# Positive Impact of Moving From Trip Scales to Automated Mixing Scales

**New York Blood Center**

**Ruth Harkin, Martha Hostetter, Karen Sueper**

**www.nybloodcenter.org**

## INTRODUCTION

**The New York Blood Center collects approximately 400 thousand Whole Blood donations per year and, prior to September 2008, leukoreduced 65% via sterile docking. At this point NYBC implemented in-line filtration bags to meet rapid customer conversions to leukoreduction. NYBC is currently 100% leukoreduced.**

**The impact of implementing in-line filtration bags was an increase in the number of rejected units due specifically to:**

- **Over weights (due to learning curve)**
- **An increase in clots noted during leukoreduction**

**NYBC looked at automated mixer/scales as a solution for decreasing the reject rate.**

**A Return on Investment (ROI) model was developed and evaluations of two different models of mixer/scales were conducted to verify the ROI assumptions.**

**The final decision for purchase of the mixer/scale was based on operational considerations (ease of use, space requirements, battery life, warranty period, data capabilities).**

## MATERIALS AND METHODS

**Baseline data was gathered for the quality elements the scales were expected to impact:**

- **clotted units**
- **under weight units**
- **overweight units**
- **low volume units**

**The average volume of collections was evaluated as part of the ROI for the potential of extra plasma.**

**Trials of two devices were run in a geographic area with higher reject rates and where data would be easily controlled and measured. It was recognized that the trial data would be too small to make conclusions about the reduction in clotted units.**

**Pre implementation baseline data and post implementation data of similar time periods and significant size was analyzed to verify that full scale implementation would reflect the same results as the trial and to measure the reduction of clotted units.**

## RESULTS

**Implementation results show some differences from the trial results but both data sets show a significant reduction in rejected units.**

**Full implementation was completed recently and we believe there is still a learning curve and that the overweight rate will be further reduced.**

**The reduction in low volume units, for which red cells are distributed is significantly better in the implementation data than the trial data.**

### Trial Results

| | Rejected Units | | | | Useable Units |
|---|---|---|---|---|---|
| | Over Weight % | Under Weight % | Clotted Units % | Total Reject % | Low Volume % |
| Trial Baseline | 0.3 | 1.53 | 0.5 | 2.33 | 3.81 |
| Trial Results N = 1534 | 0.2 | 0.91 | .25* | 1.36 | 1.82 |
| Trial Improvement % | 50% | 68% | 100% | 71% | 109% |
| *projected not measured | | | | | |

### Implementation Results

| | Rejected Units | | | | Useable Units |
|---|---|---|---|---|---|
| | Over Weight % | Under Weight % | Clotted Units % | Total Reject % | Low Volume % |
| Revised Baseline | 0.38 | 1.1 | 0.54 | 2.02 | 3.59 |
| N = 100,004 | | | | | |
| Implementation Results | 0.34 | 0.38 | 0.22 | 0.94 | 0.73 |
| N = 74,827 | | | | | |
| Improvement | 12% | 189% | 145% | 115% | 392% |

## CONCLUSIONS

**Implementation of automated mixers has increased efficiency, made more blood available to patients and contributed to financial savings.**

**The largest impact of implementation, although not large on the ROI, was a reduction in low volume units. This has increased the amount of plasma available and provides more uniform products to customers.**

**The reduction in clotted units has had a more positive impact than originally projected in the ROI as NYBC is now at 100% leukoreduction.**