

## Assessing Blood Donor Safety: Evaluating Procedural Adherence and Donor Management Practices through Patient-Reported Experience Measures (PREMs)

\*Tulika Sharma<sup>1</sup>, Gajendra Gupta<sup>1</sup>, Shailja Ahuja<sup>1</sup>

1. Department of Transfusion Medicine & Blood Bank, Santokba Durlabhji Memorial Hospital, Jaipur, Rajasthan, India.

| ARTICLE INFO                                                                                                                                                                                                                                                                                                                                     | ABSTRACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Article type:</b><br/>Research Paper</p> <hr/> <p><b>Article History:</b><br/><b>Received:</b> 29 Jul 2024<br/><b>Accepted:</b> 23 Sep 2024</p> <hr/> <p><b>Keywords:</b><br/>Blood Donor Safety, Procedural Adherence, Donor Management Practices, Patient-Reported Experience Measures (PREMs), Blood Donation.</p>                      | <p><b>Introduction:</b><br/>This study evaluates procedural adherence and donor management practices at a blood donation center, focusing on donor safety using Patient-Reported Experience Measures (PREMs). A cross-sectional survey was conducted from April to June 2024 using a structured questionnaire based on CAHO guidelines. Blood donors aged 18 and above were surveyed about identification processes, health screenings, counseling quality, and post-donation care. The center adhered well to health screening protocols, but gaps were identified in donor identification processes and standardized inquiries about tattoos and medications. Donor education on HIV/AIDS and post-donation care was insufficient, with many donors unclear about when to seek medical help. Improvements are needed in donor identification, standardized screenings, and education. Counselors play a crucial role in addressing these gaps by ensuring thorough screenings and providing better post-donation guidance.</p> |
| <p>► <b>Please cite this paper as:</b><br/>Sharma T, Gupta G, Ahuja Sh. Assessing Blood Donor Safety: Evaluating Procedural Adherence and Donor Management Practices through Patient-Reported Experience Measures (PREMs). <i>Journal of Patient Safety and Quality Improvement</i>. 2024; 12(3): 113-118. Doi: 10.22038/psj.2024.81434.1437</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**\*Corresponding author:**

RDMC building, Floor 5<sup>th</sup>, Santokba Durlabhji Memorial Hospital, Jaipur, Rajasthan, India. 302015  
E-mail: sharmatulika99@gmail.com

©️🇮🇳 Copyright © 2024 Mashhad University of Medical Sciences. This work is licensed under a Creative Commons Attribution-Noncommercial 4.0 International License <https://creativecommons.org/licenses/by-nc/4.0//deed.en>

## Introduction

Blood safety has improved significantly over the past five decades, particularly regarding transfusion-transmitted infections. A major advancement is the transition from paid donors to unpaid voluntary donors. In India, donor selection and deferral are regulated by the Drugs and Cosmetic Act of 1940 and the Standards for Blood Banks and Blood Transfusion Services. Ensuring blood safety involves a careful donor selection process considering legal, ethical, political, and psychological factors. Recruitment and retention policies are designed based on regional donor demographics and deferral patterns (1,2).

The World Health Organization (WHO) defines patient safety as efforts to reduce risks, minimize avoidable harm, and mitigate errors in healthcare. In support of the UN Sustainable Development Goals by 2030, WHO launched the "Decade of Patient Safety 2020-2030" initiative in February 2020. This initiative promotes strategic actions at all levels, integrating WHO's work and emphasizing the links between patient safety, healthcare safety, and clinical programs to enhance health outcomes (3,4).

According to the World Health Organization (2019), hospitals in low and middle-income countries face 134 million adverse events annually due to unsafe care, resulting in 2.6 million deaths. Blood donation is a fundamental component of contemporary healthcare, crucial in saving numerous lives annually. However, many hospitalized patients in low- and middle-income nations face challenges in accessing a timely and safe blood supply at no cost (5).

In India, 90% of blood donations occur at camps, yet challenges remain, including ensuring donor authentication, verification, and filtering based on records. It highlights the need for a centralized donor platform. There is a significant disparity between demand and supply: 30% of patients need more necessary blood components, and 10-12% of components expire unused. Many donation campaigns need to align with real-time demand. Addressing these issues requires integrating stakeholders onto a unified platform and using advanced technology to synchronize donation drives with regional needs (5).

The International Patient Safety Goals (IPSGs) in Joint Commission International (JCI) Accreditation aim to improve patient safety in blood banks by addressing key areas:

1. Accurate patient identification via name verification and Positive Patient Identification (PPID).
2. Improved communication through correct labeling and verification of blood products before transfusion.
3. Enhanced safety of high-alert medications with clear labeling and proper storage
4. Safe surgery practices with stringent patient identification checks.
5. Reduced healthcare-associated infections through comprehensive donor screenings, strict hand hygiene, and aseptic techniques.
6. Safe blood donation by reducing fall risks with hazard-free areas and supportive recliners or beds.

These goals offer evidence-based solutions to enhance patient safety in blood centers (6,7). They aid in health system performance comparisons, public reporting, and provider payment models, though academic documentation is limited. The OECD's Patient Reported Indicators Surveys (PaRIS) program supports their development and standardization. Collecting PREM data aims to improve patient experiences and outcomes, linking positive experiences to better clinical outcomes, medication adherence, and reduced readmission rates (7). Patient-Reported Experience Measures (PREMs) collect feedback on past treatments to assess care quality, focusing on communication and timeliness and are crucial for patient-centered, value-based care. This paper uses PREMs to enhance blood donation safety. PREMs are valuable for:

1. Micro-level: Individual or team activities.
2. Meso-level: Organizational activities.
3. Macro-level: System-wide strategy (8).

Shrivastava et al. (2016) examined blood donor deferral patterns over 13 years at a tertiary care hospital, finding an 11.5% deferral rate, mostly temporary and affecting young donors. Common reasons included medical conditions like jaundice and low hemoglobin. The study highlights the need for stringent donor selection criteria to ensure blood safety and suggests areas for policy

enhancement to improve donor retention and safety protocols. Nissen-Meyer and Seghatchian (2018) discussed regulations ensuring the safety and efficacy of donated blood, emphasizing the importance of donor health evaluations. They reviewed common and rare conditions affecting donor eligibility, noting that while donation cannot be entirely risk-free, rigorous assessment protocols effectively mitigate potential risks (9).

Laermans et al. (2022) conducted a systematic review of the impact of disasters on blood donation rates and safety, analyzing 18 observational studies. The evidence was of very low certainty due to biases and inconsistencies, with no definitive conclusions on changes in transfusion-transmissible infection rates post-disaster. The review highlights the challenges of maintaining blood safety during crises and calls for more robust research methodologies.

### **Materials and Methods**

To assess and evaluate procedural adherence and donor management practices at a blood donation center to ensure blood donor safety using a survey-based approach through Patient-Reported Experience Measures (PREMs).

To evaluate the gaps and effectiveness of donor identification processes at the blood donation center using PREMs.

Blood donation centers play a critical role in ensuring the safety and quality of donated blood, which is vital for supporting healthcare systems and saving lives through transfusions. Procedural adherence and effective donor management are essential in maintaining high donor eligibility standards, blood safety, and donor satisfaction. Ensuring the safety and well-being of blood donors is equally crucial for fostering a social culture of blood transfusion where donors feel valued and confident in their contributions to public health. By assessing these aspects, this study aims to identify areas of strength and opportunities for improvement within the blood donation center's operations and promote a culture of safety and trust among donors and the broader community reliant on safe blood transfusion services.

This approach supports sustainable blood donation practices and enhances the overall

reliability and integrity of the blood supply chain. The tool employed for data collection in this study was a structured survey questionnaire developed based on Chapter 16 of the white paper by CAHO (Canadian Accreditation of Healthcare Organizations), focusing on blood donor safety and Patient-Reported Experience Measures (PREMs). (10). The questionnaire assessed donor perceptions and experiences regarding safety protocols, communication effectiveness, and satisfaction with post-donation care. It included multiple-choice questions, Likert scale ratings, and open-ended prompts to gather comprehensive feedback from blood donors. The survey was administered electronically using Google Forms, allowing for efficient data collection and analysis. This approach ensured adherence to established guidelines while providing insights into areas where donor safety practices could be improved.

The study employed non-probability to select participants who had recently donated blood at the blood donation camps from April 2024 to June 2024.

#### **Inclusion Criteria:**

- Individuals who have donated blood at the camps.
- Age 18 years or older.
- Able to comprehend and respond to survey questions in English/Hindi/Regional Language.
- Willingness to participate voluntarily in the study.

#### **Exclusion Criteria:**

- Individuals younger than 18 years old.
- Individuals who have not donated or deferred to donate blood at the camp.
- Those unable to comprehend or respond to survey questions in English/ Hindi/Regional Language.
- Lack of willingness to participate voluntarily in the study.

#### **Procedure**

Researchers will approach donors at the blood donation center immediately after their donation process or during their waiting period. Potential participants will be informed about the study and invited to participate voluntarily. Those who agree to participate will receive a survey questionnaire to gather feedback on various

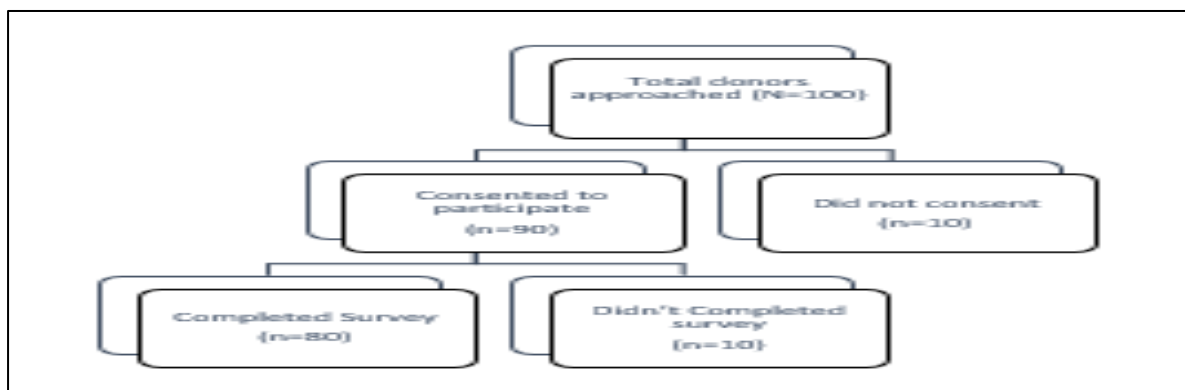
aspects of their donation experience. Data collection will continue until a representative sample size is achieved, ensuring diversity in donor demographics and donation experience.

### Sample Size

The sample size was determined based on the study's objectives and the feasibility of data collection within the given timeframe. Considering the average number of donors at the camps and the expected response rate, a target of 100 donors was set for the initial sample.

The samples were selected from various in-campus, corporate, institute, and charitable NGO blood camps, and the data were collected based on the camps' suitable environment.

The study's goal of assessing procedural adherence and donor management practices required a sample size of 80 participants. This size allows for meaningful statistical analysis while ensuring that the findings are representative of the donor population at the camps.



**Fig 1:** Flow chart of sample selection

## Result

**Table 1:** The survey questions asked at the blood donation center and the percentage of responses.

| Sr.No. | Questions                                                                                                                                 | Yes   | No    | Not applicable |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|----------------|
| 1      | Did the blood center staff identify your name with a valid identity?                                                                      | 0     | 100%  | 0              |
| 2      | Did the blood center staff ask you whether you had food in the last 4 hours?                                                              | 100%  | 0     | 0              |
| 3      | Did the blood center staff check your blood pressure, heart rate, and temperature?                                                        | 100%  | 0     | 0              |
| 4      | Did the blood center staff ask you about the last time you donated blood?                                                                 | 100%  | 0     | 0              |
| 5      | Did the doctor ask about any illness you had in the past year?                                                                            | 100%  | 0     | 0              |
| 6      | Did the doctor ask about your knowledge of HIV and AIDS?                                                                                  | 0     | 100%  | 0              |
| 7      | Did the doctor ask about your history of having multiple sexual partners?                                                                 | 0     | 100%  | 0              |
| 8      | Did the doctor ask about the medication you are taking now?                                                                               | 100%  | 0     | 0              |
| 9      | Did you sign the consent for blood donation?                                                                                              | 100%  | 0     | 0              |
| 10     | Did the doctor examine you before the donation?                                                                                           | 100%  | 0     | 0              |
| 11     | Did the doctor ask you about any tattoos done in the past year?                                                                           | 81.2% | 18.8% | 0              |
| 12     | Did the blood center staff tell you the results of the blood test reports or results?                                                     | 100%  | 0     | 0              |
| 13     | Did our team follow infection prevention techniques during your blood donation procedure, like hand hygiene site preparation, etc.?       | 100%  | 0     | 0              |
| 14     | Did the blood center staff confirm your name before handing the blood donation bag?                                                       | 100%  | 0     | 0              |
| 15     | Did the blood center staff observe you constantly throughout the blood donation time?                                                     | 100%  | 0     | 0              |
| 16     | Did the blood center staff explain to you to put the fingers of the other hand on the swab at the venipuncture site and to raise the arm? | 98.8% | 1.2%  | 0              |
| 17     | Did the blood center staff check the arm and apply a band-aid after the bleeding stopped?                                                 | 100%  | 0     | 0              |
| 18     | Did the blood center personnel give you any refreshments after blood donation?                                                            | 100%  | 0     | 0              |
| 19     | Did you have adequate privacy during the examination and counseling?                                                                      | 100%  | 0     | 0              |
| 20     | Did the blood center advise you when and how to seek urgent medical help?                                                                 | 62.5% | 37.5% | 0              |

The survey results from the blood donation center highlight strengths and areas for improvement in donor management and procedural adherence, consistent with findings from previous studies.

The center demonstrates commendable practices in maintaining rigorous health screening protocols and consistent procedural practices during donor interactions (Shrivastava et al., 2016; Nissen-Meyer & Seghatchian, 2019).

These practices are essential for upholding high donor eligibility standards and ensuring donated blood safety and quality. The thorough application of health history reviews and health examinations by doctors reflects a commitment to meticulous donor evaluation, which is fundamental in safeguarding both donor and recipient health.

### **Discussion**

A significant area requiring improvement is the identification process.

None of the respondents reported that staff correctly identified their names. This procedural lapse raises concerns about data accuracy and donor management efficiency within the center. The survey results reveal that while the center maintains rigorous health screening protocols, there need to be more consistency in the inquiry about recent tattoos and current medications among donors. Standardization across all staff members is necessary to mitigate potential risks associated with blood donation and ensure a comprehensive assessment of donor eligibility. Gaps in donor education were evident, particularly in the omission of critical inquiries related to HIV/AIDS awareness and risk factors such as multiple sexual partners (Shrivastava et al., 2016).

Counselors are pivotal in ensuring donor safety and satisfaction by providing comprehensive information, guidance, and support throughout the donation experience. They serve as educators, ensuring donors are well-informed about health risks, donation procedures, and post-donation care.

The survey also revealed that many donors needed guidance on when and how to seek urgent medical help after donation. It highlights the importance of enhancing post-donation counseling protocols. Counselors can bridge educational gaps by emphasizing

the importance of HIV/AIDS awareness, risk factors assessment, and the significance of disclosing relevant medical information such as recent tattoos and current medications.

Furthermore, counselors facilitate standardized inquiry processes by ensuring consistent and thorough screening of donors (Nissen-Meyer & Seghatchian, 2019).

Their expertise in conducting sensitive health assessments ensures that all potential risks are adequately evaluated, thereby enhancing the safety and quality of donated blood. Counselors also play a critical role in post-donation care, giving donors clear instructions on monitoring their health and knowing when to seek medical assistance.

A recent report by the American Association of Blood Banks (AABB) emphasized the critical role of hemovigilance systems in improving donor safety and procedural adherence in blood donation centers. Hemovigilance helps monitor errors, identify gaps in practices, and inform necessary system changes to mitigate risks like transfusion-transmitted infections. The study also highlights the importance of regular staff training to maintain high standards of donor management and minimize avoidable errors (11). By focusing on these areas, the blood donation center can enhance procedural adherence, improve donor management practices, and ultimately ensure the safety and satisfaction of blood donors.

### **Conclusion**

In conclusion, while the surveyed blood donation center strongly adheres to essential procedural protocols, several critical areas need improvement to enhance donor safety, satisfaction, and operational efficiency. Addressing deficiencies in the identification process, standardizing inquiry protocols, and improving donor education are crucial.

The role of counselors is pivotal in achieving these improvements; their involvement in educating donors, ensuring rigorous screening, and providing comprehensive post-donation guidance is essential. Future initiatives should focus on integrating counselors more effectively into the donation process and investing in their training to elevate care standards and ensure the safety and quality of the blood

supply. This approach will help maintain high operational standards while prioritizing the health of both donors and recipients.

### **Acknowledgments**

We sincerely thank the staff and participants at the blood donation center for their invaluable contributions to this study.

### **References**

1. Shrivastava M, Shah N, Navaid S, Agarwal K, Sharma G. Blood donor selection and deferral pattern as an important tool for blood safety in a tertiary care hospital. *Asian J Transfus Sci.* 2016 Dec;10(2):122.
2. Frontiers. Assessment of beliefs, behaviors, and opinions about blood donation in Telangana, India-A cross-sectional community-based study [Internet]. [cited 2024 Jul 11]. Available from: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2021.785568/full>
3. Focusing on the International Patient Safety Goals. *HCI.* 2023 [cited 2024 Jul 11]. Available from: <https://hci.care/focusing-on-the-international-patient-safety-goals/>
4. Health workforce [Internet]. [cited 2024 Jul 11]. Available from: <https://www.who.int/teams/integrated-health-services/patient-safety/about>
5. Centre of Excellence in Blockchain Technology. [Internet]. [cited 2024 Jul 11]. Available from: <https://blockchain.gov.in/Home/CaseStudy?CaseStudy=BloodBank>
6. Ipsg | PPT [Internet]. [cited 2024 Jul 11]. Available from: <https://www.slideshare.net/slideshow/ipsg-250793083/250793083#104>
7. International Patient Safety Goals (IPSG) | PPT [Internet]. [cited 2024 Jul 11]. Available from: <https://www.slideshare.net/slideshow/international-patient-safety-goals-ipsg/267251147#2>
8. Jamieson Gilmore K, Corazza I, Coletta L, Allin S. The uses of Patient Reported Experience Measures in health systems: A systematic narrative review. *Health Policy.* 2023 Feb 1; 128:1–10.
9. Nissen-Meyer LSH, Seghatchian J. Donor health assessment – When is blood donation safe? *Transfus Apher Sci.* 2019 Feb;58(1):113–6.
10. Consortium of Accredited Healthcare Organizations (CAHO). CAHO white paper on validated PREMs [Internet]. [cited 2024 Jul 11]. Available from: <https://www.caho.in/files/CAHO-White-paper-on-validated-PREMs.pdf>
11. American Association of Blood Banks (AABB). Hemovigilance and blood donor safety. AABB. 2023.