

*Stepwise Access to Safe Plasma Proteins in Resource-Constrained Countries:  
Local Production & Pathways to Fractionation*

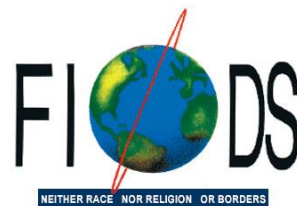
# Recruitment and retention of safe blood and plasma donors

*Giuliano Grazzini, Italy*

*International Federation of Blood Donor Organizations*

FIODS/IFBDO

*September 22nd, 2021*



I declare that I have NO affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter or materials discussed in this presentation.

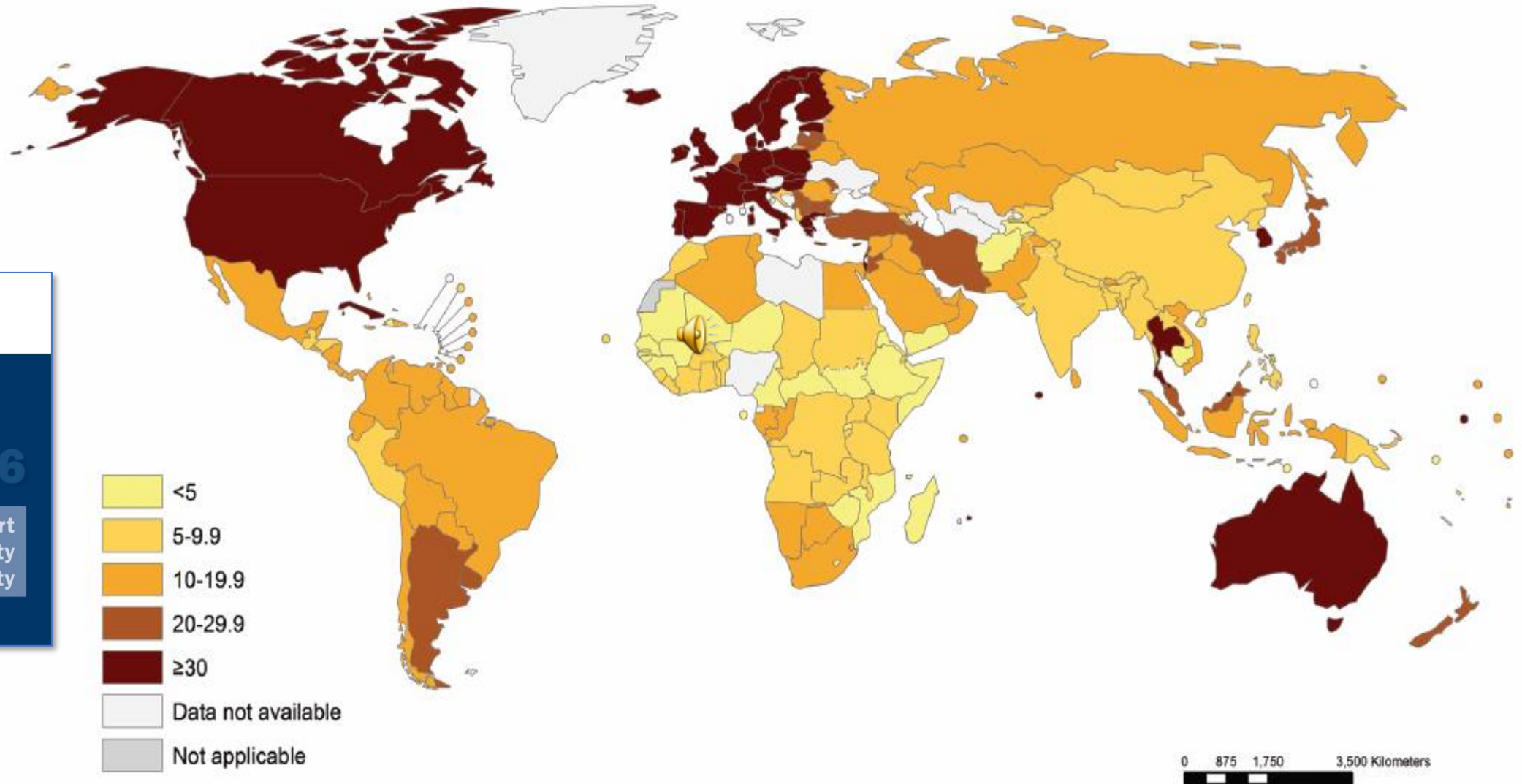
# Agenda

- Overview on the current status of blood and plasma availability worldwide according to WHO data
- Guiding principles for recruitment and retention of blood and plasma donors in LMIC
- Culturally sensitive promotion of blood and plasma donation and *social marketing*
- The role of Blood Donor Organizations and Associations
- Sensitization and education of donors on the specific value of plasma and its products
- Protection of donors' health and rights
- Final comments / Take-home messages

## *Aims of the topics*

- To provide a general overview on blood donation and blood and plasma availability in LMIC.
  
- To provide general guidance on:
  - implementation and consolidation of culturally sensitive promotion of donation
  - applying the principles of *social marketing* as a strategy for donor recruitment and retention
  - sensitization and education of donors on the specific value of plasma and its products

Figure 3. Whole blood donations per 1000 population, 2013



## WHO Global Database on Blood Safety – 2018 Update (1/4) 171 reporting countries

- As of **2018**, about **118.4 million** blood donations are collected worldwide. **40% of these are collected in high-income countries (HIC), home to 16 % of the world's population.**

MEDIAN WHOLE BLOOD DONATION RATE/1000 pop	
High-income countries (HIC)	31.5
Upper-middle-income countries (UMIC)	15.9
Low-middle-income countries (LMIC)	6.8
Low-income countries (LIC)	5

- **62 countries report collecting fewer than 10 donations/1000 pop. All of these are LMIC.**

## WHO Global Database on Blood Safety – 2018 Update (2/4) 171 reporting countries

- **In 56 countries, more than 50% of the blood supply is still dependent on family/replacement and paid blood donors (47 LMIC).**
- **79 countries collect more than 90% of their blood supply from voluntary unpaid blood donations.**
- **An increase of 7.8 million blood donations from voluntary unpaid donors from 2013 to 2018 has been reported by 156 countries.**

## WHO Global Database on Blood Safety – 2018 Update (3/4) 171 reporting countries

- **World Health Assembly resolution WHA63.12** urges Member States to pursue blood and plasma self-sufficiency through efficiently managed and sustainable blood and plasma programs.
- Individual governments should **ensure sufficient and equitable supply of plasma-derived medicinal products (PDMPs)**; driving products: immunoglobulins and coagulation factors.
- **Only 55 of 171 reporting countries produce PDMPs through the fractionation of plasma collected in the reporting country.**
- Around **25.6 million litres of plasma** from (only) 39 reporting countries were fractionated for the production of PDMPs in 2018 (~47% recovered plasma).



## WHO Global Database on Blood Safety – 2018 Update (4/4) 171 reporting countries

- Nearly 100% of the donations in UMIC are screened following basic quality procedures, as compared to **82% in LMIC**.
- The **prevalence of transfusion-transmissible infections** in blood donations is **considerably higher in LMIC** than in HIC
- Only **37% of the blood collected in LIC is separated into components**, **69% in LMIC**, 95% in UMIC, and 97% in HIC.
- **In most LMIC, millions of litres of plasma that could be recovered from whole blood are currently either not separated or are destroyed.**

- **The volume of recovered plasma wasted in the world that would be potentially available for fractionation is close to 10 million litres.**

*([https://www.who.int/phi/publications/blood-prods\\_technology\\_transfer.pdf](https://www.who.int/phi/publications/blood-prods_technology_transfer.pdf))*

Part of this plasma might also be used in larger blood centers for local preparation of safe plasma proteins, using pathogen reduction or virus-inactivation steps when finishing therapeutic products such as FFP and cryoprecipitate.

## Recruitment and retention of blood and plasma donors in LMIC

- Any donor population should be **healthy, stable, reliable and flexible**.
- **Blood and plasma donor management** is the first of many steps in the blood transfusion chain. It helps to make the blood supply safer and more sustainable.
- Effective donor management and donation systems should rely on **low-risk, regular, voluntary unpaid donors, include donor care and protect donors' health and rights**.
- The development and application of national and local **strategies for donor recruitment and retention are high priorities**.
- The strategies should aim at maintaining a **sufficient and safe blood supply**, according to the increasing demand for blood components for transfusion due to progressive medical advancements in LMIC and unmet needs, **including those for plasma-derived medicinal products – PDMPs**.

## Culturally sensitive promotion of blood and plasma donation (1/4)

- **Blood and plasma donation rates vary significantly** by area, location and community. Different ethnic groups have different donation rates.
- There are strong relationships between donation rates and **age, gender, education, social class, occupation and religion.**
- Promoting blood and plasma donation requires identifying the relevant **behavioural and psychological characteristics of donors = what motivates some individuals and not others to donate.**
- It involves **understanding fundamental aspects of donors' social networks and community, beyond focusing on appeals to altruism.**

## Culturally sensitive promotion of blood and plasma donation (2/4)

- Interventions for donor recruitment and retention need to be **socially and culturally focused and designed to overcome any discrimination.**
- Blood and plasma donation should be seen as **an inclusive process**, encompassing **not only individual-level factors** but also the expression of socially determined commitments, including social reciprocity.
- Donors should become motivated to act in the wider interest of the networks in which these relationships have been formed.

## Culturally sensitive promotion of blood and plasma donation and *social marketing* (3/4)

**Social marketing is an approach used to develop activities aimed at changing or maintaining people's behaviour for the benefit of individuals and society as a whole.**

Combining ideas from *commercial marketing* and the *social sciences*, social marketing is a proven tool for influencing behaviour in a sustainable and cost-effective way.

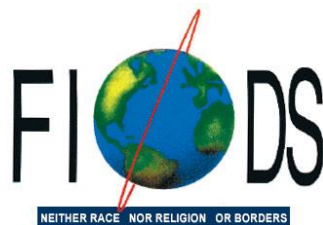
- **Up-to-date principles of social marketing** should be applied to recruitment and retention of blood and plasma donors if a secure and safe blood and plasma supply is to be ensured.
- Social marketing in blood donation is **not about selling or offering products** but about **selling a good feeling to donors and to the whole community.**

## Culturally sensitive promotion of blood and plasma donation and *social marketing* (3/4)

- *Marketing* of donor recruitment should be a **socially oriented process** that not only informs the population about blood and plasma needs but **also changes attitudes and public orientation** so that more members of the community will become donors.
- The ultimate goal is to create a **solid and positive culture of voluntary non-remunerated blood donation as a normal part of a healthy lifestyle**.
- It is fundamental for any well performing blood organization to establish a **long-lasting relationship with donors and their social environment**, since this can enhance consistency and flexibility of supply, cost-effectiveness and blood safety.

## Culturally sensitive promotion of blood and plasma donation and social marketing - The role of Blood Donor Organizations (4/4)

- In many countries in the world, millions of blood donors giving millions of blood and plasma donations per year are organized in not-for-profit, nationally recognized blood donor organizations and associations, coordinated at global level by the **International Federation of Blood Donor Organizations (FIODS/IFBDO)**.




- These blood donor organizations and associations, where present, **make a significant contribution to their respective national and local blood organizations and health care systems.**

## Sensitization and education of blood and plasma donors on the specific value of plasma and its products (1/3)

Transfusion Medicine Reviews 34 (2020) 94–100


Contents lists available at ScienceDirect




ELSEVIER

Transfusion Medicine Reviews

journal homepage:  
<https://www.journals.elsevier.com/transfusion-medicine-reviews/>



Selection of Blood, Blood Components, and Blood Products as Essential Medicines in 105 Low- and Middle-Income Countries



Washington T. Samukange, MSc <sup>a,b</sup>, Helga Gardarsdottir, PhD <sup>a</sup>,  
Hubert G.M. Leufkens, PhD <sup>a</sup>, Aukje K. Mantel-Teeuwisse, PhD <sup>a,\*</sup>

<sup>a</sup> Division of Pharmacoepidemiology & Clinical Pharmacology, Utrecht Institute for Pharmaceutical Sciences (UIPS), Faculty of Science, Utrecht University, Utrecht, the Netherlands  
<sup>b</sup> Paul Ehrlich Institut, Langen, Germany

- In 105 LMIC the **median number of WHO listed blood products of human origin** included in the national lists of essential medicines **was 4 (range 0–10)**. Immunoglobulins were most frequently included (73%), overall inclusion of plasma-derived products was around 50%, and **blood and blood components, which were added to the WHO listing in 2013, were the least selected products (15%)**.



## Sensitization and education of blood and plasma donors on the specific value of plasma and its products (2/3)

- Sensitization and education of blood donors on the importance of **plasma components for transfusion** and of **plasma as a raw material for fractionation**, as well as on the **clinical value of PDMPs**, should focus on their **crucial therapeutic role**, and on the **strategic value of plasma as an essential resource** for healthcare.
- **The continued importance in LMIC of fresh frozen plasma, cryoprecipitate and cryoprecipitate-poor plasma** as alternative therapies in the absence of specific lifesaving PDMPs (for example, factor IX, factor VIII and fibrinogen) **should be emphasized**.
- In LMIC, the **intensity of interventions of social marketing** to promote blood and plasma donation, **should be commensurate with the state of development of the blood system**, taking into account gaps that may exist in GMP compliance of the blood services.

## Sensitization and education of blood and plasma donors on the specific value of plasma and its products (3/3)

- **Raising awareness of the value of plasma for fractionation is intrinsically challenging.**
- The progression of blood collection from whole blood to whole blood plus plasma (through **plasmapheresis**) is a **fundamental path towards increased production of plasma for fractionation.**
- Introducing plasmapheresis requires significant **additional investment** in terms of **specific promotion, social marketing interventions** involving donor education and motivation, and a strong focus on donor retention.
- **World Blood Donor Day (WBDD)** provides a springboard for longer-term donor education programs and blood donation campaigns throughout the year, hence it could serve concurrently to raise awareness in all countries of the importance of plasma as a strategic resource.

## Protection of donors' health

Protection of donors' health:

- is an imperative for ensuring a **continued supply of blood, and even more so of plasma for manufacture**
- should include **donor vigilance**, to be undertaken as a basic part of a nationally organized haemovigilance system
- should be specifically **enhanced if frequent plasmapheresis is implemented.**

## Protection of donors' rights

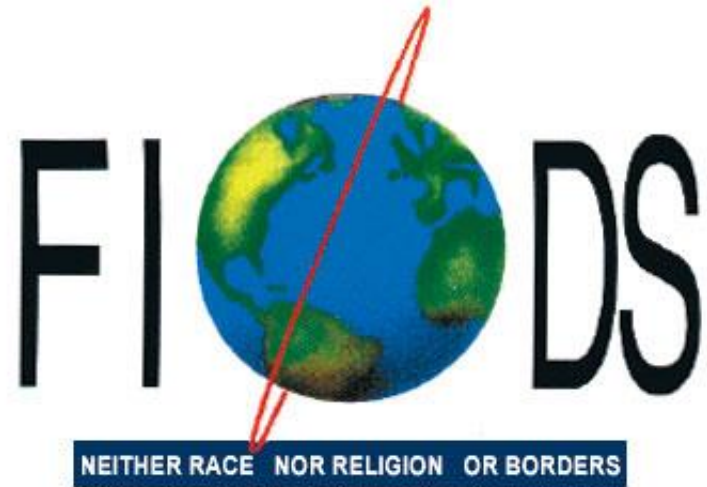
- Protection of donors' rights should be **part of the fundamental ethical principles** underpinning any well established national blood organization.
- The **health, safety and well-being of donors** should not be compromised in order to meet the needs of patients and at the same time donors' eligibility to donate should not be unnecessarily restricted.
- The **acceptance criteria** should not be conditioned arbitrarily by gender, race, nationality, religion, sexual orientation or social class, thus excluding any kind of non-evidence-based discrimination.

*WHO Blood donor counselling implementation guidelines (2014)*

*ISBT Code of ethics relating to transfusion medicine (2017)*

## Final comments / Take-home messages

- **The need for red blood cells separated from whole blood will be steadily increasing in LMIC** due to the (hopefully) progressive medical advancements in these countries.
- As a consequence, **an increasing volume of plasma** potentially usable for fractionation will be generated that **will be discarded if no action is taken to improve the current status** in these countries.
- **Donor management and up-to-date strategies** for recruitment and retention of safe blood and plasma donors, **based on social marketing, culturally sensitive promotion of donation and the strategic value of blood and plasma**, should be extensively implemented in resource-constrained countries.
- **Safety and security of the blood supply and voluntary unpaid donation should be priorities**, targeting low-risk populations, promoting blood and plasma donation as part of a healthy lifestyle and protecting donors' health and rights.
- **Blood Donor Organizations and Associations may play an important role**, making a significant contribution to their respective national blood organizations and health care systems.



THANKS FOR YOUR ATTENTION !