Implementing an integrated communication system between an apheresis device and our center's blood establishment computer system

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Background/Case Studies:

Our medium sized community-based blood center wanted to reduce paper records and manual data entry. Our center purchased a Component Collection System in 2021 to collect red cells and plasma from donors on mobile drives. Our blood operations team collaborated with the vendor to implement a data management system (DMS) to bi-directionally interface the device with our Blood Establishment Computer System (BECS).

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Study Design/Methods:

A collaborative approach was followed which included system design, interface development, validation, operational training, and go-live monitoring. Weekly meetings were held to ensure alignment between our center and the vendor team. The device with DMS was installed during the design alignment stage allowing for procedure data to be collected. Bi-directional data interface included fields to minimize manual data entry. Donor parameters including gender, height, weight, hemoglobin/hematocrit, donor and donation id are sent from the BECS to DMS. Operators request donor parameters from DMS by scanning the donation id on the device and verifying the donor's name and date of birth. At the conclusion of a procedure, draw data including blood loss, start/stop times, arm used, phlebotomist ID, and volume collected are sent to the BECS via DMS.

Results/Findings:

69% of procedure records (1,643/2,387) were sent from DMS after 15 months use. This allowed staff time to focus on data entry for exceptions. Of the procedure data not transferred, half were the result of internet connectivity issues at mobile locations, and the other half were due to collection outcome (3 primary reasons are QNS, single unit recovery, or QC alerts to tag product). Interfaced data reduced time for the record review process, as a validated interface eliminated the risk of incorrect draw data into the BECS. In addition, the interface application checked for conditions that required additional product QC and alerted staff. Weekly communication resolved issues quickly between teams and allowed for an efficient deployment of this IT solution. The integrated system was determined simple to use and required minimal training. The interface was built to capture collection procedure information that was necessary for product documentation in the BECS. Dashboard and reports would be used to source other procedure information allowing for metric monitoring, staff training on alarms and alerts or overall performance and instrument utilization.

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Conclusion:

Key to a successful implementation of an integrated system requires a collaborative project management approach. Team members should include collection staff, blood center IT, quality staff along with the DMS team and clinical consultants. Our center will continue to pursue a paperless environment across all devices leveraging lessons learned from this installation.