

## Customer Success Story

### Data Analysis of Haematopoietic Stem Cell Collections Identifies Methods for Improving Performance and Reducing Collection Days



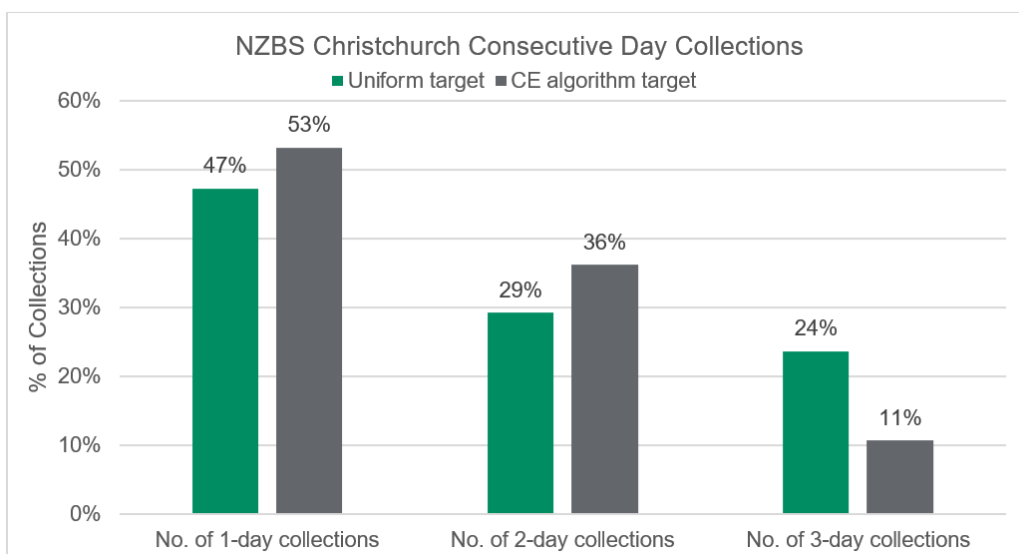
**The customer:** New Zealand Blood Service, Christchurch, New Zealand

**The problem:** The team at New Zealand Blood Service used a uniform target for blood volume to process during haematopoietic stem cell (HSC) collections, regardless of the patient's parameters, including target cell precount and goals for the collected product. They experienced harvesting failures, and in some cases, multiple collection days were necessary to meet HSC harvesting goals. Both undercollection and overcollection can lead to added staffing costs for long procedures, costs associated with patient readmittance, and decreased cell collection performance.

**How Veda Solutions helped:** Analysis of HSC cell collection procedure data provided insight into process performance and the best way to approach collections. Evaluation of two different approaches showed that using a prediction algorithm resulted in higher-dose products that met harvest targets with a lower number of collections. Meeting harvest goals more quickly saves operating costs associated with running apheresis cell collection procedures and minimizes the time the patient spends connected to a device.

**Methods:** Statistical analysis of cell collection data focused on two different approaches to procedure planning. Performance was compared between procedures that processed a uniform target of 2.0 to 3.0 times the patient's total blood volume (TBV) and those that used a prediction algorithm based on a collection efficiency (CE) target.

**Results:** HSC predictability was high for both approaches. The number of collected cells and procedures per patient showed a trend suggesting improved performance for procedures that used a CE target algorithm, meaning harvesting goals were met more quickly and with fewer procedures when compared to procedures that used a uniform TBV processed target. **The number of procedures that required three consecutive collection days decreased when a CE target algorithm was used (P < 0.05).** This approach improved performance but also led to decreased costs, reduced procedure times, and reduced the duration of patient-to-device connectivity.



The success of HSC transplants relies on optimal HSC harvesting. Data analysis helps identify methods for determining the optimal blood volume to process and ways to optimize collection approaches. In the growing fields of stem cell transplant and cell and gene therapies, collection sites can enhance their HSC harvesting goals by embracing predictive algorithms, data analytics, and customized planning. This approach enables more efficiency and consistency within the cell collection process.

Ready to optimize your cell collection process?

**Let's Connect!**

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