all the 25 centers in Ethiopia.

[7] Only Solvent/Detergent (SD)-treated FFP (produced by a company) is used as a plasma product in Finland.

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	
Gambia	2014	…	…	…	…	…	…	…	…	
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	
	2018	10	…	…	…	…	…	…	…	
Georgia	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Germany	2014	1 404	0	4 170 589	194 007[Δ]	334 227	884 423	34 724	0	Units issued
	2015	1 395	0	3 919 374	206 900[Δ]	329 825	776 045	30 155	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Ghana	2014	354	100 768	25 969	601	10	18 188	0	451	Units issued
	2015	357	115 314	39 936	3 243	0	12 567	0	55	Units issued
	2017	160	…	…	…	…	…	…	…	
	2018	319	18 459	23 933	5 899	0	36 256	0	590	Units issued
Greece	2014	124	50	400 546	117 482	16 570	185 976	0	0	Units issued
	2015	…	0	436 822	30 040[Δ]	16 925	186 292	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Grenada	2014	—	1	520	21	0	44	4	0	
	2015	—	—	—	—	—	—	—	—	—
	2016	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
Guatemala	2014	48	1 069	114 637	24 369	3 155	32 901	521	3 186	
	2015	48	1 159	131 840	28 155	4 257	37 876	1 020	4 567	
	2016	39	1 319	126 277	29 135	3 205	36 133	…	4 657	
	2017	39	1 216	131 507	28 202	3 507	39 112	81	…	
Guinea	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Guinea-Bissau	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Guyana	2014	—	—	—	—	—	—	—	—	—
	2015	14	…	…	…	…	…	…	…	
	2016	14	…	…	…	…	…	…	…	
	2017	11	…	…	…	…	…	…	…	
Haiti	2014	90	6 288	23 459	533	0	204	4	…	
	2015	…	2 988	25 247	583	0	355	0	1	
	2016	12	3 474	23 580	601	0	170	0	47	
	2017	12	1 037	27 550	784	0	255		73	

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	
Honduras	2014	62	2 227	26 817	6 826	491	9 410	34	1 619	
	2015	…	1 767	53 245	15 901	503	16 732	798	2 292	
	2016	36	1 941	65 729	23 313	580	22 997	1 323	2 455	
	2017	33	1 464	71 056	22 238	265	20 694	1 090	1 799	
Hungary	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Iceland	2014	6	0	10 664	415[Δ]	1 394	2 172	0	0	Units transfused
	2015	6	0	9 846	606[Δ]	1 415	1 976	0	0	Units transfused
	2017	10	0	9 627	2 420[8]	1 172	2 033	0	0	Units transfused
	2018	—	—	—	—	—	—	—	—	—
India	2014	…	…	…	…	…	…	…	…	
	2015	…	…	…	…	…	…	…	…	
	2017	…	…	…	…	…	…	…	…	
	2018	…	…	…	…	…	…	…	…	
Indonesia	2014	…	694 724	2 122 824	400 756	6 087	104 794	181 155	23 993	Units issued
	2015	…	662 020	2 284 807	546 700	730	122 031	11 450	19 462	Units issued
	2017	…	53 695	2 554 545	536 957	11 563	101 112	19 660	13 728	Units transfused
	2018	…	521 337	2 741 680	597 706	12 457	113 005	24 681	14 910	Units transfused
Iran (Islamic Republic of)	2014	862	43 632	1 923 513	895 175	4 293	747 815	35 323	141 202	Units issued
	2015	862	44 012	1 967 269	1 162 317	5 119	1 794 017	136 640	133 408	Units issued
	2017	929	4 248	1 957 192	922 094	15 325	689 946	22 683	132 732	Units issued
	2018	929	3 779	1 962 214	906 420	20 958	661 378	11 756	128 337	Units issued
Iraq	2014	—	—	—	—	—	—	—	—	—
	2015	284	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Ireland	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Israel	2014[9]	33	713	236 611	124 873	443	55 850	0	36 246	Units issued
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Italy	2014	1 217	565	2 456 571	147 759[Δ]	67 963	247 419	0	3 296	Units transfused
	2015	1 208	352	2 471 435	151769[Δ]	65 274	213 038	0	2 065	Units transfused
	2017	1 550	44	2 457 300	163 749[Δ]	55 187	165 002	0	1 996	Units transfused
	2018	1 544	18	2 443 359	170 867[Δ]	55 596	140 395	0	1 786	Units transfused
Jamaica	2014	41	9 313	20 077	3 958	0	11 519	633	1 571	
	2015	42	0	37 655	4 885	0	13 438	563	1 426	
	2016	42	…	…	…	…	…	…	…	
	2017	15	…	…	…	…	…	…	…	

[8] Whole blood-derived Platelets are made of pools of 4 individual units. The number reported is in individual units.

[9] The units of blood components issued only include data of Magen David Adom (MDA).

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	
Japan	2014[10]	10 726	177	3 388 944	0	832 179	957 318	0	0	Units issued
	2015	10 211	80	3 329 459	0	833 780	955 517	0	0	Units issued
	2017	…	15	3 292 884	0	856 375	938 410	0	0	Units issued
	2018	—	—	—	—	—	—	—	—	—
Jordan	2014	106	6 763	105 960	78 907	65	105 960		10 596	Units issued
	2015	106	3 564	113 590	79 630	75	113 470	0	11 410	Units issued
	2017	111	0	63 047	42 450	13	43 713	0	13 020	Units issued
	2018	113	61 997	61 997	…	…	...	…	…	Units issued
Kazakhstan	2014	482		168 016	10 415	18 661	155 361	0	8 543	Units issued
	2015	474	0	168 846	11 749	24 217	142 536	0	9 443	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	459		175 482	13 245	34 918	135 936	0	14 685	Units issued
Kenya	2014	400	65 759	112 901	4 757	0	5 431	67	128	Units issued
	2015	…	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	530	59 931	99 852	7 280	0	6 409	…	34	Units issued
Kiribati	2014	3	…	…	…	…	…	…	…	
	2015	3	888	730	0	0	0	8	0	Units transfused
	2017	4	…	…	…	…	…	…	…	
	2018	3	888	730	…	…	…	8	…	Units transfused
Kuwait	2014	—	—	—	—	—	—	—	—	—
	2015	33	0	61 889	0	50 962	14 312	15 424	6 915	Units issued
	2017	38	0	89 618	0	57 737	23 606	18 850	8 452	Units issued
	2018	43	0	91 455	0	…	…	…	101 320	Units issued
Kyrgyzstan	2014	90	…	…	…	7131	…	…	1454	Units issued
	2015	90	0	18 597	4 780	976	26 929	0	1 748	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	
Lao People's Democratic Republic	2014	50	20 410	13 539	489		848	6	62	
	2015	47	18 861	17 541	427	0	1 049	9	218	Units issued
	2017	57	22 013	21 074	155	0	464	0	0	Units issued
	2018	57	17 731	31 522	751	0	2 174	0	559	Units issued
Latvia	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	54	0	47 072	5 124[Δ11]	2 434	24 027	0	8 651	Units issued
	2018	54	0	50 127	5 664[Δ]	2 874	24 637	0	8 288	Units issued
Lebanon	2014	…	…	150 000	…	10 000	…	…	…	
	2015	…	…	150 000	…	10 000	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Lesotho	2014	21	0	6 863	…	…	…	…	…	Units issued
	2015	19	0	6 679	35	0	89	0	0	Units issued
	2017	20	0	4 596	…	…	…	…	…	Units issued
	2018	19	6	5 308	32	0	82	0	0	Units issued

[10] 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 unit for whole blood, red cells and FFP. In the case of apheresis platelets, a component of 200 x 109 platelets is regarded as 1 unit of adult dosage. 400 x 109 components were calculated as 2 units in this table.

[11] In adult dosage. 1 unit contains 5 pooled 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	Plasma	Cryo-precipitate	
Liberia	2014	…	…	…	…	…	…	…	…	
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	38	15 034							
Libya	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	53	38 542	95 280	55 236	25 600	41 776		336	Units issued
	2018	53	28 174	101 322	50 887	30 455	70 565	2 856	180	Units issued
Lithuania	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
Luxembourg[12]	2014	5	0	19 895	2 079[Δ]	633	3 364	0	0	Units issued
	2015	5	0	19 913	2 234[Δ]	860	3 754	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	4		19 243	2 079[Δ]	907	3 348			Units issued
Madagascar	2014	114	20 533	8 417	0	0	3 062	69	0	Units issued
	2015	114	21 341	9 724	0	0	4 050	1 341	0	Units issued
	2017	81	…	…	…	…	…	…	…	
	2018	70	13 283	28 833	3191	0	6 350	0	0	Units issued
Malawi	2014	87	45 552	5 889	1 794	0	1 481	0	154	Units issued
	2015	87	53 089	8 486	1 417	0	937	0	619	Units issued
	2017	88	…	…	…	…	…	…	…	
	2018	87	59 644	8087	1774	0	840	0	491	Units issued
Malaysia[13]	2014	128	59 841	492 349	118 111	5 628	140 624	0	58 410	Units transfused
	2015	128	46 686	423 271	115 238	6 922	140 563	0	55 473	Units transfused
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Maldives[14]	2014	79	589	9 153	536	0	373	0	0	Units issued
	2015	23	263	6 102	0	0	0	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	91	…	6 390	0	0	…	0	0	Units issued
Mali	2014	…	…	…	…	…	…	…	…	
	2015	…	16 626	13 590	0	0	1 531	0	0	Units issued
	2017	…	…	…	…	…	…	…	…	
	2018	59	24 214	15 297	0	0	1 302	0	616	Units issued
Malta	2014	—	—	—	—	—	—	—	—	—
	2015	6	0	15 190	1 343[Δ]	482	1 723	0	0	Units transfused
	2017	10	0	13 934	1 558[Δ]	562	2 241	0	0	Units transfused
	2018	—	—	—	—	—	—	—	—	—

[12] Fresh frozen plasma issued are Solvent/Detergent (SD)-treated FFP produced from plasma collected in Luxembourg.

[13] Data on whole blood and components 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.

[14] Data given in this section are from Indira Gandhi Memorial Hospital and Maldivian blood services only.

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	
Marshall Islands	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	…
Mauritania	2014	18	2 242	11 952	1 226	0	1 151	0	0	Units issued
	2015	7		13 153	4 631	0	9 902	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	20		16 657	1 988		2 335		0	Units issued
Mauritius	2014	…	5 273	34 917	20 900	104	15 447	0	353	Units transfused
	2015	26	1 364	43 095	24 317	88	0	0	0	Units transfused
	2017	—	—	—	—	—	—	—	—	—
	2018	23	…	40 546	16 148	…	17 950	0	316	
Mexico	2014	…	…	…	…	…	…	…	…	…
	2015	4 741	…	…	…	…	…	…	…	…
	2016	5 097	…	1 500 941	344 414	75 951	959 869	36 558	94 560	
	2017	5 010	…	807 125	370 934		301 864	6 204	55 200	
Micronesia (Federated States of)	2014	5	1 151	311	105	0	0	0	0	Units issued
	2015	5	1 249	332	150	0	0	0	0	Units issued
	2017	5	536	642	40	0	0	0	0	Units issued
	2018	5	565	681	45	0	0	0	0	Units issued
Monaco	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Mongolia	2014	81	36	20 426	6 854	26	25 723	2 579	1 874	Units issued
	2015	81	73	22 329	5 899	53	27 520	2 663	3 319	Units issued
	2017	79	5	23 760	14 344	848	26 220	5 499	3 866	Units issued
	2018	79	61	14 825	14 344	848	22 324	2 111	3 047	Units issued
Montenegro	2014	10	1 625	13 736	2 940	0	9 164	0	817	Units transfused
	2015	11	144	15 839	4 178	0	9 350	0	1 056	Units transfused
	2017	—	—	—	—	—	—	—	—	—
	2018	11	30	16 162	3 256	0	10 479	0	2 427	Units transfused
Morocco	2014	…	0	273 682	168 038	100	181 384	0	0	Units issued
	2015	…	0	285 003	117 640	100	213 892	213 892	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	633	…	…	…	…	…	…	…	
Mozambique	2014	154	…	…	…	….	…	…	…	
	2015	155	…	…	…	…	…	…	…	
	2017	162	…	…	…	…	…	…	…	
	2018	165	0	136 091	18 870	0	70 046	0	0	
Myanmar[15]	2014	333	15 998	35 001	9 722	44	25 587	1 209	1 165	Units issued
	2015	333	28 501	29 582	6 673	35	15 131	9 846	9 206	Units issued
	2017	399	24 914	22 778	37 359	15	31 350	2 343	20 556	Units issued
	2018	391	36 470	56 212	10 098	8	38 506	2 137	2 564	Units issued

[15] Data cover National Blood Centre only.

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	
Namibia	2014	—	—	—	—	—	—	—	—	—
	2015[16]	50	147	30 934	940	1 285	19 989[17]	0	0	Units transfused
	2017	50	175	32 797	328	1 413	4 536	0	0	Units transfused
	2018	51	214	32 610	2 083	…	5 014	0	15	Units transfused
Nauru	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Nepal	2014	250	130 000	55 000	33 000	…	22 000	800	900	Units issued
	2015	200	186 000	65 000	40 000	100	25 000	24 000	1 000	Units issued
	2017	..	199 554	72 000	38 000	…	33 379	1 000	1 000	Units issued
	2018	…	20 5000	68 000	42 000	…	20 000	1 000	1 000	Units issued
Netherlands	2014	—	—	—	—	—	—	—	—	—
	2015	…	428	424 062	50 070[Δ]	3 972	6 797	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
New Zealand	2014	21	736	102 727	29 716	4 556	13 405	514	4 198	Units transfused
	2015	21	822	99 553	30 732	4 231	13 173	536	4 482	Units transfused
	2017	21	852	94 605	89 45[Δ]	4 168	12 197	101	4 201	Units transfused
	2018	21	820	94 577	97 47[Δ]	9 747	13 355	175	5 281	Units transfused
Nicaragua	2014	…	…	…	…	…	…	…	…	
	2015	42	0	37 493	15 942	0	13 129	0	1 614	
	2016	47	0	57 005	30 347	0	13 753	0	3 363	
	2017	43	0	70 969	36 052	0	18 004	0	3 980	
Niger	2014	47	69 015	1 970	90	0	1 970	0	0	Units issued
	2015	47	78 790	2 400	332	0	2 400	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	115	114 116	5 434	110	0	5 434		0	Units issued
Nigeria[18]	2014	26	29 298	690	325	0	692	0	0	Units issued
	2015	26	31 047	116	29	0	139	0	0	Units issued
	2017	…	9 558	31 999	523	0	1 731	0	7	Units issued
	2018	46	156 540	…	…	…	…	…	…	
Niue	2014	1	17	0	0	0	0	0	0	Units issued
	2015	…	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	
North Macedonia	2014	21	7 612	24 747	7 622[Δ]	150	0	21 645	1 068	Units issued
	2015	58	6 608	57 348	21 191	300	0	21 644	2 856	Units issued
	2017	55	…	…	…	…	…	…	…	
	2018	55	…	…	…	…	…	…	…	

[16] 2016 data was reported.

[17] Of the 19989 units of Fresh frozen plasma, 4689 units were transfused in Namibia. The remaining 15300 units were exported to National Bioproducts Institute in South Africa for fractionation.

[18] The data given in this section are from the Lagos State Blood Transfusion Service. Country data are not 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	
Norway[19]	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	28	49	163 542	17 180[A]	7 363	40 715	0	0	Units transfused
	2018	28	315	158 922	16 645[A]	6 313	39 783	0	0	Units transfused
Oman	2014	13	…	…	…	…	…	…	…	
	2015	15	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	18	…	…	…	…	…	…	…	
Pakistan	2014	—	—	—	—	—	—	—	—	—
	2015	…	590 715	520 361	286 540	0	520 361	0	0	Units issued
	2017	606	…	…	…	…	…	…	…	
	2018	606	921 204	735 678	304 448	…	…	450 316	49 703	Units issued
Palau	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	
Panama	2014	30	…	…	…	…	…	…	…	
	2015	29	104	40 550	17 819	5 529	14 693	0	3 233	
	2016	29	108	52 277	18 803	5 921	13 485	0	4 208	
	2017	29	58	48 613	19 532	5 162	12 321	0	4 688	
Papua New Guinea	2014	35	…	…	…	…	…	…	…	
	2015	36	…	…	…	…	…	…	…	
	2017[20]	33	7 553	12 195	…	0	159	0	…	Units issued
	2018	—	—	—	—	—	—	—	—	
Paraguay	2014	…	…	…	…	…	…	…	…	
	2015	52	…	…	…	…	…	…	…	
	2016	61	310	75 546	29 167		26 419	444	5 642	
	2017	61	…	…	…	…	…	…	…	
Peru	2014	…	…	…	…	…	…	…	…	
	2015	…	…	…	…	…	…	…	…	
	2016	240	8 691	274 643	126 884	27 814	89 479		28 468	
	2017	360	1 849	288 592	129 089	48 612	154 953		25 104	
Philippines	2014	—	—	—	—	—	—	—	—	—
	2015	81	49 193	298 021	55 232	545	39 278[21]	0	5 665	Units transfused[22]
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Poland	2014	845	143	1 126 159	327 735	40 967	340 019	277	21 719	Units issued
	2015	839	201	1 149 343	330 525	42 174	333 391	1 803	28 895	Units issued
	2017	859	87	1 161 517	361 180	46 061	308 134	1 892	34 232	Units issued
	2018	842	…	1 082 135	390 475	45 648	285 594	1 569	34 936	Units issued

[19] Fresh frozen plasma (FFP) reported are Solvent/Detergent (SD)-treated FFP.

[20] Platelets and cryoprecipitate were transfused but data are not available.

[21] Including both fresh frozen plasma (FFP) and frozen plasma (FP).

[22] Partial data. Not all reporting facilities included data on transfusion.

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	
Portugal	2014	238	50	328 101	138 897	5 002	71 766	0	597	Units transfused
	2015	241	45	312 906	134 781	5 752	65 291	0	354	Units transfused
	2017	246	23	300 334	9 363[Δ]	5 790	54 624	0	332	Units transfused
	2018	249	30	290 001	8 441[Δ]	5 665	…	0	273	Units transfused
Qatar	2014	5	0	25 468	17 689	508	9 965	0	3 317	Units transfused
	2015	5	68	24 932	11 183	738	10 000	35	3 847	Units transfused
	2017	5	69	24 858	21 920	815	5 154	5 366	3 790	Units transfused
	2018	28	27	25 373	20 012	843	6 120	3 072	3 300	Units transfused
Republic of Korea	2014	…	1 352	1 906 189	1 352 012	165 876	574 618	1 893	63 462	Units issued
	2015	…	1 216	1 933 066	1 283 436	197 024	566 913	827	74 230	Units issued
	2017	2 638	899	1 911 378	1 410 123	204 234	525 547	325	86 883	Units issued
	2018	1 013	764	1 904 380	1 545 917	204 442	529 388	588	88 564	Units issued
Republic of Moldova	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	68	70	42 027	770[Δ]	1 533	41 821	7 535	10 775	Units transfused
Romania[23]	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	317	9 043	365 766	81 131	7 062	209 581	…	11 699	Units transfused
	2018	314	5 296	374 095	91 467	7 820	211 570	….	10 791	Units transfused
Russian Federation	2014	…	620	1 794 341	683 493	…	1 778 984	12 893	24 287	Units issued
	2015	…	231	1 866 936	701411	…	1 759 364	8 673	24 732	Units issued
	2017	…	26	1 857 855	228 619	170 930	1 627 840	12 660	34 923	Units issued
	2018	…	38	1 922 106	227 560	195 092	1 549 048	13 476	41 772	Units issued
Rwanda	2014	64	0	41 289	13 210	0	7 012	0	250	Units issued
	2015	65	0	53 402	15 200	92	10 410	1 120	2 310	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	69	0	74 044	15 256	…	5 898	…	608	Units issued
Saint Kitts and Nevis	2014	—	—	—	—	—	—	—	—	—
	2015	1	…	…	…	…	…	…	…	
	2016	1	…	…	…	…	…	…	…	
	2017	1	…	…	…	…	…	…	…	
Saint Lucia	2014	…	…	…	…	…	…	…	…	
	2015	3	0	1 572	0	0	591	599	0	
	2016	3	0	2 383	684	0	614	0	0	
	2017	3	…	2 308	410	…	741	…	…	
Saint Vincent and the Grenadines	2014	…	…	…	…	…	…	…	…	
	2015	3	…	…	…	…	…	…	…	
	2016	4	4	1 074	90	0	181	0	0	
	2017	4	7	1 229	75	0	281	0	0	
Samoa	2014	2	171	1 488	28	0	25	0	0	Units issued
	2015	2	316	2 068	44	0	118	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—

[23] the total number of fresh frozen plasma (FFP) reported include cryosupernatant.

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	
San Marino	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	2014	2	51	749	0	0	58	0	1	
	2015	2	63	787	0	0	79	0	0	
	2017	—	—	—	—	—	—	—	—	—
	2018	3	6	1185	6	0	185	0	0	
Saudi Arabia	2014	331	…	…	…	…	…	…	…	
	2015	331	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Senegal	2014	86	…	…	…	…	…	…	…	
	2015	168	32 108	35 124	611	0	29 160	0	0	Units issued
	2017	65	…	…	…	…	…	…	…	
	2018	60	223	29 176	602	0	3 057	0	0	
Serbia	2014	107	…	…	…	…	…	…	…	
	2015	107	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Seychelles	2014	1	1 678	…	10	0	4	0	0	Units issued
	2015	6	1 631	113	72	0	42	0	0	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Sierra Leone	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Singapore	2014	21	0	105 530	58 580	9 901	28 455	57	11 760	Units transfused
	2015	21	0	109 505	57 192	10 685	28 158	35	14 601	Units transfused
	2017	21	0	110 523	54 000	10 146	24 064	0	14 108	Units transfused
	2018	21	0	111 070	58 240	9 614	23 908	42	18 986	Units transfused
Slovakia	2014	105	412	199 706	9 566[Δ]	10 867	85 113	0	0	Units transfused
	2015	105	522	202 406	11 295[Δ]	11 108	89 732	0	0	Units transfused
	2017	115	477	194 010	10 968[Δ]	10 939	70 372	0	0	Units transfused
	2018	115	102	198 179	46 803	10 729	63 405	0	0	Units transfused
Slovenia	2014	27	0	83 200	7 726[Δ]	2 687	22 932	0	0	Units issued
	2015	27	0	83 455	8 031[Δ]	2 756	21 615	0	0	Units issued
	2017	27	0	82 562	10 418[Δ]	2 979	19 224	0	0	Units issued
	2018	—	—	—	—	—	—	—	—	—
Solomon Islands	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	…	…	…	…	…	…	…	…	—

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	
Somalia	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
South Africa	2014	408	3 481	925 520	161 912	3 1539	143 666	0	35 658	Units issued
	2015	669	2 820	965 650	38 214[Δ]	3 1415	151 901	113 411	37 995	Units issued
	2017	418	1 318	871 955	206 050	2 7515	151 651	244	43 030	Units issued
	2018	736	1 888	934 745	74 161[Δ]		147 195		50 933	Units issued
South Sudan	2014	15	108	0	0	0	0	0	0	Units issued
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	18	1 238	0	0	0	0	0	0	
Spain[24]	2014	456	55	1 489 696	193 347[Δ]	….	185 695	0	1 868	Units transfused
	2015	456	107	1 512 697	198 464[Δ]	…	183 248	0	1 271	Units transfused
	2017	467	28	1 492 766	209 880[Δ]	…	166 701	0	1 914	Units transfused
	2018	—	—	—	—	—	—	—	—	—
Sri Lanka	2014	90	0	347 668	155 859	12 369	191 368	13 558	71 971	Units issued
	2015	25	0	361 308	202 058	15 965	191 755	14 063	66 142	Units issued
	2017	105	0	392 390	131 658	21 775	153 496	…	49 647	Units issued
	2018	103	0	412 154	134 059	17 682	156 512	…	48 622	Units issued
Sudan	2014	…	…	…	…	…	…	…	…	
	2015	372	…	…	…	…	…	…	…	
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Suriname	2014	5	0	10 205	1 794	0	2 012	0	0	
	2015	5	0	16 132	2 004	0	2 005	0	0	
	2016	5	0	8 854	1 620	0	1 414	0	0	
	2017	5	0	11 166	1 947	0	2 127	0	0	
Sweden	2014	…	0	441 818	33 554[Δ]	14 497	58 983	0	0	Units transfused
	2015	…	0	424 772	33 248[Δ]	15 490	48 593	0	0	Units transfused
	2017	…	0	390 593	28 288[Δ]	17 167	49 081	0	0	Units transfused
	2018	…	0	390 404	47 608[Δ]	16 128[25]	41 569[26]	0	0	Units transfused
Switzerland	2014	240	…	296 080	10 371[Δ]	23 651	42 810	0	0	Units issued
	2015	240	…	248 647	11 636[Δ]	24 803	27 743	0	0	Units issued
	2017	240	…	226 240	13 396[Δ]	24 085	29 303	0	0	Units issued
	2018	241	…	221 100	13 750[Δ]	25 197	23 568	0	0	Units issued
Syrian Arab Republic	2011	—	—	—	—	—	—	—	—	—
	2013	—	—	—	—	—	—	—	—	—
	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
Tajikistan	2014	120	…	…	…	…	…	…	…	
	2015	106	0	27 886	604	125	41 576	0	6 788	Units issued
	2017	0	0	51 374	2 641	0	55 734	0	7 864	Units issued
	2018	124	…	…	…	…	…	…	…	

[24] Data provided are total of whole blood-derived and apheresis platelets in units equivalent to adult dosage.

[25] The number reported are the units of apheresis platelets collected through apheresis procedure.

[26] Additional 7202 units of Solvent/Detergent (SD)-treated FFP were transfused.

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	
Thailand	2014[27]	1 326	0	613 074	278 009	11 232	135 443	1 527	183 654	Units issued
	2015	1 326	0	638 998	309 679	11 757	145 631	1 304	179 310	Units issued
	2017[28]	1 332	0	1 008 957	404 181	12 713	226 078	1 219	214 754	Units issued
	2018	1 332	0	1 049 777	428 189	13 448	215 837	562	235 027	Units issued
Timor-Leste	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	6	2 954	459	66	0	459	0	0	Units issued
Togo	2014	…	11 173	31 465	528	0	2 361	0	0	Units issued
	2015	…	12 580	35 160	423	0	2 140	0	0	Units issued
	2017	…	9 756	37 590	969	0	3 992	0	0	Units issued
	2018	…	2 217	50 243	858	0	4 109	0	0	Units issued
Tonga	2014	…	…	…	…	…	…	…	…	
	2015	…	…	…	…	…	…	…	…	
	2017	5	…	…	…	…	…	…	…	
	2018	5	…	…	…	…	…	…	…	
Trinidad and Tobago	2014	…	…	…	…	…	…	…	…	
	2015	…	…	…	…	…	…	…	…	
	2016	…	…	…	…	…	…	…	…	
	2017	…	…	…	…	…	…	…	…	
Tunisia	2014	…	…	…	…	…	…	…	…	
	2015	—	—	—	—	—	—	—	—	—
	2017	…	…	…	…	…	…	…	…	
	2018	…	…	…	…	…	…	…	…	
Turkey	2014	1 080	82 103	2 079 578	506 216	30 374	1 175 193	0	16 669	Units issued
	2015	1 110	60 405	2 185 260	571 525	33 367	1 258 944	0	20 105	Units transfused
	2017	1 121	221	2 265 965	191 325	32 490	1 039 507	0	28 383	Units transfused
	2018	—	—	—	—	—	—	—	—	—
Turkmenistan	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Tuvalu	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Uganda	2014	227	…	…	…	…	…	…	…	
	2015	257	…	…	…	…	…	…	…	
	2017	395	…	…	…	…	…	…	…	
	2018	369	137 249	275 130	4 016	0	51 310	0	0	
Ukraine	2014	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—

[27] Data only cover blood components issued from the National Blood Centre in Bangkok.

[28] Data cover blood components issued from National Blood Centre in Bangkok and the regional centres.

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	
United Arab Emirates	2014	147	0	126 374	27 137	10 241	46 995	662	12 174	Units issued
	2015[29]	147	118	14 173	4 076	0	5 472	0	557	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	…	0	108 709	19 625	9 585	32 238	1 000	6 701	Units issued
United Kingdom of Great Britain and Northern Ireland[30, 31]	2014	136	0	226 487	19 448[Δ]	23 310	24 318	0	14 555	
	2015	136	0	215 535	19 330[Δ]	23 053	24 604	0	9 034	
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
United Republic of Tanzania	2014	263	83 247	30 467	1 613	0	4 186	104	0	Units issued
	2015	263	…	…	…	…	…	…	…	
	2017	283	…	…	…	…	…	…	…	
	2018	283	…	…	…	…	…	…	…	
United States of America	2014	…	…	…	…	…	…	…	…	
	2015	…	…	…	…	…	…	…	…	
	2017	…	…	…	…	…	…	…	…	
	2018	…	…	…	…	…	…	…	…	
Uruguay	2014	…	…	…	…	…	…	…	…	
	2015	72	1 116	75 607	34 176	2 050	2 0803	164	1 748	
	2016	73	308	64 566	27 132	2 479	17 833	121	1 655	
	2017	67	472	73 722	35 149	3 070	18 616	180	2 031	
Uzbekistan	2014	205	0	23 787	1 027	308	22 366	0	5 042	
	2015	205	0	25 522	1 404	421	24 127	0	4 780	
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Vanuatu	2014	—	—	—	—	—	—	—	—	—
	2015	4	921	267	23	45	19	15	12	Units transfused
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Venezuela (Bolivarian Republic of)	2014	…	…	…	…	…	…	…	…	
	2015	339	…	…	…	…	…	…	…	
	2016	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
Viet Nam	2014	489	212 503	745 305	274 732	51 124	119 843	39 743	31 536	Units issued
	2015	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—
Yemen	2014	—	—	—	—	—	—	—	—	—
	2015	112	2 925	4 679	4 043	0	4 919	234	0	
	2017	—	—	—	—	—	—	—	—	—
	2018	271	3 041	10 975	8 828	0	8 552	0	0	Units issued
Zambia	2014	160	64 157	32 000	12 500	0	32 000	0	500	
	2015	160	59 999	30 000	12 000	0	15 000	0	200	Units issued
	2017	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—

[29] Partial data.

[30] Subnational data provided by Scottish National Blood Transfusion Service (SNBTS) and Welsh Blood Service (WBS). SNBTS: units transfused; WBS: units issued.

[31] Platelets derived from whole blood are pooled from 4 units of platelet concentrates. Pooled frozen cryoprecipitate is derived from 5 individual 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	Plasma	Cryo-precipitate	
Zimbabwe	2014	120	1 778	43 417	1 924	55	3 326		223	Units issued
	2015	138	778	41 496	2 558	104	3 327	0	147	Units issued
	2017	97	845	51 174	3 521	198	4 855		219	Units issued
	2018	176	715	67 422	4 403		6 461		506	Units issued

Annex 7. Provision of plasma-derived medicinal products (PDMP) through the fractionation of plasma collected in the country 2014–2018

… Not reported/not available.
Blank cell: 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	2014	A	150 000	0	150 000	3.5	100	Yes	Yes	Yes	Yes	50	50	2
	2015	A, D	100 000	0	100 000	2.3	100	Yes	Yes	Yes	Yes	50	50	10
	2016	A, D	120 000	400	120 400	2.7	99	Yes	Yes	Yes	Yes	90	60	2
	2017	A, D	120 000	400	120 400	2.7	99	Yes	Yes	Yes	Yes	90	60	2
Armenia	2014	C	…	…	…	…	…	…	…	…	…	…	…	…
	2015	C	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Australia	2014[1]	B	171 981	360 000	531 981	22.8	32	Yes	Yes	Yes	Yes			
	2015	—	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Austria[2]	2014	B, D			69 295	8.1		Yes	Yes	Yes	Yes			
	2015	B, D			105 827	12.3		Yes	Yes	Yes	Yes			
	2017	…	…	…	…	…	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…	…	…	…	…	…
Belgium	2014	A	108 517	63 613	172 130	15.2	63	Yes	Yes	Yes	Yes	…	…	…
	2015	A	105 461	66 889	172 350	15.3	62	Yes	Yes	Yes	Yes	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Brazil	2014	—	—	—	—	—	—	—	—	—	—	—	—	—
	2015	A	189 000	0	189 000	0.9	100	Yes	Yes	Yes	Yes	…	39	8
	2016	A, C[3]	81 857	0	81 857	0.4	100	Yes	Yes	No	No	…	40	…
	2017	A, C	81 857	0	81 857	0.4	100	Yes	Yes	Yes	Yes	…[4]	39	8
Bulgaria	2014	A	11 741	0	11 741	1.6	100	Yes	Yes	No	No	…	…	…
	2015	A	13 063	0	13 063	1.8	100	Yes	Yes	No	No	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	A	…	…	…	…	…	…	…	…	…	…	…	…

[1] 2013 data. Data of recent years can be found in 'Australian Red Cross Blood Service Annual Reports' (available at: https://www.lifeblood.com.au/about/our-strategy/annual-reports).

[2] Data source for volume of plasma used for fractionation: The Collection, Testing and Use of Blood and Blood Components in Europe published by the European Directorate for the Quality of Medicines & HealthCare (EDQM) of the Council of Europe. Available at: https://www.edqm.eu/en/reports-blood

[3] HEMOBRÁS has a Contract with LFB for technology transfer.

[4] All albumin from the fractionation of Brazilian plasma collected in Brazilian is donated to public hospitals.

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
Canada	2014	A	212 757	6 159	218 916	6.1	97	Yes	Yes	No	Yes	59.3	22	0[5]
	2015	A	184 500	4 853	189 353	5.3	97	Yes	Yes	No	Yes	49.6	20.5	0
	2017	c	226 113	8 032	234 145	6.4	97	Yes	Yes	Yes	No	48.5	15.4	26.5
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Chile	2014	C[6]	11 964[7]	0	11 964	0.67		Yes	Yes	Yes	No	17.5	3.6	…
	2015	C	17 887[7]	0	17 887	0.99	100	Yes	Yes	Yes	No	17.5	3.6	…
	2016	…	…	…	…	…	…	…	…	…	…	…	…	…
	2017	c	17 658	0	17 658	0.94	100	Yes	Yes	Yes	No	17.5	3.6	…
China	2014	A	0	5 206 552	5 206 552	3.8	0	Yes	Yes	Yes	Yes	…	…	…
	2015	A	0	5 836 971	5 836 971	4.2	0	Yes	Yes	Yes	Yes	…	…	…
	2017	…	0	7 717 357	7 717 357	5.4	0	Yes	Yes	Yes	Yes	…	..	…
	2018	B	0	8 342 819	8 342 819	5.8	0	Yes	Yes	Yes	Yes			
Croatia	2014	…[8]	…	…	…	…	…	…	…	…	…	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…	…
	2017	C, D						Yes	Yes	Yes	Yes			
	2018	C, D						Yes	Yes	Yes	Yes			
Cuba	2014	A	…	…	…	…	…	Yes	Yes	NO	NO	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…	…
	2016	…	…	…	…	…	…	…	…	…	…	…	…	…
	2017	A						Yes	Yes	NO	NO			
Czechia	2014	D	67 032	501 131	568 163	53.9	11							
	2015	D	70 000	514 500	584 500	55.4	11							
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	C.D	65 000	496 000[9]	561 000	52.6	12					100	100	100
Denmark	2014	—	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—	—
	2017	C	42 040	37 585	79 625	13.8	52.8	Yes	Yes	No	No	94	30	0[10]
	2018	C	42 461	42 994	85 455	14.9	49.7	Yes	Yes	No	No	100	34	0
Estonia	2014	C, D	10 470	0	10 470	8.0	100	Yes	Yes	Yes	No	100	100	100
	2015	C, D	11 076	0	11 076	8.4	100	Yes	Yes	Yes	No	100	100	50
	2017	C, D	11 685	0[11]	11 685	8.8	100	Yes	Yes	Yes	Yes	…	…	…
	2018	C, D	11 338	0	11 338	8.6	100	Yes	Yes	Yes	Yes	…	…	…
Finland	2014	…	…	…	…	…	…	…	…	…	…	…	…	…
	2015	C, D	55 000	0	55 000	10.0	100	No	No	No	No	…	…	…
	2017	C	55 000	0	55 000	10.0	100	No	No	No	No	…	…[12]	…
	2018	D	50 000	0	50 000	9.1	100	No	No	No	No	…	…	…
France	2014	A	675 769	93 946	769 715	12.0	88	Yes	Yes	Yes	Yes	…	…	…
	2015	A	594 437	200 265	794 703	12.3	75	Yes	Yes	Yes	Yes	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	B	…	…	…		…	…	…	…	…	…	…	…

[5] All factor VIII supplied are recombinant.

[6] Agreement on exchange of plasma for PDMP with the National University of Cordoba, Argentina.

[7] In Kg

[8] In 2013 Croatian fractionation plant was closed. Contract fractionation was considered during the year, but it was not approved then.

[9] Including 448500 litres of apheresis plasma collected by stand-alone plasmapheresis centres.

[10] Only recombinant FVIII is used.

[11] Plasma obtained through plasmapheresis is used for transfusion

[12] Domestically collected plasma does not cover the need for PDMPs, especially for IVIG.

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
Germany	2014	D	1 205 680	2 021 831	3 227 511	40.0	37	Yes	Yes	Yes	Yes	…	…	…
	2015	D	1 009 803	1 900 278	2 910 081	36.1	34	Yes	Yes	Yes	Yes	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Greece	2014	C	—	—	—	—	—	—	—	—	—	—	—	—
	2015	…	…	…	…	…	…	…	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
India	2014	A, B, C	…	…	…	…	…	Yes	Yes	No	No	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…	…
	2017	…	…	…	…	…	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…	…	…	…	…	…
Iran (Islamic Republic of)	2014	A, B, C	176 433	151 213	327 646	4.1	53	Yes	Yes	Yes	No	35	100	20
	2015	A, B, C	156 236	150 501	306 737	3.9	50	Yes	Yes	Yes	No	35	100	20
	2017	A, B, C	183 684	225 963	409 647	5.0	45	Yes	Yes	Yes	No	…	…	…
	2018	A, B, C	179 791	160 042	339 833	4.1	53	Yes	Yes	Yes	No	…	…	…
Israel	2014	A	43 314	0	43 314		100	No	Yes	No	No	0	45	0
	2015	—	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Italy	2014	A	565 120	191 078	756 198	12.6	74	Yes	Yes	Yes	Yes	61	64	53
	2015	A	570 957	191 768	762 725	12.7	74	Yes	Yes	Yes	Yes	64	74	53
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	A, C[13]	586 999	211 251	798 250	13.1	674	Yes	Yes	Yes	Yes	72	76	59
Japan	2014	A, B, D	608 000	31 600	639 600	5.1	95	Yes	Yes	Yes	Yes	57.7	95.8	100
	2015	A, B, D	586 000	323 000	909 000	7.2	64	Yes	Yes	Yes	Yes	56.4	95.6	100
	2017	A, B, D[14]	582 225	352 775	935 000	7.4	62	Yes	Yes	Yes	Yes	62.9	94.8	100
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Kazakhstan	2014	A	37 680	0	37 680	2.1	100	Yes	Yes			…	…	…
	2015	A	37 127	0	37 127	2.1	100	Yes	No	No	No	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	A	18 337	0	18 337	1.0	100	Yes	No	No	No	56	…	…
Kyrgyzstan	2014	A	…	…	…	…	…	…	…	…	…	…	…	…
	2015	A	1 506	0	1 506	0.3	100	Yes	…	…	…	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	A	…	…	…	…	…	Yes	…	…	…	…	…	…
Latvia	2014	—	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—	—
	2017	A, C, D	6 857	2 921	9 778	5.1	70	Yes	Yes	No	No	100	100	0
	2018	A, C	4 287	1 444	5 731	3.0	75	Yes	Yes	No	No	100	100	100
Luxembourg	2014	A, B , C	5 654	2 218	7 872	13.9	71	Yes	Yes	No	No	100	35	0
	2015	A, B, C	5 446	1 132	6 578	11.6	82	Yes	Yes	No	No	90	50	0
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	C, D	0	762	762	1.3	0	Yes	Yes			47	28	0

[13] Around 20% – 25% is sent for contract fractionation in another country (Switzerland).

[14] Source plasma collected or separated by Japanese Red Cross Society are distributed to both not-for profit sector and commercial companies.

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
Malaysia	2014	C	33 110	0	33 110	1.1	100	Yes	Yes	Yes	…	…	…	…
	2015	C	31 680	0	31 680	1.0	100	Yes	Yes	Yes	No	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Mexico	2014	C	…	…	…	…	…	…	…	…	…	…	…	…
	2015	C	…	…	…	…	…	Yes	Yes	Yes	Yes	…	…	…
	2016	C	10 770	0	10 770	0.1	100	Yes	Yes	Yes	Yes	85	…	…
	2017	C	…					Yes	Yes	Yes	Yes	…	…	…
Morocco	2014	C	12 000	0	12 000	0.4	100	Yes	Yes	Yes	Yes	…	…	…
	2015	C	9 652	0	9 652	0.3	100	Yes	Yes	Yes	Yes	50	85	50
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	C	6 486	0	6 486	0.2	100	Yes	Yes	Yes	Yes	50	100	50
Namibia	2014													
	2015													
	2017	D	6 483	0	6 483	2.6	100							
	2017													
Netherlands	2014	—	—	—	—	—	—	—	—	—	—	—	—	—
	2015	A	…	…	277 437	16.4	…	Yes	Yes	Yes	Yes	…	…	…
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
New Zealand	2014	C	22 822	32 400	55 222	12.2	41	Yes	Yes	Yes	Yes	100	100	100
	2015	C	28 499	33 061	61 560	13.6	46	Yes	Yes	Yes	Yes	100	89	100
	2017	C	32 027	36 349	68 376	14.4	47	Yes	Yes	Yes	Yes	100	87.3	100
	2018	C	32 793	41 019	73 812	15.6	44	Yes	Yes	Yes	Yes	100	87.8	100
Norway	2014	—	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—	—
	2017	D	45 049	69 06	51 955	9.7	87	No	No	No	No	0	0	0
	2018	D	45 658	3 174	48 832	9.1	93	Yes	Yes	Yes	Yes	0	0	0
Paraguay	2014	C[15]												
	2015	C[16]	4 450[17]	0	4 450	0.7	100	Yes	Yes	No	No	…	…	
	2016	C	4 278[17]	0	4 278	0.6	100	Yes	Yes	No	No	18.8	17.6	
	2017	C	4 464[17]	0	4 464	0.6	100	Yes	Yes	No	No	18.8	17.6	
Poland	2014	B	171 729	28 739	200 468	5.2	85	…	…	…	…	…	…	…
	2015	B	249 170	74 503	323 673	8.4	76	…	…	…	…	…	…	…
	2017	C, D	193 206	21 404	214 610	5.7	90							
	2018	C	…	…	…	…	…	…	…	…	…	…	…	…
Portugal	2014													
	2015													
	2017													
	2018	C[18]	30 000	0	30 000	2.9	100	Yes	Yes	Yes	Yes	36	22	30

[15] In process.

[16] Through an agreement with the National University of Cordoba.

[17] In Kg.

[18] The contract fractionation started in 2018.

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
Republic of Korea	2014	A, B, D	367 993	732 650	1 100 643	21.9	33	Yes	Yes	Yes	Yes	79.9	100	100
	2015	A, B, D	296 167	596 345	892 512	17.7	33	Yes	Yes	Yes	Yes	95.4	100	100
	2017	A	322 134	462 965	785 099	15.3	41	Yes	Yes	Yes	Yes	71.3	100	100
	2018	A, B, D	445995	492044	938039	18.33	48	Yes	Yes	Yes	Yes	68.7	100	100
Republic of Moldova	2014	—	—	—	—	—	—	—	—	—	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	A	86	6 858	6 942	1.7	1	Yes	No	No	No	100		
Russian Federation	2014	A	156 148	0	156 148	1.1	100	Yes	Yes	Yes	…	…	…	…
	2015	A	147 160	0	147 160	1.0	100	Yes	Yes	Yes	…	…	…	…
	2017	A	192 630	0	192 630	1.3	100	Yes	Yes	No	…	…	…	…
	2018	A	185 669	0	185 669	1.3	100	Yes	Yes	No	…	…	…	…
Serbia	2014	A	5 500	650	6 150	0.7	89	Yes	No	No	No	12	0	0
	2015	A	5 350	630	5 980	0.7	89	No	No	No	No	11	0	0
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Singapore	2014	C	15 074	3 861	18 936	3.4	79	Yes	Yes	Yes	No	64.7	24.3	11
	2015	C	13 407	671	14 078	2.5	95	Yes	Yes	Yes	No	45	47	9
	2017	C	14 879	226	15 105	2.6	99	Yes	Yes	Yes	No	60.7	100	38.6
	2018	C	14 879	203	15 082	2.6	99	Yes	Yes	Yes	No	73.8	100	41.5
Slovakia	2014	C	26 077	0	26 077	4.8	100	Yes	Yes	Yes	No	58	45	31
	2015	C	34 801	0	34 801	6.4	100	Yes	Yes	Yes	No	58	45	31
	2017	C	39 105	0	39 105	7.2	100	Yes	Yes	Yes	No	54	41	29
	2018	C	28 669	0	28 669	5.3	100	Yes	Yes	Yes	No	54	41	29
Slovenia	2014	C	19 835	33	19 868	9.6	99	Yes	Yes	Yes	Yes			
	2015	C	15 000	170	15 170	7.3	99	Yes	Yes	Yes	Yes	70	60	100
	2017	C	16 964	975	17 939	8.6	95	Yes	Yes	Yes	Yes	56	54	100
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
South Africa	2014	A	161 588	0	161 588	3.0		Yes	Yes	Yes	Yes	90	100	100
	2015	A	185 097	1896	186 993	3.4	98	Yes	Yes	Yes	Yes	80	100	100
	2017	A, D	299 703	5760	305 463	5.2	98	Yes	Yes	Yes	Yes	80	80	100
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Spain	2014	B	367 235	0	367 235	8.0	100	Yes	Yes	Yes	Yes	71	49	50
	2015	B	373 055	0	373 055	8.1	100	Yes	Yes	Yes	Yes	72	48	50
	2017	B	370 336	0	370 336	7.9	100	Yes	Yes	Yes	Yes	70	43	48
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Sri Lanka	2014													
	2015													
	2017													
	2018	C	36 000	0	36 000	1.7	100	…	…	…	…	…	…	…
Sweden	2014	B,C	95 101	22 853	117 954	12.1	80	…	…	…	…	…	…	…
	2015	B,C	102 124	21 544	123 668	12.6	82	…	…	…	…	…	…	…
	2017	C, D	91 620	19 715	111 335	11.1	82							
	2018	C, D	89 263	18 605	107 868	10.8	83							

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
Switzerland	2014	A, B	66 598	0	66 598	8.0	100	Yes	Yes	Yes	…	…	…	…
	2015	A, B	67 874	1 108	68 982	8.3	98	Yes	Yes	Yes	…	…	…	…
	2017	B, D	63 063	925	63 988	7.5	99							
	2018	B, D	60 839	834	61 673	7.2	98							
Thailand	2014	A, C	30 000	0	30 000	0.4	100	Yes				25	0	0
	2015	A	32 375	2 022	34 397	0.5	94	Yes	Yes	Yes	No	25		
	2017	A	98 223	10 632	108 855	1.6	90	Yes	Yes	Yes	No	25	15	5
	2018	A	90 600	6 819	97 419	1.4	93	Yes	Yes	Yes	Yes	50	25	10
United States of America	2014	B, C	…	…	…	…	…	Yes	Yes	Yes	Yes	…	…	…
	2015	…	…	…	…	…	…	…	…	…	…	…	…	…
	2017	…	…	…	…	…	…	…	…	…	…	…	…	…
	2018	…	…	…	…	…	…	…	…	…	…	…	…	…
Uruguay	2014	C[19]	11 794	0	11 794	3.4	100	Yes	Yes	Yes	No	…	…	…
	2015	C	13 291	0	13 291	3.8	100	Yes	Yes	Yes	No	…	…	…
	2016	C	13 580	471	14 051	4.0	97	Yes	Yes	Yes	No	…	…	…
	2017	C	13 142	0	13 142	3.8	100	Yes	Yes	Yes	No	…	…	…
Uzbekistan	2014	A	3 122	936	4 058	0.1	77	Yes	No	No	No	26	0	0
	2015	A	3 528	1 058	4 586	0.1	77	Yes	No	No	No	31	0	0
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—
	2018	—	—	—	—	—	—	—	—	—	—	—	—	—
Venezuela (Bolivarian Republic of)	2014	A, D	…	…	…	…	…	Yes	Yes	Yes	Yes	…	…	…
	2015	A, D	…	…	…	…	…	Yes	Yes	Yes	Yes	…	…	…
	2016	—	—	—	—	—	—	—	—	—	—	—	—	—
	2017	—	—	—	—	—	—	—	—	—	—	—	—	—

[19] Through a binational agreement for the interchange of plasma and PDMP with the fractionation plant of the National University of Cordoba.

Annex 8. Policy, governance, quality assurance and monitoring 2017/2018

… Not reported/not available.
Blank cell: Not required/not applicable.
— No response.
Part: partial or in process.
* Data of 2017/2018 was not available. Data of earlier years were listed in the table.

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)	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	No	Yes	No
Albania	No	No	No	Yes	Yes	Yes	No	Yes	Yes
Algeria	Yes*	Yes	Yes	Yes	…	Yes	Yes	Yes	No
Andorra	—	—	—	—	—	—	—	—	—
Angola	Yes*	No	Yes	Yes	Yes*	Yes	No	…	Yes
Antigua and Barbuda	—	—	—	—	—	—	—	—	—
Argentina	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Armenia*	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Australia*	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Austria	Yes	Yes	…	Yes	Yes	…	…	Yes	…
Azerbaijan	—	—	—	—	—	—	—	—	—
Bahamas	No	Part	Yes	No	No	No	Part	Yes	No
Bahrain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bangladesh	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Barbados	No	No	…	…	No	No	No	Yes	Yes
Belarus	—	—	—	—	—	—	—	—	—
Belgium*	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Belize	Yes	Part	No	No	No	No	No	Yes	No
Benin	Yes*	Yes	Yes	Yes	No*	Yes	Yes	Yes*	Yes
Bhutan	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Bolivia	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Bosnia and Herzegovina*	No	No	No	Yes	No	No	No	No	No
Botswana	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Brazil	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes
Brunei Darussalam	No	No	No	No	No	Yes	No	Yes	No
Bulgaria	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Burkina Faso	Yes	Yes	Yes	No	…	Yes	No	Yes	Yes
Burundi	Yes*	Yes	Yes	Yes	No*	Yes	Yes	Yes*-	Yes
Cabo Verde		Yes	Yes	Yes	…	No	No	…	No
Cambodia*	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Cameroon	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Canada	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Central African Republic	Yes*	Yes	No	No	No*	Yes	Yes	Yes*	No
Chad	No*	No	No	No	No*	Yes	No	Yes*	Yes

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)	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
Chile	Yes	Yes	Yes	Part	Yes	Yes	No	Yes	Yes
China	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Colombia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Comoros	Yes*	Yes	No	Yes	No*	No	Yes	No*	No
Congo	No	Yes	Yes	No	No	Yes	Yes	No	No
Cook Islands	Yes	Yes	No	No	No	No	Yes	Yes	Yes
Costa Rica	No	No	Part	Part	No	No	Yes	Part	No
Côte d'Ivoire	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Croatia	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes
Cuba	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Cyprus	Yes	Yes	Yes	Yes	…	Yes	Yes	Yes	No
Czechia	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Democratic People's Republic of Korea	—	—	—	—	—	—	—	—	—
Democratic Republic of the Congo	Yes*	Yes	Yes	No	No*	No	Yes	…	No
Denmark	Yes	Yes	No	Yes	Yes	No[1]	Yes	Yes	Yes
Djibouti	—	—	—	—	—	—	—	—	—
Dominica	…	…	…	…	…	…	Yes	…	…
Dominican Republic	Yes	Yes	No	No	No	No	Yes	Yes	Yes
Ecuador	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Egypt	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
El Salvador	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes
Equatorial Guinea	—	—	—	—	—	—	—	—	—
Eritrea	Yes*	Yes	Yes	No	No*	Yes	No	…	Yes
Estonia	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Eswatini	Yes	Yes	…	Yes	Yes	No	Yes	Yes	No
Ethiopia	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Fiji	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Finland	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes
France	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Gabon	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
Gambia	Yes*	Yes	Yes	No	No*	Yes	No	Yes	Yes
Georgia	—	—	—	—	—	—	—	—	—
Germany*	Yes	Yes	…	Yes	Yes	No	Yes	Yes	Yes
Ghana	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Greece*	Yes	Yes	Yes	Yes	Yes	Yes	…	Yes	Yes
Grenada	—	—	—	—	—	—	—	—	—
Guatemala	Yes	Part	Yes	Yes	Part	Yes	No	Yes	Yes
Guinea	—	—	—	—	—	—	—	—	—
Guinea-Bissau	—	—	—	—	—	—	—	—	—
Guyana	Yes	No	Yes	Part	Yes	Yes	…	Yes	Yes

[1] All blood centre activities are financed by the government through taxes. Blood is free of charge for wards and patients.

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)	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
Haiti	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes
Honduras	No	Part	No	No	Yes	Yes	Yes	Yes	No
Hungary	—	—	—	—	—	—	—	—	—
Iceland	Yes	No	No	Yes	Yes	No	No	Yes	Yes
India*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indonesia	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Iran (Islamic Republic of)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Iraq*	Yes	No	No	No	Yes	No	No	…	No
Ireland	—	—	—	—	—	—	—	—	—
Israel*	No	Yes	No	No	Yes	No	…	Yes	Yes
Italy	Yes	Yes	Yes	Yes	Yes	Yes	…	Yes	Yes
Jamaica	Yes	Yes	Yes		No	Yes	No	Yes	Yes
Japan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Jordan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kazakhstan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kenya	Yes*	Yes	Yes	Yes	Yes*	Yes	No	Yes*	Yes
Kiribati	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes
Kuwait	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Kyrgyzstan	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Lao People's Democratic Republic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Latvia	No	No	No	Yes	No	Yes	Yes	Yes	Yes
Lebanon*	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No
Lesotho	Yes	Yes	Yes	No	No	Yes	No	No	Yes
Liberia	Yes*	Yes	No	No	No*	Yes	No		No
Libya	Yes	No	No	No	No	No	No	No	No
Lithuania	—	—	—	—	—	—	—	—	—
Luxembourg	Yes	No	No	Yes	No	Yes	Yes	Yes	No
Madagascar	Yes	Yes	No	No	No	Yes	No	Yes	Yes
Malawi	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Malaysia*	Yes	Yes	Yes	Yes	Yes	Yes	Yes[2]	Yes	Yes
Maldives	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mali	Yes	Yes	Yes	Yes	…	Yes	No	Yes	No
Malta	Yes	No	No	Yes	Yes	Yes	No	Yes	…
Marshall Islands	No	No	No	No	Yes	Yes	No	…	…
Mauritania	Yes*	Yes	Yes	No	No*	Yes	No	…	No
Mauritius		Yes	Yes	No	No	Yes	Yes	Yes	Yes
Mexico	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Micronesia (Federated States of)	No	No	No	No	No	No[3]	No	Yes	No
Monaco	—	—	—	—	—	—	—	—	—

[2] Partial cost recovery (only for processing and screening cost) for private health care facilities.

[3] No dedicated governmental fund for blood services. All funding for blood services is derived from funding for the hospital laboratory.

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)	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
Mongolia	Yes	Yes	Yes	Yes	Yes	Yes	…	Yes	Yes
Montenegro	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Morocco	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mozambique	Yes	No	No	Yes	Yes	Yes	No	…	Yes
Myanmar	No	No	No	Yes	Yes	Yes	No	Yes	Yes
Namibia	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Nauru	—	—	—	—	—	—	—	—	—
Nepal	Yes	Yes	…	…	Yes	…	Yes	Yes	Yes
Netherlands*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
New Zealand	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Nicaragua	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Niger	Yes	Yes	No	Yes	No	Yes	No		Yes
Nigeria	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Niue	No		No	No	No	No	No	Yes	Yes
North Macedonia	…	No	No	Yes	No	Yes	Yes	Yes	No
Norway*	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes
Oman	Yes	Yes	…	…	Yes	Yes	No	Yes	Yes
Pakistan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Palau	No	…	No	…	No	…	…	Yes	…
Panama	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Papua New Guinea	Yes	Yes		Yes	Yes	No	No	Yes	No
Paraguay	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Peru	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Philippines*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Poland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Portugal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Qatar	No	No	No	No	No	Yes	No	Yes	Yes
Republic of Korea	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Republic of Moldova	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Romania	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Russian Federation	Yes	Yes	Yes	Yes	Yes	Yes	…	Yes	Yes
Rwanda	Yes*	Yes	Yes	Yes		Yes	No	Yes*	Yes
Saint Kitts and Nevis	…	…	…	…	No	…	…	…	…
Saint Lucia	No	No	No	No	No	No	No	Yes	No
Saint Vincent and the Grenadines	No	No	No	No	No	No	No	No	No
Samoa*	Yes	No	No	No	Yes	Yes	No	Yes	Yes
San Marino	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	Yes*	Yes	Yes	No	No*	No	No	Yes*	Yes
Saudi Arabia*	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Senegal	Yes*	Yes	Yes	Yes	Yes*	Yes	Yes	Yes*	Yes
Serbia*	Yes	Yes	Yes	…	Yes	Yes	Yes	Yes	Yes

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)	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
Seychelles*	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Sierra Leone	—	—	—	—	—	—	—	—	—
Singapore	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Slovakia	Yes	No	No	Yes	Yes	No	Yes	…	Yes
Slovenia	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Solomon Islands	No	No	No	No	No	No	No	Yes	Yes
Somalia	—	—	—	—	—	—	—	—	—
South Africa	Yes	Yes	Yes	Yes	…	No	Yes	Yes	Yes
South Sudan	…	Yes	Yes	No	…	Yes	No	…	Yes
Spain	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes
Sri Lanka	Yes	Yes	Yes	…	Yes	Yes	No	Yes	Yes
Sudan*	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Suriname	Yes	Yes	…	Yes	Yes	No	Yes	Yes	Yes
Sweden	Yes	No	No	Yes	Yes	No	Yes	Yes	No
Switzerland	Yes	Yes	…	Yes	Yes	No	Yes	Yes	No
Syrian Arab Republic	—	—	—	—	—	—	—	—	—
Tajikistan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thailand	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Timor-Leste	Yes	No	Yes	No	Yes	No	No	Yes	Yes
Togo	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Tonga	Yes	…	…	…	No	…	…	Yes	Yes
Trinidad and Tobago	Yes	Yes	No	No	No	Yes	No	Yes	Yes
Tunisia	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	…
Turkey	Yes	Yes	…	Yes	Yes	Yes	Yes	Yes	Yes
Turkmenistan	—	—	—	—	—	—	—	—	—
Tuvalu	—	—	—	—	—	—	—	—	—
Uganda	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes
Ukraine	—	—	—	—	—	—	—	—	—
United Arab Emirates	Yes	Yes	No	Yes	No	Yes	…	Yes	…
United Kingdom of Great Britain and Northern Ireland*	…	Yes	Yes	Yes	Yes	…	No	Yes	Yes
United Republic of Tanzania	Yes	No	Yes	No	No	Yes	No	Yes	Yes
United States of America	Yes	…	…	Yes	Yes	…	Yes	Yes	Yes
Uruguay	No	Yes	Part	Yes	No	No	No	Yes	Yes
Uzbekistan*	Yes	Yes	No	Yes	Yes	Yes	Yes	…	Yes
Vanuatu*	No	Yes	Yes	…	No	Yes	No	Yes	Yes
Venezuela (Bolivarian Republic of)*	Yes	…	No	Yes	No	Yes	No	Yes	No
Viet Nam*	No	No	No	Yes	Yes	No	Yes	Yes	No
Yemen	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes
Zambia*	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Zimbabwe	Yes	Yes	Yes	No	Yes	Yes	Yes	…	Yes

Annex 8. Policy, governance, quality assurance and monitoring 2017/2018 (continued)

… Not reported/not available.
Blank cell: Not required/not applicable.
— No response.
Partial: partial or in process.
* Data of 2017/2018 was not available. Earlier year data was listed in the table.

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	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited	BTS having computerized information management system	Number of centres having computerized information management system
Afghanistan	Yes	No	No	No	No	No		No	
Albania	Yes	Yes	No	Yes	Yes	No		Yes	1
Algeria	Yes	Yes	No	Yes*	Yes*	No		No*	
Andorra	—	—	—	—	—	—	—	—	—
Angola	Yes	No	No	Yes*	Yes*	No		…	
Antigua and Barbuda	—	—	—	—	—	—	—	—	—
Argentina	Yes	Yes	Yes	Yes	Yes	Yes		Yes	
Armenia*	No	No	Yes	No	Yes	No		No	
Australia*	Yes	No	Yes	Yes	Yes	Yes	82	Yes	
Austria	…	Yes	Yes	Yes	Yes	Yes	2	Yes	
Azerbaijan	—	—	—	—	—	—	—	—	—
Bahamas	Part	…	No	Part	Yes	Part		Yes	
Bahrain	Yes	No	Yes	No	Yes	Yes		Yes	
Bangladesh	Yes	No	No	Yes	Yes	No		No	
Barbados	No	…	No	No	…	No		…	
Belarus	—	—	—	—	—	—	—	—	—
Belgium*	Yes	Yes	Yes	Yes	Yes	Yes	2	Yes	6
Belize	Yes	No	No	Yes	Yes	NO		Yes	
Benin	Yes	No	Yes	No*	No*	No		Yes*	
Bhutan	Yes	Yes	Yes	Yes	No	No		Yes	4
Bolivia	Yes	…	No	Yes	Yes	Yes		Yes	
Bosnia and Herzegovina*	Yes	No	No	No	No	Yes	1	Yes	
Botswana	Yes	No	No		No	No		Yes	2
Brazil	Yes	…	Yes	Yes	Yes	Yes		Yes	
Brunei Darussalam	Yes	No	No	No	No	Yes	1	Yes	4
Bulgaria	Yes	Yes	Yes	Yes	Yes	Yes	29	Yes	29
Burkina Faso	Yes	Yes	Yes	No	No	No		Yes	4
Burundi	No	No	No	Yes*	Yes*	No		No*	
Cabo Verde	No	No	No	Yes*	Yes*	No		…	
Cambodia*	Yes	No	No	Yes	Yes	No		Yes	1
Cameroon	No	No	Yes	No	No	No		No	
Canada	Yes	Yes	Yes	Yes	Yes	No		Yes	
Central African Republic	No	No	No	No*	No*	No		Yes*	1
Chad	Yes	No	No	No*	No*	No		Yes*	1
Chile	Yes	…	Part	Yes	Yes	Yes[1]		Yes	
China	Yes	Yes	No	Yes	Yes	No		Yes	452

[1] Accreditation of health providers since 2009. All blood services providing services as health care providers.

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	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited	BTS having computerized information management system	Number of centres having computerized information management system
Colombia	NO	…	Yes	Yes	Yes	No[2]		Yes	
Comoros	No	No	No	Yes*	Yes*	No		No*	
Congo	Yes	No	No	No	No	No		No	
Cook Islands	Yes	No	Yes	No	No	No		No	
Costa Rica	No	…	No	Part	Yes	Yes		Yes	
Côte d'Ivoire	Yes	No	Yes	Yes	Yes	No		Yes	22
Croatia	Yes	Yes	Yes	Yes	Yes	No		Yes	7
Cuba	Yes	…	Yes	Yes	Yes	Yes		Yes	
Cyprus	Yes	No	Yes	No	No	Yes		Yes	2
Czechia	Yes	Yes	Yes	Yes	Yes	Yes[3]		Yes	77
Democratic People's Republic of Korea	—	—	—	—	—	—	—	—	—
Democratic Republic of the Congo	Yes	No	No	No*	No*	No		…	
Denmark	Yes	Yes	Yes	Yes	Yes	Yes[4]	5	Yes	5
Djibouti	—	—	—	—	—	—	—	—	—
Dominica	…	…	…	…	…	…		…	
Dominican Republic	No	…	No	Yes	Yes	No		Yes	
Ecuador	Yes	…	Yes	Yes	Yes	Yes		Yes	
Egypt	Yes	Yes	No	Yes	No	Yes[5]	1	Yes	17
El Salvador	Yes	…	No	Part	Yes	No		Yes	
Equatorial Guinea	—	—	—	—	—	—	—	—	—
Eritrea	Yes	No	No	No*	No*	No		…	
Eswatini	Yes	Yes	Yes	No	No	No		Yes	
Estonia	No	Yes	Yes	Yes	Yes	…		Yes	4
Ethiopia	Yes	No	No	No	No	No		Yes	1
Fiji	No	Yes	Yes	Yes	No	No		No	
Finland	Yes	No	Yes	Yes	Yes	Yes		Yes	1
France	Yes	Yes	Yes	Yes	Yes	…		Yes	
Gabon	Yes	No	Yes	Yes	Yes	No		Yes	1
Gambia	No	No	No	No*	No*	No		No	
Georgia	—	—	—	—	—	—	—	—	—
Germany *	Yes	Yes	Yes	Yes	Yes	…		N/A	
Ghana	Yes	No	No	Yes	Yes	No		Yes	1
Greece *	Yes	Yes	Yes	Yes	Yes	Yes	59	Yes	70
Grenada	—	—	—	—	—	—	—	—	—
Guatemala	Yes	…	No	Yes	Yes	No		Yes	
Guinea	—	—	—	—	—	—	—	—	—
Guinea-Bissau	—	—	—	—	—	—	—	—	—
Guyana	Yes	…	No	Yes	Yes	No		Yes	
Haiti	Yes	…	No	No	No	No		No	
Honduras	No	…	No	No	No	No		No	
Hungary	—	—	—	—	—	—	—	—	—

[2] Two blood banks accredited by AABB.

[3] Accreditation is not obligatory but around 90% of the blood services have some forms of accreditation against ISO or other standards.

[4] Five of five blood centres are accredited according to the Danish Quality Model for Hospitals; one of them is also accredited according to ISO 15189.

[5] AABB (accredited with conditional status).

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	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited	BTS having computerized information management system	Number of centres having computerized information management system
Iceland	No	No	Yes	Yes	Yes	No[6]		Yes	1
India*	Yes	Yes	No	…	Yes	Yes[7]		…	
Indonesia	Yes	Yes	No	No	No	No		No	
Iran (Islamic Republic of)	Yes	Yes	Yes	Yes	Yes	Yes	91	Yes	91
Iraq*	No	No	Yes	Yes	Yes	No		Yes	1
Ireland	—	—	—	—	—	—	—	—	—
Israel*	Yes	No	No	No	No	Yes	1	Yes	8
Italy	Yes	No	Yes	Yes	Yes	Yes	278	Yes	278
Jamaica	Yes	No	No	Yes	Yes	No		No	
Japan	Yes	No	Yes	Yes	Yes[8]	Yes	54	Yes	54
Jordan	Yes	No	No	Yes	Yes	No		Yes	2
Kazakhstan	Yes	…	…	Yes	Yes	Yes	7	Yes	18
Kenya	Yes	No	Yes	Yes	Yes	No		…	
Kiribati	Yes	Yes	Yes	No	No	No		Yes	1
Kuwait	Yes	No	Yes	Yes	No	Yes	1	Yes	1
Kyrgyzstan	Yes	Yes	Yes	Yes	Yes	Yes	3	Yes	7
Lao People's Democratic Republic	…	No	No	No	No	No		Yes	
Latvia	Yes	…	Yes	Yes	Yes	Yes	7	Yes	7
Lebanon*	Yes	…	No	Yes	Yes	No		Yes	50
Lesotho	No	Yes	Yes	Yes	Yes	No		Yes	3
Liberia	…	…	No	No	No	No		…	
Libya	No	Yes	No	No	No	No		No	
Lithuania	—	—	—	—	—	—	—	—	—
Luxembourg	No	No	Yes	Yes	Yes	Yes[9]	1	Yes	
Madagascar	No	Yes	Yes	No	No	No		No	
Malawi	No	Yes	Yes	Yes	Yes	No		Yes	4
Malaysia*	Yes	Yes	Yes	Yes	Yes[10]	Yes[11]	7	Yes	
Maldives	No	No	No	No	No	No		No	
Mali	Yes	No	No	No	No	No		No	
Malta	yes	…	Yes	Yes	Yes	No		Yes	1
Marshall Islands	No	No	No	No	No	No		…	
Mauritania	No	No	No	No	No	No		No	
Mauritius	Yes	No	Yes	No	No	Yes[12]		Yes	1
Mexico	Yes	…	Part	Yes	Yes	NO		Yes	
Micronesia (Federated States of)	Yes	No	No	No	No	No		Yes	3
Monaco	—	—	—	—	—	—	—	—	—
Mongolia	Yes	No	Yes	Yes	Yes	Yes	27	Yes	27
Montenegro	Yes	No	No	Yes	No	No		Yes	1

[6] ISO 9001:2008.

[7] The National Accreditation Board for Hospitals and Health Care Providers (NABH) has a special programme for accreditations of blood banks.

[8] The Japanese Red Cross Society (JRCS) is licensed by the government to collect blood. It 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.

[9] ISO 9001 and ISO 15189.

[10] Medical Practice Division of Ministry of Health undertakes the licensing for private health care facilities.

[11] Department of Standards, Malaysia.

[12] Blood service is ISO 9001:2008 certified by the Mauritius Standards Bureau.

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	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited	BTS having computerized information management system	Number of centres having computerized information management system
Morocco	Yes	No	Yes	Yes[13]	Yes	No		Yes	8
Mozambique	Yes	No	Yes	No	No	No		Yes	1
Myanmar	Yes	Yes	No	Yes	No	No		Yes	37
Namibia	Yes	No	Yes	Yes	Yes	Yes[14]	1	Yes	1
Nauru	—	—	—	—	—	—	—	—	—
Nepal	Yes	No	Yes	Yes	Yes	No		N/A	
Netherlands*	Yes	Yes	Yes	Yes	Yes	Yes		N/A	
New Zealand	Yes	Yes	Yes	Yes	Yes	Yes[15]	6	Yes	6
Nicaragua	Yes	…	Part	Yes	Yes	No		Yes	
Niger	No	No	No	Yes	Yes	No		…	
Nigeria	Yes	No	No	No	No	No		…	
Niue	No	No	No	No	No	No		No	
North Macedonia	No	Yes	No	No	No	No		Yes	3
Norway	Yes	No	Yes	Yes	Yes	Yes	16	Yes	22
Oman	Yes	No	Yes		No	No		Yes	13
Pakistan	Yes	Yes	Yes	Yes	Yes	No		Yes	50
Palau	…	No	No	…	…	No		No	
Panama	No	…	No	Yes	Yes	No		Yes	
Papua New Guinea	Yes	Yes	Yes	Yes	…	No		No	
Paraguay	Yes	…	Part	Yes	Yes	No		Yes	
Peru	Yes	…	No	Yes	Yes	No		Yes	
Philippines*	Yes	No	No	Yes	Yes	No		Yes	16
Poland	Yes	Yes	Yes	Yes	Yes	Yes[16]	23	No	
Portugal	Yes	Yes	Yes	Yes	Yes	No		Yes	104
Qatar	Yes	No	Yes	Yes	No	Yes[17]	1	Yes	
Republic of Korea	Yes	No	Yes	Yes	Yes	Yes[18]	105	Yes	105
Republic of Moldova	Yes	Yes	Yes	Yes	Yes	Yes	17	Yes	17
Romania	Yes	No	Yes	Yes	Yes	No		Yes	4
Russian Federation	Yes	Yes	Yes	Yes	Yes	…		Yes	
Rwanda	Yes	No	Yes	Yes*	Yes*	Yes	5	Yes*	5
Saint Kitts and Nevis	No	…	No	NO		No		No	
Saint Lucia	No	…	No	NO	No	No		…	
Saint Vincent and the Grenadines	No	…	No	No	No	No		No	
Samoa*	Yes	Yes[19]	Yes	No	No	No		No	
San Marino	—	—	—	—	—	—	—	—	—
Sao Tome and Principe	No	No	No	No	No	No		…	
Saudi Arabia*	Yes	Yes	Yes	Yes	Yes	Yes	24	N/A	
Senegal	Yes	Yes	No	Yes	Yes	No		Yes	2
Serbia*	Yes	Yes	Yes	No	No	No		Yes	

13 The blood centres are inspected by the national centre, and each year an audit of all centres is conducted.

14 AfSBT accreditation.

15 Accredited by MedSafe, the New Zealand medicines regulatory authority.

16 According to article 14 of the Polish Blood Transfusion Act of 22 August 1997.

17 College of American Pathologists.

18 Blood centre approval by Korean CDC, and Blood Laboratory Centre ISO accreditation.

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

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	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited	BTS having computerized information management system	Number of centres having computerized information management system
Seychelles*	Yes	Yes	Yes	No	No	No		Yes	2
Sierra Leone	—	—	—	—	—	—	—	—	—
Singapore	Yes	No	Yes	Yes	Yes	Yes[20]	1	Yes	1
Slovakia	Yes	Yes	Yes	Yes	Yes	No[21]		Yes	44
Slovenia	Yes	Yes	Yes	Yes	Yes	No		Yes	3
Solomon Islands	Yes	No	No	No	No	No		No	
Somalia	—	—	—	—	—	—	—	—	—
South Africa	Yes	Yes	Yes	Yes	Yes	Yes[22]	11	Yes	11
South Sudan	Yes	No	No	No	No	No		…	
Spain	Yes	Yes	Yes	Yes	Yes	Yes	20	Yes	20
Sri Lanka	Yes	Yes	Yes	Yes	Yes	Yes[23]	1	Yes	103
Sudan*	Yes	Yes	No	Yes	No	No		No	
Suriname	Part	No	No	Part	Yes	No		No	
Sweden	Yes	Yes	Yes	Yes	Yes	Yes[24]	25	Yes	26
Switzerland	Yes	No	Yes	Yes	Yes	Yes[25]	11	Yes	11
Syrian Arab Republic	—	—	—	—	—	—	—	—	—
Tajikistan	Yes	Yes	No	Yes	Yes	Yes	4	Yes	4
Thailand	Yes	Yes	Yes	Yes	No	Yes[26]	13	Yes	13
Timor-Leste	Yes	No	No	Yes	No			No	
Togo	Yes	No	No	Yes	Yes	No		Yes	2
Tonga	No	No	No	…	…	No		Yes	1
Trinidad and Tobago	No	…	No	No	No	No		No	
Tunisia	…	Yes	Yes	No	No	Yes[27]	1	Yes	4
Turkey	Yes	No	Yes	Yes	Yes	…		Yes	
Turkmenistan	—	—	—	—	—	—	—	—	—
Tuvalu	—	—	—	—	—	—	—	—	—
Uganda	Yes	No	Yes	No	No	Yes	1	Yes	4
Ukraine	—	—	—	—	—	—	—		
United Arab Emirates	Yes	No		Yes	Yes	Yes[28]	4	Yes	11
United Kingdom of Great Britain and Northern Ireland*	Yes	Yes	Yes	Yes	Yes	Yes	10	Yes	
United Republic of Tanzania	No	No	No	No	Yes	Yes	2	Yes	6
United States of America	Yes	Yes	Yes	…	Yes	Yes		…	
Uruguay	Part	…	No	…	Yes	No		Yes	
Uzbekistan*	Yes	No	No	Yes	Yes	No		…	
Vanuatu*	No	No	No	No	No	Yes	2	No	
Venezuela (Bolivarian Republic of)*	Yes	Yes	…	No	Yes	No		…	

[20] AABB international accreditation.

[21] Blood transfusion services are accredited according to European Commission blood directives.

[22] SANAS (South African National Accreditation System).

[23] National Blood Centre is accredited for ISO 1589:2012.

[24] Technical accreditation according to ISO/IEC 17025 or ISO/IEC 15189.

[25] GMP, ISO 17025, ISO 9001.

[26] ISO 9001, 15189, 15190.

[27] ISO 9001.

[28] AABB, clinical laboratory accreditation standard (JCI), CAP (College of American Pathologists).

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	Regular inspection of the BTS	Licensing of the BTS	BTS accreditation	Number of centres accredited	BTS having computerized information management system	Number of centres having computerized information management system
Viet Nam*	No	No	Yes	No	No	No		Yes	2
Yemen	No	No	No	Yes	Yes	No		No	
Zambia*	Yes	No	No	No	No	No		Yes	9
Zimbabwe	No	No	No	No	No	No		Yes	5

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