

Impact of Bidirectional Data Interface on Operational Errors in Platelet Apheresis Collections

A Comparative Analysis Before and After Implementation

A Mendrone Junior¹, V Rocha¹, D Alessandro da Silva¹, A Andrade Barbosa¹, P Cresoni Sierra¹, R Silva², M Cardoso², C de Almeida Neto¹
¹ Fundação Pro-Sangue Hemocentro de São Paulo, ² Terumo Blood and Cell Technologies

INTRODUCTION

Through the bidirectional data interface, real-time information exchange between the apheresis equipment (Trima Accel[®]) and Blood Bank Information Systems (BBIS) allows for a significant reduction in human errors and improves the quality of the platelet collection process and products.

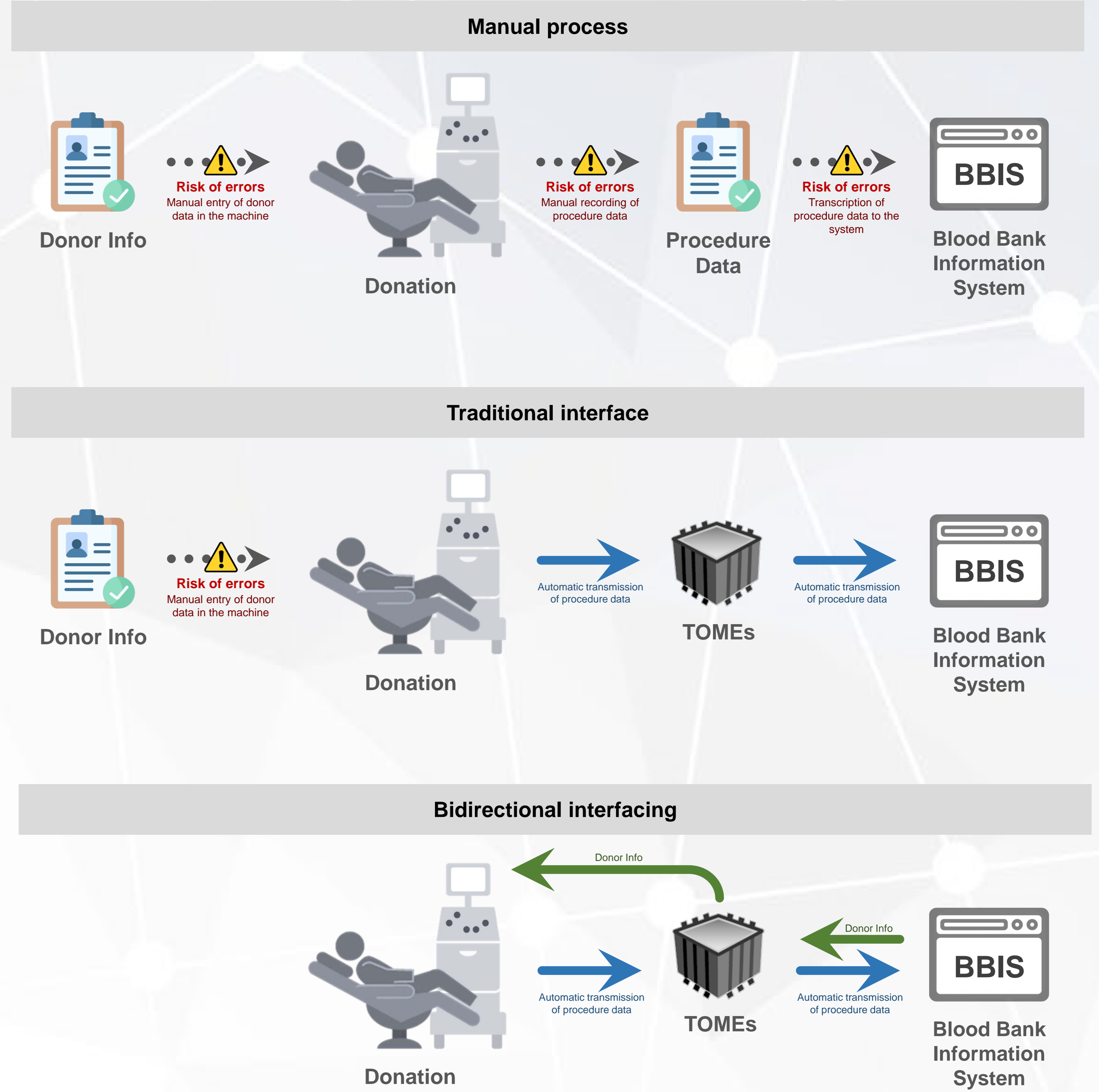
By providing a seamless flow of information, the bidirectional data interface ensures that all necessary information is communicated accurately and in real-time, contributing to the elimination manual data entry errors.

AIM

This study aims to describe the frequency of discrepant donor data before and after the implementation of the bidirectional data interfacing. Additionally, our study intends to evaluate the impact of bidirectional data interface on these errors in platelet apheresis collections, including, but not limited to donors.

METHOD

We conducted a retrospective comparative analysis of data entry errors during platelet apheresis collections. The following parameters were investigated: gender, weight, height, hemoglobin, platelet count and blood type. We compared the frequency of errors recorded in 6,643 collections before and 5,714 collections after the implementation of the bidirectional data interface in our service.



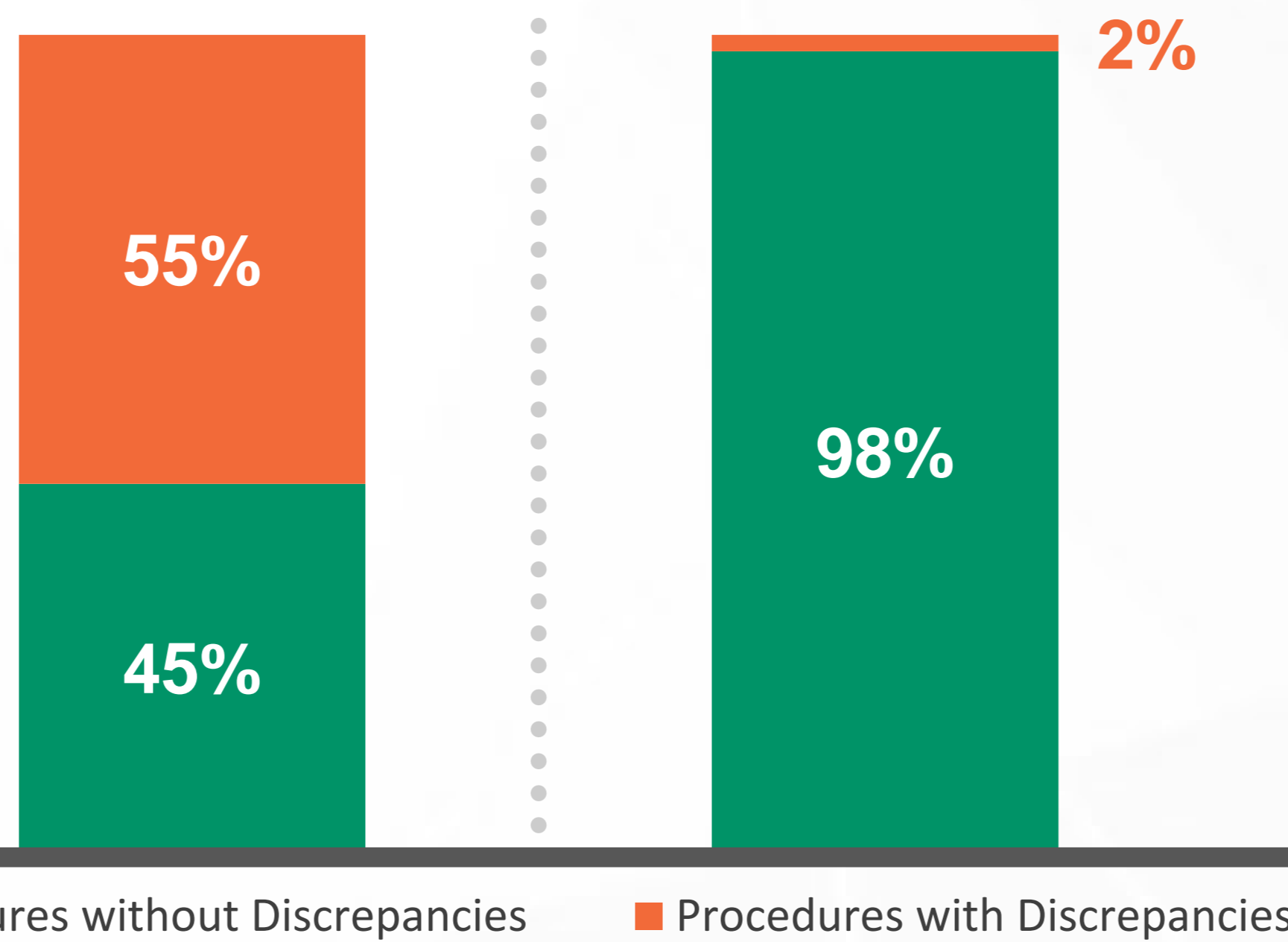
RESULTS AND DISCUSSION

Before Bidirectional

Before bidirectional interfacing, more than half of the procedures were performed with some discrepant donor's data between the BBIS and Trima Accel device.

The greatest differences occurred with:

- Hemoglobin: **45%**
- Height: **17%**
- Weight: **2%**



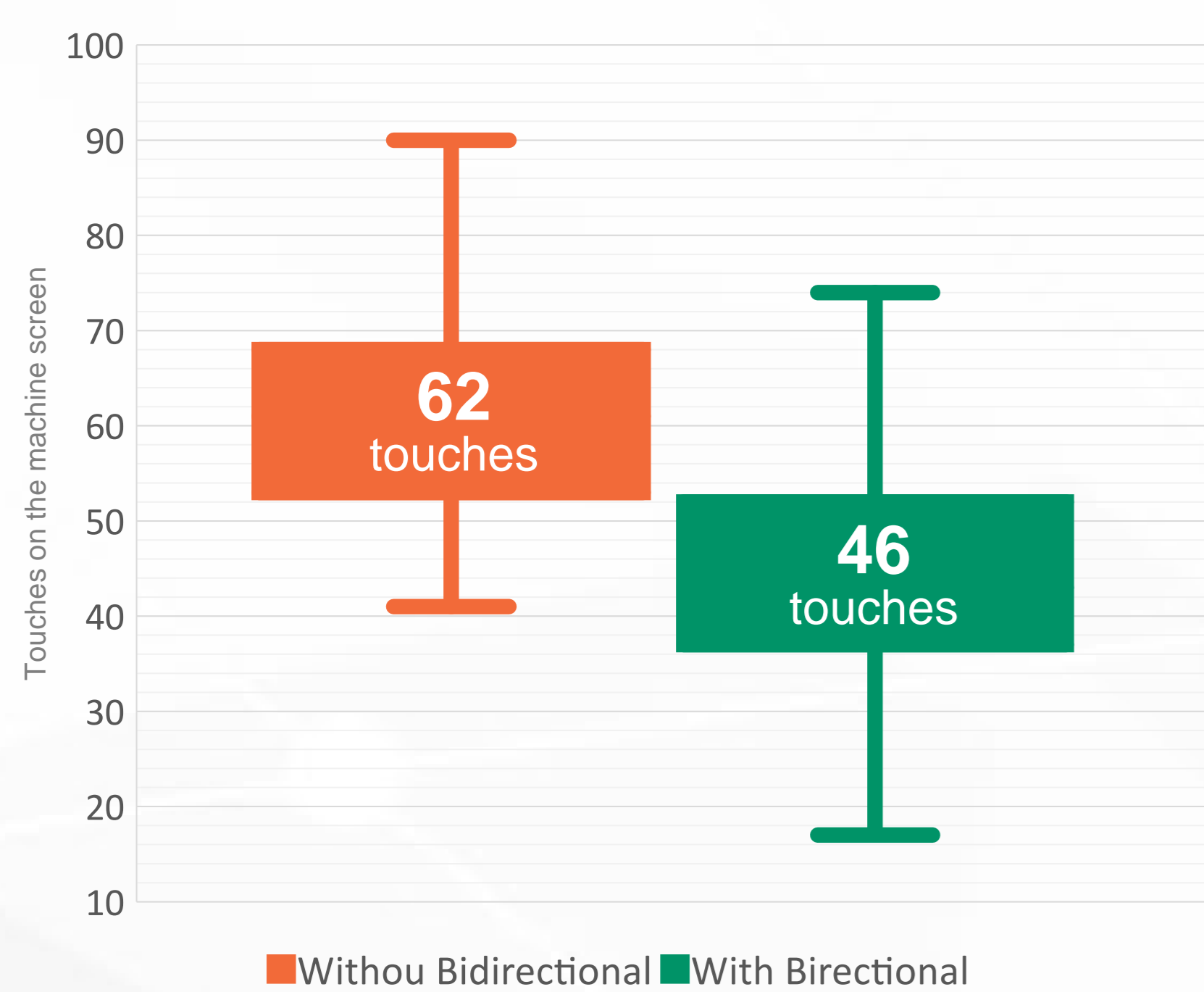
After Bidirectional

After bidirectional interfacing, the number of procedures carried out with any discrepancy in the donor's parameters between the BBIS and Trima Accel device was drastically reduced.

The greatest differences occurred with:

- Height: **2%**
- Weight: **0.5%**
- Gender: **0.3%**

Less interaction on the apheresis device



Before the implementation of the bidirectional interface, 55% of procedures had at least one discrepancy in the donor information entered into the apheresis device. The parameters that most frequently showed differences were Hemoglobin/Hematocrit (45% of procedures and $p < 0.05$) and Height (17% of procedures and $p = 0.07$). After implementation, the frequency of errors reduced significantly to just 2% ($p < 0.05$), reporting discrepancies in donor information and the parameters that showed the most discrepancies were Height (2% of procedures and $p < 0.05$) and Weight (0.5% of procedures and $p = 0.06$).

We also observed a decrease in interactions between staff and the apheresis equipment; i.e. before implementation, it required an average of 62 touches on the equipment screen to complete a procedure, while after implementation, only 46 were needed (a decrease of 25.8%). As a result of the reduction in errors, we also observed, a reduction in products flagged as possibly contaminated with leukocytes. Before the implementation of bidirectional interfacing, 5% of platelet products were flagged as possibly contaminated with leukocytes and after implementation, this number decreased to 3% ($p = 0.05$).

CONCLUSION

Operational errors can significantly affect the safety and efficacy of platelet apheresis procedures. As apheresis devices rely on the information entered to calculate the parameters that are essential to ensuring the safety and efficacy of the procedure, errors during this phase can lead to serious consequences. The cases in which there was a discrepancy between the donor data entered into the apheresis equipment versus the donor data saved in the BBIS after que implementation of the bidirectional interfacing were caused by technical problems, such as: disconnection of the equipment making it impossible to transmit the data or when the operator intentionally altered donor data for some reason.

To the best of our knowledge, this is the first study that has been able to demonstrate the impact of using data management such as bidirectional interfacing in apheresis platelet procedures and how this reduces operational errors.

Bidirectional interfacing allowed:



Scan the QR Code to contact the authors and download a digital version of this poster

