



## Decrease In The Difference Between Instrument Predicted Platelet Count And Actual Platelet Count Following Platelet Collection After Software Upgrade

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# Introduction

- The current automated platelet collection FDA guidance maintains that automated blood cell separator device should be set with a post-donation platelet (PLT) count target of no less than 100,000 platelets/uL
- Collection is determined by a software driven algorithm which varies amongst instruments and manufacturer
- Algorithm usually takes into consideration estimated blood volume, PLT count, target PLT count, splenic mobilization etc

# Actual Post-procedure PLT Higher as Compared to TRIMA Accel v 5.0 Predicted Counts

- During apheresis procedures, PLT are released from the splenic pool into circulation
- Results in higher post procedure count than anticipated
- TRIMA Accel v 5.0 accounted minimally for this and thus the actual post-donation PLT counts were higher as compared to instrument predicted → resulting in lower amount of PLTs that were collected
- TRIMA Accel v 5.1 and 6.0 software release anticipated to address this

## Aim

We hypothesized that actual post-procedure PLT counts will more closely reflect the instrument predicted PLT counts

# Methods

- Actual and instrument predicted PLT counts were compared in same ten donors before and after implementation of v 6.0 software
- All collections performed on TRIMA ACCEL instruments (Caridian BCT)
- Actual post collection platelet counts measured using Beckman Coulter LH780
- Results were compared using paired t-test

## Version 5.0 Actual v/s Predicted PLT Counts

Donor	Actual Count *	Predicted Count*	Difference*	% Lower of Actual
1	189	131	58	31
2	146	112	34	23
3	132	103	29	22
4	151	125	26	17
5	168	120	48	29
6	178	149	29	16
7	152	125	27	18
8	162	118	44	27
9	159	119	40	25
10	161	137	24	15
Average	160	124	36	22

\*x10<sup>3</sup>uL

## Version 6.0 Actual v/s Predicted PLT Counts

Donor	Actual Count *	Predicted Count*	Difference*	% Lower of Actual
1	179	153	26	15
2	147	131	16	11
3	131	118	13	10
4	131	102	29	22
5	172	150	22	13
6	200	192	8	4
7	171	145	26	15
8	190	187	3	2
9	130	119	11	8
10	148	137	11	7
Average	160	143	17	11

\*x10<sup>3</sup>uL

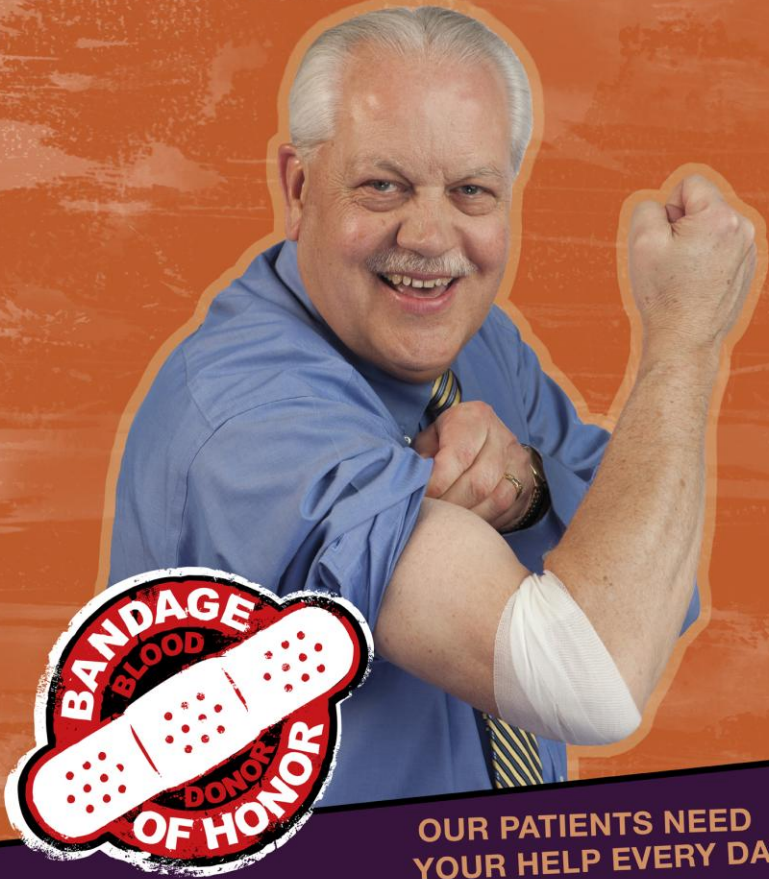
## v 5.0 v/s v 6.0

	Average (Range)		
	Actual Count	Predicted Count	Difference of Actual
v 5.0	160 (132-189)	124 (103-149)	36 (26-58)
v 6.0	160 (131-200)	143 (102-192)	17 (3-29)
p	0.5	0.02	0.0007

Counts are x 10<sup>3</sup>uL

# Conclusions

- Actual post procedure platelet counts are higher as compared to instrument predicted counts
- Version 6.0 upgrade decreases the difference between the actual post procedure count and instrument predicted counts



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